
Sent: 5/12/2017 1:23:54 PM
To: 'davidrf Franz@gmail.com' [davidrf Franz@gmail.com]
CC: Rusek, Benjamin [BRusek@nas.edu]; Shi, Pei yong [peshi@UTMB.EDU]; Lowenthal, Micah [mlowenth@nas.edu]; Mendoza, Imelda [imendoza@UTMB.EDU]
Subject: RE: Wuhan CAS-NAS mtg

If you could contact him that would be great. He might talk in the second general heading of biotech, etc. If he's not available it would be nice to get his suggestion as to other senior folks who might be interested in this area. There is also a newly released NAS report on this general topic that I have yet to see but might serve as a good foundation for discussions. There's a public discussion/webinar scheduled for 14 Feb on the report.

From: davidrf Franz@gmail.com [mailto:davidrf Franz@gmail.com]
Sent: Friday, February 10, 2017 10:46 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>; Mendoza, Imelda <imendoza@UTMB.EDU>
Subject: Re: Wuhan CAS-NAS mtg

Oh, too bad on Peggy. When we last spoke she seemed quite interested, but I assume something came up. I'm happy to check with David. Do you want me to go ahead? dave

Sent from my iPhone

On Feb 10, 2017, at 9:15 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

I saw the note that Peggy Hamburg will not be able to join us. I wonder if we could get Dave Relman?

From: davidrf Franz@gmail.com [mailto:davidrf Franz@gmail.com]
Sent: Friday, February 10, 2017 6:56 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>; Mendoza, Imelda <imendoza@UTMB.EDU>
Subject: Re: Wuhan CAS-NAS mtg

All good. Just landed IAD from Delhi. Re call I have mid-day meeting tue and 9am minor procedure Tuesday, otherwise open schedule. Dartmouth and travel Thur and Friday so schedule pretty full. Dave

Sent from my iPhone

On Feb 9, 2017, at 3:23 PM, Rusek, Benjamin <BRusek@nas.edu> wrote:

Hi Jim,

I will contact Peggy now and have La Tasha contact the group about the con call.

Kind regard,

Benjamin J. Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, February 09, 2017 3:14 PM
To: Rusek, Benjamin; Dave Franz (davidrf Franz@gmail.com)
Cc: Shi, Pei yong; Lowenthal, Micah; Mendoza, Imelda
Subject: RE: Wuhan CAS-NAS mtg

Ben, please go ahead and set up the call for next week. I just spoke to Tom K and I think that he's available—he's definitely interested and Zhiming is anxious to have him participate.

It would be great if we could get Peggy Hamburg to join us. We definitely need high-level participant to match the Chinese side.

Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, February 09, 2017 1:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Dave Franz (davidrf Franz@gmail.com) <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: Wuhan CAS-NAS mtg

Greetings,

Fantastic work! Good to virtually meet you Dr. Shi. This is great progress. Your suggestions on Chinese participants are excellent. I am glad that you are in touch with Zhiming, it seems that folks are coming back on line in China after the new year holiday period. Hope to hear more from Zhiming about the proposed agenda and topic list we sent.

Jim your suggestions on meeting duration, location and the site visit sound very reasonable (thought that the visit might take place on the 3rd day).

Re hotel costs, we budgeted for the USG per diem rate in Wuhan (135 USD per night for hotel) but it can be higher if the rate includes things like airport pick up and/or breakfast.

Re # of speakers, we budgeted for 7 total participants for the U.S. but might be able to stretch it to 8 if we get decent prices on flights. U.S. participants discussed so far:

Participants:

Franz
Le Duc
Shi
Rusek (my flight is on hold from Oct trip).

Then maybe invite:

Ksiazek
Palese
Hamburg
1 additional person

Re expectations of the sponsors, half hard science talks and half operations/management/biosafety etc will work well.

Re con call, Happy to have La Tasha set this up for next week. I can also contact, Ksiazek, Palese, and Hamburg and see if they are available/interested.

Kind regards,

Benjamin J. Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, February 09, 2017 1:32 PM
To: Rusek, Benjamin; Dave Franz (davidrf Franz@gmail.com)
Cc: Shi, Pei yong
Subject: Wuhan CAS-NAS mtg
Importance: High

Ben and Dave,

As mentioned previously, Pei Yong has agreed to serve on our organizing committee and I discussed the upcoming meeting with him, and he was then able to talk to Zhiming last night to get his initial thoughts on speakers, etc. The good news is that Zhiming remains very excited about the meeting and his goal is to engage with very senior Chinese leadership as participants. He proposes to invite the vice chairman of CAS, Ya Ping Zhang, as well as George Gao and Xu Jian Guo, a high-ranking leader of China CDC. He will also invite participants from Kunming, and the agriculture lab in Harbin. He envisions a small meeting on the order of about 30 senior officials for the core discussions. He will open up the presentations to a larger group of perhaps 100 total, but their participation would be significantly limited.

Zhiming is re-thinking the location of the meeting and is considering a luxury hotel in Wuhan as opposed to the lakeside retreat, since it is a bit out of the way.

The current plan is for a 2 ½ day meeting, to include a site visit to the new BSL4 lab—details to follow if this is part of the 2 ½ day agenda or an additional optional excursion.

We will be responsible for the travel and hotels of US participants; they will handle the expenses for the Chinese participants. I guess we will need to revisit the hotel meeting site costs depending upon where Zhiming suggests.

He liked the idea of a reception in the museum and had other suggestions for evening entertainment that we can discuss later.

Can we set up a conference call for early next week to discuss potential speakers? Please let us know a convenient time.

During the call, we need to discuss:

- Appropriate high level NAS participation to match the CAS vice-chair. I wonder if there is any flexibility in Diane's schedule. Alternatively, if she can make the following week, I could drop out.
- Greater detail of the proposed agenda (I told Pei Yong that we would have about half "hard science" talks and half operations/management/biosafety etc.). Ben, we need to be clear on the expectations of the sponsors.
- We are proposing that all talks be at a high level, appropriate for organizational leaders who deal primarily with policy issues—nothing "in the weeds".
- As we will have a number of CAS members, we need to include some NAS members as well. I mentioned Peter Palese but we will need others. Ben, how many speakers aside from you, Dave, me and Pei Yong can we support?
- We should include Tom Ksiazek if he's available.

Below are some suggested speakers where we might help out.

1. Improving the public health response to disease outbreaks and issues associated with combating key diseases of concern to China and the U.S.

- Anti-viral countermeasures (strategy and R&D) Pei Yong Shi
- Host-pathogen interaction (pathogenesis)
- Combating vector borne disease (e.g. Zika and Dengue) Pei Yong Shi can give an overview of our institutional response to Zika,
- Regulatory issues (maintaining reference collections/academic repositories)
- Pathogen transfer (domestic and international)
- Improving the laboratory's role in emergency health response (Discussion of issues like dedicated high-containment 'hospital room' in the lab vs. working with local hospital for care of a LAI patient outside the lab) Le Duc can relate UTMB approach

2. Gain of function research, gene editing, targeting and delivery and other novel biotechnology

3. Biosafety, biosecurity and bioethics

- New technology for laboratory biological risk management
- Improving response to incidents at the lab (fire, police, environment release and paramedic)
 - Improving biosafety and biosecurity training we are continuing to discuss collaborations with training programs with both Wuhan and Kunming and perhaps we will have a signed agreement to discuss by then.
- Laboratory leadership, culture and ethics Dave Franz

4. Laboratory commissioning, construction and sustainment

- Requirements for high containment labs in China and the U.S and discussion of recent projects (Possible presentation title: *"Being a good neighbor" lessons learned from Boston, UTMB and KSU*)
- Community relations and public communication (Possible presentation title: *High-containment labs in the community: Health, Safety and Public Relations*)

5. Areas for Enhanced Cooperation on emerging Infections, laboratory safety, and global health security between China and the U.S.

- Influenza, including avian influenza Peter Palese/Harbin speaker

Thanks, Jim

James W. Le Duc, Ph.D.
 Director
 Galveston National Laboratory
 University of Texas Medical Branch
 Galveston, TX 77555-0610
 (t) 409-266-6500
 (f) 409-266-6810
 (m) (b)(6)

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 5/25/2017 5:16:23 PM
To: LeDuc, James W. [jwleduc@UTMB.EDU]; 'David A Relman' [relman@stanford.edu]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; 'davidrfranz@gmail.com' [davidrfranz@gmail.com]; Swayne, David <David.Swayne@ARS.USDA.GOV> (David.Swayne@ARS.USDA.GOV) [David.Swayne@ARS.USDA.GOV]; 'Saif, Linda' [saif.2@osu.edu]; Shi, Pei yong [peshi@UTMB.EDU]
CC: Mendoza, Imelda [imendoza@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]; Lowenthal, Micah [mlowenth@nas.edu]; Morgan, LaTasha [LMorgan@nas.edu]
Subject: Program, articles and photos from Wuhan
Attachments: zh-Second China-U.S. Workshop.pdf; CAS NAS workshop news.pdf

Greetings,

I have spoken to some of you post meeting but thanks again for your work in advance of the NAS CAS workshop, willingness to travel to Wuhan and excellent presentations at the workshop. We really appreciate the time and effort that you put into making this event a success. I have attached a PDF of the conference book for your information.

Han Zhang at NIV sent me links to several Chinese language news articles about the workshop and the NIV's Chinese language announcement, I ran the links through Google translate and the results are... not too bad. Screen shots of the English translations are attached in another PDF document with links to the Chinese language article below the translation. The NIV Chinese language link has photos:

http://www.whiov.ac.cn/xwdt_105286/zhxw/201705/t20170523_4796207.html

I am working on draft meeting summary documents and will get those out to the group ASAP. I have the Chinese ppt presentations and copies of your final talks and will create a PDF slide book of all the presentations in the next few days. If you would like a specific Chinese presentation file please let me know.

PS I created an album on a Google photos. It includes photos that I took and some of yours. You should be able to access the album and upload additional photos here: (b)(6)

Kind regards,

Benjamin J. Rusek
The U.S. National Academy of Sciences
1-202-334-3975

2nd China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19 2017
Wanda Realm Hotel Wuhan
Wuhan, China

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Sponsors



Organizers



Co-Organizers



Foreword:

Dear Attendee,

It is our pleasure to welcome you to the 2nd China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security.

With the development of globalization, industrialization and modernization, and the changes in the environment and climate, different infectious diseases and various public health emergencies are posing serious threats to human health. In addition, as the global pace of building laboratories has been accelerated significantly, laboratory safety issues have become increasingly prominent. Thus, the global community is facing new challenges in public health.

This workshop will mainly focus on safe laboratory construction and operation, innovative biotechnology, prevention of emerging infectious diseases, biosafety and bioethics. By gathering extraordinary reports on scientific and technological achievements, and discussing the current development on related studies, the participants from China and the United States can communicate and get further understanding regarding new issues that occur in field of global health biosafety. Under this condition, this workshop aims at utilizing the advantages of China-U.S. cooperation and collaboration for responding to emerging infectious diseases more positively and guarantee laboratory and global health biosafety, so as to make more contributions to the medical industry and human health.

We encourage you to participate actively in the presentation sessions and not to hold back from interacting with your new colleagues at social events. We are looking forward to three days of exciting science and stimulating discussion that identifies future goals and strategies to understand the challenges of emerging infections, laboratory safety and global health security.

Thank you for coming; we hope you enjoy your stay in Wuhan.

Yours sincerely,

Zhiming Yuan and David R. Franz

Co-chairs of 2nd China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

General Information

Venue

All sessions of the workshop will be held in the No.4 Multi-Function Hall (3rd floor) of Wanda Realm Hotel Wuhan, China.

Language

The official workshop language is English.

Presentation Facilities

PowerPoint presentations are encouraged. Laptops will be provided in the No.4 Multi-Function Hall. Speakers are advised to upload and preview their presentations prior to each session. Staff will be available in the Hall to help set up presentations.

Registration

The Registration Desk will be located in the lobby of the hotel at 14:00-21:00 on May.16th.

Badge Policy

All registered delegates are provided with an identity badge. Please wear it at all times to ensure admission to the workshop.

Tea Breaks

Tea breaks are shown in the program section and will be taken outside the No.4 Multi-Function Hall.

Meals

Breakfast is included in the hotel accommodation. Lunch and dinner tickets will be available at registration. Breakfast is provided in the buffet restaurant (1st Floor) of the hotel at 06:00-10:30.

Accommodation

Participants are encouraged to stay in Wanda Realm Hotel Wuhan.

Address: No. 105 Donghu Road, Wuchang District, Wuhan, China

TEL: (86 27) 5900 8888

Conference Secretariat

The staff in Wuhan Institute of Virology, Chinese Academy of Sciences is available for questions at all times during the workshop. For any further information during the workshop please contact the secretariat from May 16th - 19th during the daytime hours.




The Workshop Secretariat:

Ms. Han Zhang (86) 158 2732 0997

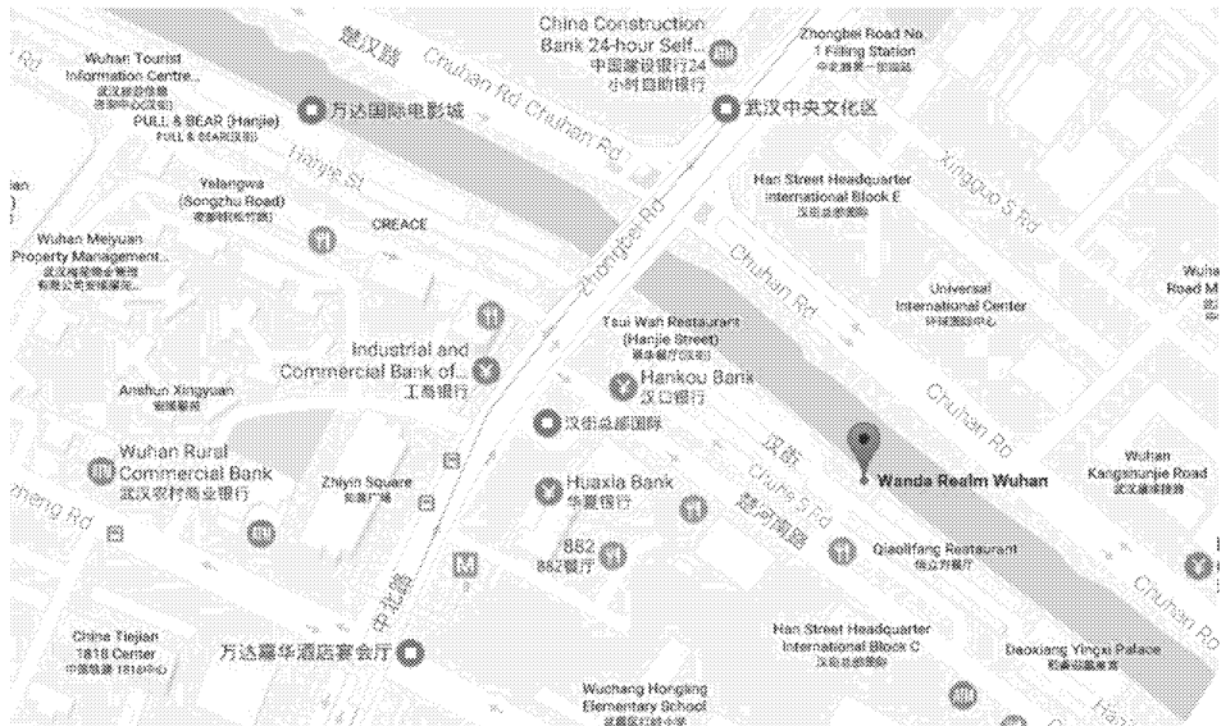
Ms. Chun Zhang (86) 139 8620 5636

Ms. Fengyin Jin (86) 158 2759 9936

Weather in Wuhan

Date	May 17 Wednesday	May 18 Thursday	May 19 Friday
Weather	 30/18°C	 31/20°C	 31/20°C

Map and Transportation



Taxi:

The duration of taking a taxi from Wuhan Tianhe International Airport to the venue will spend around 40 minutes.

Public Transportation:

1. Subway:

Chu He Han Jie Station on Subway Line 4 is the nearest station to the venue.

The hotel is 464 meters to the station.

2. Train:

a) Hankou Railway Station

The duration of taking a taxi from this railway station to the venue is around 30 minutes.

b) Wuhan Railway Station

It is an estimated 30-minute taxi ride from the station to the venue.

c) Wuchang Railway Station

Wuchang Railway Station is the nearest station to the venue. It is an estimated 20-minute taxi ride.

Meeting Program

Note: Each report will take 25 minutes including a 5-minute Q&A.

Date	Time	Agenda
Tuesday 16 th May	14:00-21:00	Registration Address: Wanda Realm Hotel Wuhan No.105 Donghu Road, Wuchang District, Wuhan
	19:00-21:00	Dinner
Wednesday 17 th May	09:00-10:00	Welcome and opening remarks <i>Chair – Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS)</i> China: Xinwen Chen (Director General/Principle Investigator, Wuhan Institute of Virology, CAS) U.S.: Linda Saif (Academician, Ohio State University) David Relman (Academician, Stanford University) James LeDuc (Professor, Galveston National Laboratory) <i>- Technical aspects of high-containment lab sustainability: challenges of maintaining a maximum containment laboratory</i>
	10:00-10:30	Tea break and group photo
	Session 1 : Gain of function research, gene editing, targeting and delivery and other novel biotechnology -Thoughts on Gain of function research, gene editing, targeting and delivery and other novel biotechnology -The recent advances in technology and their applications <i>Chair –Yanyi Wang (Deputy Director General/Principle Investigator, Wuhan Institute of Virology, CAS)</i>	
	10:30-10:55	<i>Genome engineering and other life sciences technologies: challenges and opportunities</i> David Relman (Academician, Stanford University)
	10:55-11:20	<i>Construction and rescue of a functional synthetic baculovirus</i> Zhihong Hu (Principle Investigator, Wuhan Institute of Virology, CAS)
	11:20-11:45	<i>High-throughput functional genomics: coding, non-coding and beyond</i> Wensheng Wei (Professor, Peking University)
	11:45-14:00	Lunch
	Session 2: Public health response to outbreaks and issues -Collaborating on influenza, including avian influenza -Host-pathogen interaction (pathogenesis) <i>Chair –James Le Duc (Professor, Galveston National Laboratory)</i>	

	14:00-14:25	<i>Dengue Immune Sera Enhance Zika Virus Infection in Human Peripheral Blood Monocytes</i> Xia Jin (Principle Investigator, Institut Pasteur of Shanghai, CAS)
	14:25-14:50	<i>Anti-viral drug discovery in SIMM</i> Jianping Zuo (Principle Investigator, Shanghai Institute of Materia Medica, CAS)
	14:50-15:15	<i>Engineered human antibody constant domain as candidate against Ebola virus</i> Rui Gong (Principle Investigator, Wuhan Institute of Virology, CAS)
	15:15-15:35	Tea break
	15:35-16:00	<i>Antiviral drug discovery and development</i> Peiyong Shi (Professor, University of Texas)
	16:00-16:25	<i>Improving the laboratory's role in emergency health response, Communications during crisis</i> James Le Duc (Professor, Galveston National Laboratory)
	16:25-17:25	Round Table Discussion Chair – Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) – James Le Duc (Professor, Galveston National Laboratory) - Review of day one and plan for day two
	17:25-20:00	Dinner
Thursday 18 th May	Session 3: Emerging infectious diseases and global health security -Anti-viral countermeasures (strategy and R&D) -Improving the laboratory's role in emergency health response (Discussion of issues like dedicated high-containment hospital room' in the lab vs. working with local hospital for care of a LAI patient outside the lab) Chair – Peiyong Shi (Professor, University of Texas)	
	08:30-08:55	<i>Biosafety, Biorisk and Biosecurity – Natural spill-over: Ebola</i> <i>-International efforts Man-made: International regulation</i> George F. Gao (Academician, Institute of Microbiology, CAS)
	08:55-09:20	<i>A One Health Strategy for Responding to Emerging Infectious Diseases</i> Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University)
	09:20-09:45	<i>Evolution and pathogenesis of bat SARS like coronavirus</i> Zhengli Shi (Principle Investigator, Wuhan Institute of Virology, CAS)
	09:45-10:10	<i>Epidemiological characteristics of Severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery</i> Mifang Liang (Principle Investigator, National Institute for Viral Disease Control and Prevention)
	10:10-10:20	Tea break
	10:20-10:45	<i>Animal Coronaviruses: Global Threats to Humans and Animals</i> Linda Saif (Academician, Ohio State University)
	10:45-11:10	<i>Existing weapons against the emerging Zika virus</i> Chengfeng Qin (Professor, The Academy of Military Medical Sciences)

11:10-11:35	<i>Avian Influenza at the Animal-Human Interface: Global Challenges for Scientific Contributions to Control</i> David Swayne (Director, USDA Southeast Poultry Research Laboratory)
11:35-12:00	<i>Non-structural Protein 1: A Key for Flavivirus Transfer from Host to Vector</i> Gong Cheng (Professor, Tsinghua University)
12:00-12:25	<i>Rapid response to Zika virus emergence: Diagnostics and vaccine development</i> Peiyong Shi (Professor, University of Texas)
12:25-14:00	Lunch
Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment -Requirements for high containment labs in China and the U.S and discussion of recent projects -Community relations and public communication -Should biocontainment labs have clinical facilities? -Biocontainment maintenance and operations / Outbreak response / Importance of reference collections and reagents <i>Chair – Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS)</i>	
14:00-14:25	<i>Brief and Status Quo on China Accreditation for Biosafety Laboratories</i> Peijun Zhai (Division Director, China National Accreditation Service for Conformity Assessment)
14:25-14:50	<i>Biocontainment operations and maintenance and UTMB training for other containment facilities</i> Thomas Ksiazek (Professor, Galveston National Laboratory)
14:50-15:15	<i>National High Containment Facilities for Animal Diseases Control and Prevention in Harbin, China</i> Zhigao Bu (Director General/Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences)
15:15-15:40	<i>Kunming National Primate Research Center of High-level Biosafety: Future Perspective</i> Longding Liu (Principle Investigator, Institute of Medical Biology, Chinese Academy of Medical Sciences)
15:40-16:00	Tea break
Session 5: Biosafety, biosecurity and bioethics - New technology for laboratory biological risk management - Improving response to incidents at the lab (fire, police, environment release and paramedic) - Improving biosafety and biosecurity training - Laboratory leadership, culture and ethics <i>Chair – David R. Franz (Professor, US Army Medical Research Institute of Infectious Diseases)</i>	
16:00-16:25	<i>Biosafety and bioethics consideration for emerging disease control research</i> Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS)
16:25-16:50	<i>Regulatory issues affecting the operation of a functional high containment lab: Obtaining, shipping, maintaining and exchanging</i>

		<i>high hazard pathogens in today's regulatory environment. Does the science matter?</i> Thomas Ksiazek (Professor, Galveston National Laboratory)
	16:50-17:15	<i>Leadership, Responsibility and Progress</i> David R. Franz (Professor, Kansas State University)
	17:15-18:00	Conclusions <i>Chair –Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS)</i> <i>–David R. Franz (Professor, Kansas State University)</i> - Conclusions from the meeting and discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on Emerging Infections, Laboratory Safety and Global Health Security - Concluding remarks by Zhiming Yuan and David Franz Co-chairs
	18:00-20:00	Dinner
Friday 19th May	09:00-10:00	Leave for Zhengdian Park, Wuhan Institute of Virology, CAS
	10:00	A visit to Wuhan P4 Lab and discussions

Bio-Sketches and Abstracts

David Relman

Academician, Stanford University



David A. Relman, M.D., is the Thomas C. and Joan M. Merigan Professor in the Departments of Medicine, and of Microbiology and Immunology at Stanford University, and Chief of Infectious Diseases at the Veterans Affairs Palo Alto Health Care System in Palo Alto, California. He is also Co-Director of the Center for International Security and Cooperation and Senior Fellow at the Freeman Spogli Institute for International Studies at Stanford University.

Relman was an early pioneer in the application of molecular methods for studying the human indigenous microbiota. Most recently, his work has focused on human microbial community assembly, and community stability and resilience in the face of disturbance. Previous work included the development of molecular methods for identifying novel microbial pathogens, and the subsequent identification of several historically important microbial disease agents, as well as molecular mechanisms of bacterial pathogenesis. One of his papers was selected as “one of the 50 most important publications of the past century” by the American Society for Microbiology.

Dr. Relman received an S.B. (Biology) from MIT, M.D. from Harvard Medical School, and joined the faculty at Stanford in 1994. He is Chair of the Forum on Microbial Threats at the National Academy of Medicine, and a member of the Committee on Science, Technology & Law at the National Academies of Science, and advises several US Government agencies on current and future microbial threats. He served as vice-chair of the NAS Committee that reviewed the science performed as part of the FBI investigation of the 2001 Anthrax Letters, as a member of the National Science Advisory Board on Biosecurity (2005-2014), and as President of the Infectious Diseases Society of America (2012-2013). He received an NIH Pioneer Award in 2006, an NIH Transformative Research Award in 2011, and was elected a member of the National Academy of Medicine in 2011.

Genome engineering and other life sciences technologies: challenges and opportunities

Abstract: Advances in the life sciences in the 21st century have the potential to greatly improve the health of humans, animals, plants, and the environment around the globe. While the overwhelming majority of outcomes are beneficial, a small number of discoveries and capabilities pose unusual risks for misuse and widespread harm. New methods and approaches for modifying genomes, selecting new phenotypes, and disseminating new genetic constructs provide cogent examples of benefits and risks. There are several critical but challenging questions that need to be discussed across the international communities of scientists and policy-makers: Are there now experiments in the life sciences that ought not to be undertaken or need greater scrutiny because of unusual associated risks? What should be the process by which a consensus is reached about the identification and management of such work? What are the moral and ethical responsibilities of life scientists? Despite the challenges, these conversations provide important opportunities for international collaboration and partnership that ought to be pursued.

Zhihong Hu

Principle Investigator, Wuhan Institute of Virology, CAS



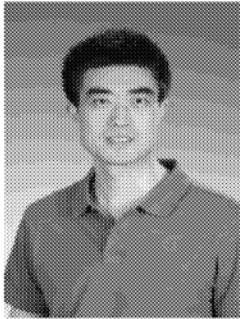
Zhihong Hu received her PhD degree in Virology at the department of Virology, Wageningen Agricultural University in the Netherlands in 1998. She has been a research scientist at the Wuhan Institute of Virology, Chinese Academy of Sciences since 1993 and became a professor in 1997. During 2000-2008 she had been the Director of the Institute. Currently she is the Director of the China Centre for General Viruses Culture Collection, and the group leader of the research group of Systems Virology at Wuhan Institute of Virology, Chinese Academy of Sciences. Dr. Hu's research has focused on molecular biology and viral-host interaction of baculoviruses. Her contributions include the functional genomics and genetic modification of *Helicoverpa armigera* nucleopolyhedrovirus (HearNPV), a biological control agent against cotton bollworm. Her group systematically revealed the structure and functional difference between the two phenotypes of baculoviruses: budded viruses and occlusion derived viruses. Recently her group reported the rescued of the first synthesized functional baculovirus, the largest DNA virus that has been synthesized so far. Apart from the baculovirus research, Dr. Hu is also interested in the Severe Fever with Thrombocytopenia Syndrome Virus (SFTSV) and Crimean-Congo Hemorrhagic Fever Virus (CCHFV), two bunyaviruses circulating in China.

Construction and rescue of a functional synthetic baculovirus

Abstract: Synthetic viruses provide a powerful platform to delve deeper into the nature and function of viruses. It allows genome editing by simultaneous deletion, insertion or rearrangement of a number of genes. Most synthetic viruses have been RNA viruses (< 30 kb) and small DNA viruses. Baculoviruses are large dsDNA viruses and have been used widely in bio-control of insect pests and expression of pharmaceutical proteins including vaccines. Here we reported the synthesis of a ~145 kb genome of a baculovirus by a combination of PCR and recombination techniques in yeast cells. A viable progeny virus was rescued upon transfection of insect cells with the synthetic genome. The synthetic baculovirus had structural and functional properties similar its parental phenotype. To date, this is the largest DNA virus synthesized and offers a leap forward in the field of gene manipulation in baculoviruses and other large dsDNA viruses.

Wensheng Wei

Professor, Peking University



Principle investigator of Biodynamic Optical Imaging Center (BIOPIC), Beijing Advanced Innovation Center for Genomics, Peking-Tsinghua Center for Life Sciences, State Key Laboratory of Protein and Plant Gene Research, and School of Life Sciences at Peking University. Our research is mainly focused on the development of eukaryotic genome editing tools, especially their applications

in high-throughput functional genomics. The combination of forward and reverse genetic means is employed, often in a high-throughput fashion, for the identification of host genes important for host response during microbial infections or tumorigenesis.

High-throughput functional genomics: coding, non-coding and beyond

Abstract: We have previously developed a high-throughput screening method using CRISPR/Cas9 system, which has been broadly applied in the functional studies of coding genes. We have also established the first high-throughput screening strategy for functional investigation of long non-coding RNAs (lncRNAs) using a lentiviral paired-guide RNA (pgRNA) library. The screen identified novel lncRNAs that can positively or negatively regulate cancer cell growth. We have recently developed a new approach for genome-wide screening of lncRNAs, a high-throughput method to study the function of topologically associating domains and active chromatin hubs, and, novel approach for speedy mapping of cancer drug target sites. These high-throughput strategies will facilitate the accurate and rapid identification of functional genomic elements in various settings, especially in cancer related studies.

Xia Jin

Principle Investigator, Institut Pasteur of Shanghai, CAS



Xia Jin, MD, PhD, is a Professor and Principal Investigator at Institut Pasteur of Shanghai (IPS), Chinese Academy of Science (CAS), and Associate Director of CAS Key Laboratory of Molecular Virology and Immunology. He had been a tenure-track Assistant (2001-2006) and Associate Professor (2007-2012) at University of Rochester, New York. He obtained a Medical Degree after completion of the 8-year Curriculum at Peking Union Medical College, Beijing China, and then a PhD degree in Viral Immunology from Open University under the tutelage of Regius Professor of Physic, Sir G.P.S. Sisson of University of Cambridge in England. He completed postdoctoral training with Drs. R. A. Koup and D. D. Ho, respectively, at the Aaron Diamond AIDS Research Center in New York. While in US, he has been a Principal Investigator or Co-investigator of over 20 research grants from NIH and The Bill & Melinda Gates Foundation. Back in China, he has been a Principal Investigator of National Key Program Project Grant of MOST, and grants from NSFC and CAS. He has served on numerous NIH study sections, and also as international expert reviewer for research agencies of England, Netherland, Hong Kong, Taiwan and Singapore. He has served as Chair (HVTN-064, HVTN-083) and Co-Chair (HVTN-063 and HVTN-094) of phase I HIV vaccine clinical trials conducted by the HIV Vaccine Trials Network (HVTN) of NIH/NIAID. He is an Academic Editor of PLoS ONE and Editorial Board Member of JAIDS. His laboratory works principally on immunology and vaccine of HIV, dengue virus, Zika virus. He has published over 80 SCI papers in academic journals such as Science, J Exp Med, J Clin Inv, J Immunol, J Virol, J Inf Dis, and Vaccine, including a highly cited one (Jin et al., J Exp. Med., 1999; 481 times, PubMed).

Dengue Immune Sera Enhance Zika Virus Infection in Human Peripheral Blood Monocytes

Abstract: Antibody dependent enhancement (ADE) has most often been associated with dengue virus (DENV). New studies using leukemia cell lines suggest that DENV specific antibodies can enhance Zika virus (ZIKV) infectivity, and vice versa. To examine in primary cells what are natural targets for ZIKV infection and mediators of ADE, we assessed a panel of 20 serum samples obtained from convalescent DENV-1 or DENV-3 infected subjects. All sera tested exhibited high binding potency, while modest or none neutralization activities against ZIKV. In human peripheral blood mononuclear cells, primary CD14+ monocytes, rather than B and T cells, were the principal susceptible target cells and supported enhancement of ZIKV infectivity by DENV immune sera. In addition, antibody blocking of either FcγRI (CD64), or FcγRII (CD32), or FcγRIII (CD16) resulted in diminished ADE of ZIKV infection by DENV immune sera. Our findings, for the first time, identified primary human monocytes as the major target cells for ZIKV infection, and the mediators of ADE infection; also, each of the three types of FcγR contributed of various degree to ADE infection. These results provide better understanding of pathogenesis of ZIKV infection and inform rational vaccine design.

Jianping Zuo

Principle Investigator, Shanghai Institute of Materia Medica, CAS



Dr. Jian-Ping Zuo, Professor, Lab of Immunopharmacology, State Key Laboratory of Drug Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences.

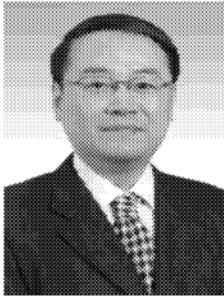
Shanghai Institute of Materia Medica (SIMM) has the longest history as a comprehensive research institution for drug discovery in China. In line with the mission of “Discovering new drugs to relieve patients suffering from various diseases”, SIMM has developed and commercialized over 100 new drugs in the past 80 years. Recent years SIMM also work on the anti-viral drug discovery in HBV, HCV, SARS-coV, DV, Flu-V, MERS-coV, Zika-V et al. We developed screening system which includes molecular & cell models, animal models, and combined the modern technology such as HTS, in silico target fishing. We did great efforts into anti-viral drug discovery from natural products and Traditional Chinese Medicine to find out active compounds for further study. Currently, several series of active lead compounds have been confirmed, and 3 of anti-viral drug candidates have been established.

Dr Zuo’s group is working on the pharmacological research in the way of new drug discovery. The major research fields are related with active compound screening, confirmation, evaluation and mechanism study in anti-autoimmune diseases and anti-viral drug discovery. During the past 17 years, Dr. Zuo’s group have put great efforts into the new drug discovery from natural products and Traditional Chinese Medicine. Currently, there are 3 new drug candidates on the clinical study, 1 new drug candidate is applying for clinical study and 2 new drug candidates are on the preclinical study.

Anti-viral drug discovery in SIMM

Rui Gong

Principle Investigator, Wuhan Institute of Virology, CAS



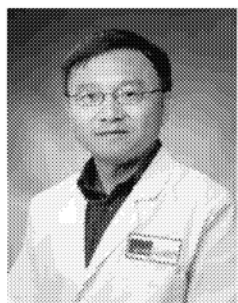
Dr. Rui Gong is a professor and head of Antibody Engineering Group in Wuhan Institute of Virology (WIV), Chinese Academy of Sciences (CAS). Dr. Gong graduated from Wuhan University in 2002 and received his Ph.D. also in Wuhan University in 2007. He entered National Cancer Institute (NCI), National Institute of Health (NIH), USA in 2007 for his training as a postdoctoral fellow. He joined WIV and established his group for antibody engineering-related research in 2012. The long-term goal of his group is to develop therapeutic antibodies and antibody domains for treatment of viral infection and other diseases. Dr. Gong won Federal Technology Transfer Award (NCI, USA) in 2011 and 2012, and received the support from Hundred Talent Program of Hubei Province in 2016. He has more than twenty publications and several patents. The grants hosed by him include the National Natural Science Foundation of China, and Young Scientist Subject of the National High Technology Research and Development Program of China (863 Project).

Engineered human antibody constant domain as candidate against Ebola virus

Abstract: Monoclonal antibodies have been successfully used for the therapy of many diseases. However, because of their large size (~150 kD), many limitations have also been found during their development and manufacture. The use of antibody fragments with smaller sizes is one of the attractive strategies to overcome these limitations. Antibody constant CH2 domain (~12 kD) was proposed as scaffold for library construction and selection of specific binders as novel therapeutic candidates termed C-based single domain antibodies (C-sdAbs). The isolated CH2 is a monomeric, independently folded domain with solved crystal structure, which contains seven β -strands connected by three loops (loop BC, loop DE, loop FG) and two helices. In our previous work, we engineered the native CH2 scaffold (m01s) for improve its stability and extension of its serum half-life to about 10 hours. Panning of a phage display library based on m01s against a peptide from HIV-1 envelope protein resulted in identification of a binder m2a1 that could interact noncompetitively with an HIV-1 neutralizing epitope and neonatal Fc receptor. We further modified m01s to increase its aggregation resistance. Then, we constructed a new library based on m01s which has complexities in excess of 10^{10} independent clones. Panning of this library against the glycoprotein (Gp) of Ebola virus (EBOV) resulted in selection of one dominant binder nAb7. Further affinity maturation on nAb7 was performed by random mutagenesis which led to identification of one clone (nAb7C2) with increased binding ability to EBOV Gp. It could neutralize VSV Δ G-EBOVGP pseudotype virus in BHK-21 with IC_{50} of ~200 nM. After further optimization, nAb7C2 mutant (nAb7C2M) was obtained which existed as monomer, and could neutralize VSV Δ G-EBOVGP pseudotype virus with IC_{50} of less than 100 nM. These results suggest that nAb7C2M has potential for being developed as novel anti-EBOV therapeutic candidate, and the C-sdAb technique platform could be very useful in screening of new drugs for prophylaxis and treatment of infectious diseases.

Pei-Yong Shi

Professor, University of Texas



Pei-Yong Shi, PhD, is I.H. Kempner Professor of Human Genetics, University of Texas Medical Branch, Galveston Texas, USA. He is also adjunct Professor of Emerging Infectious Diseases at the Duke-NUS Graduate Medical School in Singapore and Honorary Professor at the Wuhan Institute of Virology, Chinese Academy of Sciences. He received his Ph.D. in virology in 1996 from Georgia State University. After postdoctoral training at Yale University, he joined Bristol-Myers Squibb as a Principal Scientist to develop HIV and HCV therapeutics from

1998 to 2000. He then moved to the Wadsworth Center, New York State Department of Health, to study West Nile virus. From 2008 to 2015, he served as Dengue Unit Head and Executive Director to lead drug discovery at Novartis Institute for Tropical Diseases. His group developed the first infectious clones of the epidemic strain of West Nile virus and Zika virus, discovered two RNA cap methylation activities of flavivirus NS5 protein, identified essential RNA elements for flavivirus replication, established various platforms for flavivirus vaccine and drug discovery, and pioneered therapeutics development for dengue virus. He has published over 220 peer-reviewed articles and served as Editor (ACS Infectious Diseases, Journal of General Virology, and Nature Vaccine) and Editorial Board member (Journal of Virology, Virology, and Antiviral Research). He is internationally recognized for his scholar and administrative accomplishments at leading research institution, public health sector, and pharmaceutical industry.

Antiviral drug discovery and development

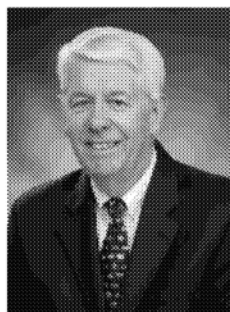
Abstract: Therapeutics is essential to control and treat infectious diseases. In this presentation, I will summarize the general strategies to develop antiviral drugs. Using dengue as an example, I will present a few projects using different antiviral approaches, including structure-based rational design, nucleoside/nucleotide inhibitor, cell-based screening, and host target-based therapy.

Rapid response to Zika virus emergence: Diagnostics and vaccine development

Abstract: The recent emergence of Zika virus and its association with congenital malformation prompted rapid development of novel diagnostics and vaccine development. In this presentation, I will summarize the current status, challenges, and potential solutions on the topic of Zika diagnosis and vaccine. In addition, I will present several novel diagnostic assays and vaccine candidates that are being developed in our team.

James LeDuc

Professor, Galveston National Laboratory



Dr. James LeDuc is the director of the Galveston National Laboratory, the only full-suit BSL4 laboratory in operation on an academic campus in the United States, and professor in the Department of Microbiology and Immunology at University of Texas Medical Branch (UTMB) in Galveston. He holds the John Sealy Distinguished University Chair in Tropical and Emerging Virology and the Principal Investigator for the National Biocontainment Training Center at UTMB. LeDuc joined UTMB in 2006 from the Centers for Disease Control (CDC) in Atlanta where he was the Influenza Coordinator. Before moving to UTMB, he served as CDC's director of the Division of Viral and Rickettsial Diseases and as the associate director for global health in the Office of the Director at the National Center for Infectious Diseases. Earlier he was a medical officer in charge of arboviruses and viral hemorrhagic fevers at the World Health Organization in Geneva. LeDuc also spent 23 years as a U.S. Army officer in the medical research and development command, with assignments in the United States and abroad, including the Walter Reed Army Institute of Research and USAMRIID. His career began as a field biologist with the Smithsonian Institution in West Africa. He is a fellow with the Infectious Diseases Society of America and has published over 200 scientific articles/book chapters. Dr. LeDuc earned his M.S.P.H and Ph.D. degrees from the University of California at Los Angeles.

Technical aspects of high-containment lab sustainability: challenges of maintaining a maximum containment laboratory

Abstract: The Galveston National Laboratory has operated at biological safety level -2, -3 and -4 since 2008. This experience offers us an excellent opportunity to review our costs of operations and share information that may be helpful as China begins operation of its own biocontainment facilities. We experienced significant costs in operations independent of the research expenses. These include utility costs, consumable supplies such as chemical disinfectants and protective suits, security costs, maintenance and operations personnel expenses, and health and safety training. We find these annual costs to be about 7-9% of the original construction costs. In addition, we have found it important to prepare for possible laboratory accidents and to actively engage in ongoing communications with our local community to ensure their understanding of the important public health work that is underway in our facility.

Improving the laboratory's role in emergency health response, communications during crisis

Abstract: Biocontainment laboratories play an important role in the recognition and response to infectious disease outbreaks by providing essential diagnostic capabilities, qualified technical experience in handling dangerous pathogens and in serving as a source of expert commentary regarding risk communications with the general public. The global Ebola crisis of 2014-16 provided an excellent opportunity to demonstrate these assets and to capture key lessons. These lessons include the need for advanced planning prior to an emergency, including identification of a trusted, experienced spokesperson to represent your facility, welcoming the involvement of political leaders during the crisis, providing definitive diagnostics, and coordination with the clinical care facilities to ensure the safety of staff and appropriate management of potentially infectious specimens and disposal of medical waste. Outbreaks are an opportunity to demonstrate the value of your facility to your country and the world. Be prepared.

George F. Gao

Academician, Institute of Microbiology, CAS



Professor George F. Gao obtained his PhD (DPhil) degree from Oxford University, UK and did his postdoc work in both Oxford University and Harvard University (with a brief stay in Calgary University). His research interests include enveloped viruses and molecular immunology. His group research is mainly focusing on the enveloped virus entry and release, esp. influenza virus interspecies transmission (host jump), structure-based drug-design and structural immunology. He is also interested in virus ecology, esp. the relationship between influenza virus and migratory birds or live poultry markets and the bat-derived virus ecology and molecular biology. He has published more than 420 refereed papers (Including papers in Cell, Nature, Science, The Lancet, New England Journal of Medicine, Proceedings of the National Academy of Sciences USA etc.), 10 books or book chapters and holds more than 25 UK, US and Chinese patents. **His research has recently expanded on public health policy and global health strategy.** He directed the Institute of Microbiology, Chinese Academy of Sciences, from 2014-2008 and is the founding director for the Tianjin Institute of Industrial Biotechnology, CAS; A China-Japan joint lab was established during his director-general term in 2006 in the Institute of Microbiology, CAS; He is currently the deputy director-general of China CDC for research and lab management; He is directing the building-up of newly-established medical school at University of Chinese Academy of Sciences; He led the China CDC team in 2014 (From September to November, when the disease went to its sky-high level) to work in Sierra Leone for fighting against Ebola and his heroic role there has made a great deal for the field work. He works hard now for establishing an Africa-based center for pathogens and tropical diseases.

Gao is a member (academician) of Chinese Academy of Sciences (elected in 2013), a fellow of The Third World Academy of Sciences (TWAS, also known as The World Academy of Sciences) (elected in 2014), a fellow of American Academy of Microbiology (AAM, elected in 2015), an associate (foreign) member of EMBO (European Molecular Biology Organization) (elected in 2016), a fellow of AAAS (American Association for the Advancement of Science) (elected in 2016), a fellow of RSE (Royal Society of Edinburgh) (elected in 2017).

Gao is a recipient of several international and national awards, including Thompson Reuters Research Front Award (2008), TWAS Medical Prize (2012), Nikkei Asian Prize (2014), Tan Jiazhen (C. C. Tan) Grand Scientific Achievement Prize (2014) and Life Science Innovation Award (2008), HLHL S&T Advancement Award (2015), JP Wu-Paul Janssen (Medical and Pharmaceutical) Award (2015), Japanese Foreign Minister's Commencement (2015) and Shulan Medical Sciences Award (2016).

Jiahai Lu

Professor, Zhongshan School of Medicine, Sun Yat-Sen University



Jiahai Lu is Professor in School of Public Health, Sun Yat-Sen University, and currently is the PhD supervisor of Epidemiology and Microbiology as well as Principal Investigator in Laboratory for Tropical Disease Control and Prevention and Guangdong Provincial Research Center for Severe Infectious Disease Prevention and Control Technology. The particular field of interest is in the infectious disease epidemiology, vaccinology and prevention and control on zoonotic diseases.

Prof. Lu has published more than 200 peer-reviewed papers on influential journals home and abroad such as *Science*, *Physiological Genomics*, *Respiratory Research*, *Vaccine*, and more than 40 papers have been embodied by SCI. Besides, He acts as the editorial board member of journals in China like *Chinese Medical Journal*, *Chinese Journal of Preventive Medicine* and *International Journal of Virology* as well as the reviewer of some international journals like *Vaccine* and *BMC Infectious diseases*.

Prof. Lu is the main advocate of One Health concept in China, who had held the first One Health international symposium in 2014, the first training school for CDC staffs and the first One Health summer school for graduate students in 2016. Prof. Lu had established animal-exposure occupational cohorts, and revealed avian- and swine-exposure was the main risk factors for human infected animal-origin influenza virus, and found evidences of air-borne influenza virus in farms and poultry markets. The results were published on *Clinical infectious diseases*, *Journal of infectious diseases*, *Journal of infection* and *One Health*. And Prof. Lu won the Best Poster of 3rd Global Risk Forum in Davos, Switzerland in 2015 regarding One Health study in Guangdong, China.

A One Health Strategy for Responding to Emerging Infectious Diseases

Abstract: One Health has been accepted as a new approach and strategy to tackle public health and biosafety problems, and was integrated into *Emergent Acute Infectious Disease Control "Thirteen-Five" Plan* (2016-2020) by National Health and Family Planning Commission of the People's Republic of China (NHFPCC). This purpose is to promote One Health strategy to solve crisis caused by emerging infectious diseases (EIDs) in China.

Our populations face imminent threats from EIDs, and over 70% of these pathogens could trace to animals and vectors. Along with climate change, animals' migration, economic globalization and the Belt and Road Initiatives, EIDs emerged once or twice a year in the past 3 decades. Additionally, in Guangdong, the frequent personnel exchanges, commodity trades, sub-tropical climate and traditional Cantonese dietary habits, lead to high incidence of EIDs, including SARS, multiple subtypes of avian influenza (H5N1, H5N6 and H7N9), Dengue fever and others.

In this context, One Health strategy was referred as holistic approach to respond rapidly to EIDs at the human-animal-environment interfaces, which was expected to break the boundaries between

animal and human health adopted collaborative, multidisciplinary and cross-sectoral approaches. We could develop vaccines for animals and animal-exposure occupational populations to interrupt the onset or early transmission, and also establish monitoring cohorts of animal-exposure populations to find clues of outbreak. Therefore, we can shift the current passive surveillance based on hospital sentinels into active response at human-animal-environment interfaces, and achieve active monitoring and early prevention. Several One Health paradigms, such as Hendra virus control in Australia, were proven to be more successful and lower cost in mitigating deaths than single-discipline approaches.

One Health strategy is dedicated to establishing new levels of collaborations between disciplines, nations and organizations, and teaching clinicians and veterinarians responding to challenges by such a way. This is extremely important for epidemiological development, especially as applied to EIDs control.

Zhengli Shi

Principle Investigator, Wuhan Institute of Virology, CAS



Dr. Shi is the director of the Center for Emerging Infectious Diseases of the Wuhan Institute of Virology. Her research focuses on viral pathogen discovery through traditional and high-throughput sequencing techniques. She has been studying the wildlife-borne viral pathogens, particularly bat-borne viruses since 2004. Her group has discovered diverse novel viruses/virus antibodies in bats, including SARS-like coronaviruses, adenoviruses, adeno-associated viruses, circoviruses, paramyxoviruses and filoviruses in China. One of her great contributions is to uncover genetically diverse SARS-like coronaviruses in bats with her international collaborators and provide unequivocal evidence that bats are natural reservoirs of SARS-CoV. She has coauthored >120 publications on viral pathogen identification, diagnosis and epidemiology.

Evolution and pathogenesis of bat SARS like coronavirus

Abstract: Horseshoe bats are recognized as the natural reservoirs of Severe Acute Respiratory Syndrome coronavirus (SARS-CoV), as an increasing number of SARS-like coronavirus (SL-CoV) have been detected in this bat family since 2005. However, gaps remain between currently known bat SL-CoVs and the direct progenitor of SARS-CoV. We have conducted a 5-year surveillance of SL-CoV in a cave inhabited by horseshoe bats in Yunnan, China. Our results revealed that genetically diverse bat SL-CoVs were circulating in this single location, including different novel strains with high sequence similarity to SARS-CoV in the highly variable N-terminal domain (NTD) and receptor-binding domain (RBD) of S protein and the ORF8 region, respectively. Meanwhile, compared with other SL-CoVs, strains identified from this cave exhibited higher sequence similarity to SARS-CoV in the non-structural proteins. Evidence supported that frequent recombination events have occurred at multiple genomic sites between different bat SL-CoVs within this cave and may have given birth to the direct ancestor of SARS-CoV. These findings offered important new insight into understanding the origin of SARS-CoV and addressed the potentially ongoing threat posed by bat SL-CoVs.

Mifang Liang

Principle Investigator, National Institute for Viral Disease Control and Prevention



Prof. Dr. Mifang Liang, Head of Laboratory of Viral Hemorrhagic Fever(VHF), National Institute for Viral Disease Control and Prevention, China CDC, is an active and highly respected virology professor in China, she was awarded as an expert to enjoy Special Government Allowance from the State Council. She received her medical doctor degree in Zhejiang University and Chinese Academy of Preventive Medicine in China in 1988, and post doctor training in USAMRRID, Fort Detrick,USA for VHF researches from 1992-1996. She was invited as a visiting professor in the University of Heidelberg, Germany from 1998-2000. She has been working on hemorrhagic fever (VHF) viruses for nearly 30 years, including hantavirus, Dengue virus, Chikungunya virus、CCHF virus、SFTS virus and the Ebola virus. As an national VHF expert, in the world responses to the outbreak of EVD, she played an active a role in preparation of national documents related to Ebola virus laboratory diagnosis, biosafety assessment、laboratory training and biosafety so on; She also played key role in the development of EVD diagnosis kit, which was first issued by Chinese FDA, provided to China CDC lab team to be used for clinical diagnosis of EVD in Sierra Leone.as well as the national and provincial laboratories for monitoring, contact tracing and clinical diagnosis of possible imported suspected EVD cases in China . She gained several national prizes in past years for her scientific contributions to medical science, and owned more than 20 patents and over 150 publications in VHF related research fields. Prof. Liang is also a national top biosafety expert involved in BSL-3 and BSL-4 facilities, resources, laboratory biosafety operations.

Epidemiological characteristics of Severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery

Abstract: Severe Fever with Thrombocytopenia Syndrome (SFTS), caused by SFTS virus (SFTSV) in genus Phlebovirus of the family Bunyaviridae, is a newly discovered highly pathogenic infectious disease. SFTS is firstly discovered in China. In 2010, SFTS surveillance was conducted in all 31 provinces of Mainland China. Here we analyzed the surveillance data of SFTS between 2010 and 2016 in Mainland China to attain an in-depth understanding of SFTS epidemiological characteristics and trends.

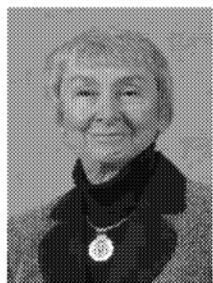
From 2010 to 2016, a total of 10917 SFTS cases, including 484 deaths, were reported in Mainland China with the average annual incidence rate of 0.12/lakh and case fatality rate of 4.4%. SFTS cases increased from 107 (2010) to 2949 (2016), but the annual fatality rate decreased from 14% (2010) to 2.5% (2016). SFTS cases distributed in 448 counties of 25 provinces. The top 7 provinces with SFTS cases were Henan, Shandong, Hubei, Anhui, Liaoning, Zhejiang, and Jiangsu, which accounted for more than 99% of the total cases. The period from April to October is the epidemic season. Reported cases were mainly clustered in age group of 40-79 years. Farmers were under the highest risk.

Among the total reported SFTS cases, suspected cases, laboratory confirmed cases and clinical diagnosis cases accounted for 24.5%, 50% and 25.4%, respectively. From 2011 to 2016, the proportion of laboratory confirmed SFTS cases changed little, but that of clinical diagnosis cases increased annually (from 9.1% in 2011 to 42.3% in 2016). However, the proportion of suspected cases showed a downward trend from 42.1% (2011) to 11.8% (2016). The average annual fatality rate of laboratory confirmed SFTS cases (6.4%) was higher than that of the other two categories of SFTS cases. However, the fatality rate of suspected cases (16.0%) in Shandong was very high, which should be paid more attention to.

Overall, the number of SFTS cases increased annually and the endemic areas expanded in China. Currently, no specific medicine and vaccine is available for SFTS treatment and prevention. It still remains a serious public health issue and more research on SFTS should be carried out.

Linda Saif

Academician, Ohio State University



Dr. Linda Saif is a Distinguished University Professor at The Ohio State University (OSU) in the Food Animal Health Research Program (CFAES, OARDC) and the Veterinary Preventive Medicine Department (CVM, OSU). She is a virologist and immunologist, whose research focuses on comparative aspects of enteric and respiratory viral infections (coronaviruses, rotaviruses and caliciviruses) of food animals and humans. Her lab studies mucosal immunity and vaccine development and is currently focusing on the impact of malnutrition and micronutrient deficiencies on vaccines and interactions of probiotics and the gut microbiota with the neonatal immune system, vaccines and viral pathogenesis. Her team's discovery of the gut-mammary secretory IgA axis (initial description of a common mucosal immune system) in swine was a breakthrough for development of maternal coronavirus vaccines to passively protect neonatal animals. Her lab identified new enteric viruses (group C rotavirus, caliciviruses), characterized their pathogenesis and developed novel cultivation methods, diagnostic assays and vaccines for them. Her current research emphasizes attenuated and novel bioengineered virus-like particle (VLP) vaccines and adjuvants (vitamin A, probiotics) to prevent viral diarrheas in humans and animals and their evaluation in germfree animal disease models. Her lab also investigates the interrelationships among animal viruses, especially coronaviruses, and their human counterparts to assess their zoonotic potential, mechanisms of interspecies transmission and potential vaccines. She also conducts research on foodborne viruses including noroviruses and sapoviruses.

Dr. Saif is a member of the U.S. National Academy of Sciences (2003) and the Argentine Academia Nacional de Agronomía y Veterinaria (2009). She is an elected Fellow of the American College of Veterinary Microbiologists (1990), the American Association for the Advancement of Science (1995), the American Academy of Microbiology (2004) and the National Academy of Inventors (2017). She was awarded an Honorary Doctorate from the University of Ghent, Belgium (2003). In 2015, she became the first woman to receive the Wolf Prize in Agriculture. She has served as a member of advisory teams for various US and international organizations (USAID, CDC, WHO, OIE, etc), she was a Fulbright Scholar (Argentina) and she serves on several journal editorial boards (Proc Nat Acad Sci, Ann Rev Animal Biosciences, Frontiers in Immunology, etc). Her laboratory serves as a WHO International Reference Lab for Animal Coronaviruses within the SARS Coronavirus Network and as an International Reference Lab for TGEV porcine coronavirus for the Office International des Epizooties (OIE), Paris, France. Dr. Saif holds 5 US/foreign patents and has authored or coauthored over 350 journal publications and 62 book chapters pertaining to her research. A detailed list of her publications is available on request.

Animal Coronaviruses: Global Threats to Humans and Animals

Abstract: The Severe Acute Respiratory Syndrome (SARS) coronavirus (beta CoV B) emerged in humans in China in 2002. A decade later the unrelated Middle East Respiratory Syndrome (MERS)

beta CoV C appeared, spreading to Korea in 2015, with patient fatality rates from 20-39%. The unexpected global emergence of SARS and MERS highlights the pandemic potential of these respiratory CoVs for humans. Although emergence of CoVs causing fatal pneumonia in adults stunned the medical community, veterinary scientists have long been aware of the potential of CoVs to cross species barriers, to emerge as new strains or mutants and to cause severe or fatal enteric and respiratory infections in animals. For example, a new swine alpha CoV, the porcine epidemic diarrhea virus (PEDV) evolved in the 1970's from unknown sources or recombination events, evoking fatal disease in naïve pig populations in Europe, then in Asia. It subsequently diminished in severity or became endemic as these populations acquired immunity. The impact of a recent (2013-14) epidemic of animal CoVs is illustrated by the devastating losses of millions of baby pigs in the US upon the sudden emergence of PEDV and a new porcine delta CoV in naïve swine.

The likelihood that SARS/MERS are zoonoses transmitted from animals is not unprecedented for CoVs based on documented interspecies transmission of animal CoVs and wildlife reservoirs for CoV. Bats are the projected host reservoir for these alpha and beta CoVs and considered to be the ancestral CoV for all mammalian CoVs. Subclinically infected bats may have directly transmitted PEDV to pigs and also transmitted beta CoVs to humans via spillover from intermediate hosts (civet cats) for SARS or resident hosts (camels) for MERS. In 1995 we reported that captive wild ruminants harbor CoVs antigenically like bovine beta CoV A and these and a human CoV experimentally infect calves. Bovine CoV naturally infects other mammalian species (ruminants, humans, dogs). Thus for unexplained reasons, these beta CoVs have broad host ranges. A large RNA genome, the occurrence of quasispecies and high recombination frequencies are important factors in CoV transmission and evolution. CoVs pose a concern that once they adapt and are sustained in a new host, they may establish a new CoV reservoir community, enabling emergence of new strains (intraspecies transmission) and making eradication of such CoVs unlikely. For instance, recombinants between the alpha CoVs, porcine transmissible gastroenteritis virus (TGEV), canine and feline CoVs represent host range variants of the same CoV species that continue to co-evolve within these host species. Alternatively, new animal CoVs with altered tissue tropisms and virulence may arise, likely from quasispecies within existing strains. The porcine respiratory CoV, a naturally occurring Spike (S) gene deletion mutant of TGEV, has an altered tissue tropism (respiratory) and virulence (milder disease) and has largely displaced enteric TGEV from swine herds.

The emergence of SARS and MERS CoV in humans underscores a need for research to address mechanisms and contributing factors for CoV emergence/re-emergence, interspecies transmission and disease pathogenesis, as well as control measures for respiratory CoVs. Comparative studies of animal CoVs have provided insights into some of these factors applicable to SARS and MERS, but many unanswered questions remain. They include the role of superspreaders, the enhanced disease in the elderly or persons with co-morbidities, the disappearance of SARS, the origin of MERS, etc. The SARS and MERS pandemics highlight a need to develop comprehensive multidisciplinary One Health strategies, that encompass veterinary and medical scientists, to address, understand and control emerging zoonotic diseases of the 21st century.

Chengfeng Qin

Professor, The Academy of Military Medical Sciences



Cheng-Feng Qin obtained his B.Sc. degree in Microbiology in Wuhan University, and Ph.D degree in Microbiology in Academy of Military Medical Sciences. His primary research interests focus on mosquito-borne flavivirus pathogenesis and vaccine development. Current ongoing projects include: 1) to identify and characterize viral virulence determinants and regulatory RNA elements; 2) to rationally design live- attenuated vaccine by reverse genetic technology; and 3) to improve vaccine stability and efficacy by using genetic and chemical methods.

Cheng-Feng Qin has been awarded as the Newton Advanced Fellowship from the UK Academy of Medical Science, UK, the Young Investigator Program of Vancine and Edward Jenner Vaccine Society, the National Excellent Young Scientist Program of NSFC, the joint Award of Institute Merieux and Chinese Society of Microbiology, and the ADVAC fellowship from Foundation Merieux.

He has published more than 80 peer-reviewed papers in Immunity, Lancet Infect Dis, eLife, Cell Stem Cell, Cell Host Microbes, PNAS, Nature Commun, Cell Res, J Virol, etc and held a dozen of national and PCT patents on vaccine candidate and diagnosis kits. He also serves as editor or editorial board member of several international journals including Scientific Reports, BMC Infectious Diseases, npj Vaccines, Virol Sin, etc.

Existing weapons against the emerging Zika virus

Abstract: The ongoing Zika virus (ZIKV) outbreaks in the Americas has raised global concerns, and no vaccine or treatment is currently available. During the past year, we have isolated virus strains imported from Venezuela and Samoa (Lancet Infect Dis, 2016; Sci China Life Sci, 2016), and developed the mice and non-human primate model of ZIKV infection (Cell Stem Cell, 2016; Cell Res, 2016; EBioMedicine, 2016). Using the existing platform, we have clearly shown that passive transfer of convalescent serum from recovered patient to pregnant mice can not only suppress ZIKV replication but also inhibit cell death and reduction of NPCs in infected fetal brains, thus preventing microcephaly (Cell Res, 2017). We also identified a panel of anti-ZIKV monoclonal antibody and compounds with high efficacy in vitro and in vivo (Immunity, 2017; Cell Host Microbe, 2017; Open Forum Infect Dis, 2016). These existing countermeasures and platform provide valuable information and resource to prevent and control the ZIKV crisis.

David Swayne

Director, USDA Southeast Poultry Research Laboratory



Dr. David E. Swayne is the Laboratory Director (1994-present) of U.S. Department of Agriculture's in house high biocontainment laboratory for poultry health research. He has a Doctorate of Veterinary Medicine (University of Missouri, 1984), a PhD in Veterinary Pathology (University of Georgia, 1987), and is a board certified specialist in Veterinary Pathology and as a Poultry Veterinarian. For past 30 years, his personal research has focused on pathobiology and control of avian influenza in poultry. Dr. Swayne has served on World Organization for Animal Health (OIE) committees to update the Avian Influenza chapters in Terrestrial Animal Health Code and Manual, and completed a 16 month sabbatical to study highly pathogenic avian influenza control programs. He currently serves as Chair of the Executive Committee for OFFLU, the joint OIE/FAO Animal Influenza Network. He has participated in missions or conferences on avian influenza control and biosafety/biosecurity in 44 countries during the past 20 years. He has published over 300 peer-reviewed papers on poultry health issues.

Avian Influenza at the Animal-Human Interface: Global Challenges for Scientific Contributions to Control

Abstract: Avian origin Influenza A viruses are ecologically, epidemiologically and genetically interlinked between different animal species and with humans, validating the need for the practice of One Health – One Medicine concept. OFFLU is the joint World Organization for Animal Health and Food and Agricultural Organization (OIE-FAO) global network of 60 leading scientist with expertise in animal influenzas in 26 countries. OFFLU aims to reduce negative impacts of avian influenza viruses by promoting effective collaboration between veterinary and public health experts. OFFLU puts a strong emphasis on the importance of analyzing and sharing information, and biological material to identify and reduce health threats early. Semiannually, OFFLU provides genetic and antigenic data and analysis to the WHO Vaccine Composition Meeting and has begun two new Technical activities: Avian Influenza Virus Characterization and Applied Epidemiology Technical Activities.

Since 1959, 42 epizootics of high pathogenicity avian influenza (HPAI) have occurred with 36 outbreaks using stamping-out programs exclusively, leading to rapid eradication, and five outbreaks having also used vaccination as a control tool. The majority of the recent outbreaks of H5N1 HPAI have occurred in Indonesia, Egypt, Vietnam, and Bangladesh, in decreasing order, where the virus is endemic in poultry populations and has resulted in human infections. Since 2014, large outbreaks have occurred in poultry in USA, Taiwan, South Korea and African, Middle Eastern and European Union countries. The majority of the Gs/GD HPAI cases were H5N1 but assortment of the virus has produced H5N2, H5N3 and H5N8 HPAI viruses of the 2.3.4.4 clade. Other outbreaks of H5 and H7 HPAI have been reported around the world, most recently in China, France, United Kingdom, Germany, Italy, Mexico and USA. Control leading to eradication has been achieved by stamping-out programs, but some countries have utilized vaccination as a management tool. However, vaccination alone will not lead to eradication. Vaccination can reduce poultry illness and death and reduce spread of the HPAIV.

Gong Cheng

Professor, Tsinghua University



Prof. Gong Cheng is a Principal Investigator at Tsinghua University School of Medicine. He received the B.Sc. of Microbiology from Shandong University in 2003 and Ph.D. of Microbiology from Fudan University in 2008. From 2008 to 2012, Dr. Cheng served as a Postdoctoral Associate at Dr. Erol Fikrig Lab of Yale University and Howard Hughes Medical Institute (HHMI). Dr. Cheng currently leads a research unit studying the pathogenesis and immune responses of flaviviral infections in both hosts and vectors. Dengue, Zika, Japanese encephalitis and West Nile viruses are areas of particular interest. Studies are directed at understanding the molecular basis of viral infection, virulence and transmission by animal and mosquito models. Dr. Cheng has made a series of progresses in pathogenesis and antiviral immunity of mosquito-borne virus infections. His team successfully identified multiple mosquito susceptibility factors to facilitate flavivirus infection and transmission by mosquitoes, and developed multiple immunization strategies in controlling the virus dissemination in nature (Cell, 2010; PLoS Pathogens, 2014a; Nature Microbiology, 2016a; Nature, 2017). Besides, Dr. Cheng elucidated the antiviral mechanisms against flavivirus replication in the mosquito vectors (PLoS Pathogens, 2014b; PLoS Pathogens, 2015; Trends in Parasitology, 2016). Recently, Dr. Cheng began to focus on the homeostasis of gut microbiota in mosquitoes (Nature Microbiology, 2016b; Nature Microbiology, 2017). Overall, Dr. Cheng's studies elucidated how both pathogens (Flavivirus) and commensal microbiome interact with the mosquito vectors. Hopefully, this will lead to new methods for preventing mosquito-borne diseases.

Non-structural Protein 1: A Key for Flavivirus Transfer from Host to Vector

Abstract: The arbovirus life cycle involves viral transfer between a vertebrate host and an arthropod vector, and acquisition virus from an infected mammalian host by a vector is an essential step in this process. Here, we report that Dengue virus (DENV) nonstructural protein-1 (NS1), which is abundantly secreted into the serum of an infected host, plays a critical role in DENV acquisition by mosquitoes. DENV utilizes NS1 proteins produced during its vertebrate phase to enhance its acquisition by vectors. Besides, we further reported that the antigenemia of NS1 determines Zika virus (ZIKV) infectivity and prevalence in its mosquito vector, which acquires ZIKV via a blood meal. Clinical ZIKV isolates from the most recent outbreak in the Americas have more robust NS1 antigenemia than the pre-epidemic Cambodian FSS13025 strain because of an alanine-to-valine amino acid substitution at the 188th residue in NS1. Further studies suggest that NS1-mediated enhancement of ZIKV infectivity augments the prevalence of ZIKV-carrying mosquitoes via a "mosquito-host-mosquito" transmission cycle. Our results reveal that ZIKV evolved to acquire a spontaneous mutation in its NS1 protein, resulting in increased antigenemia of the NS1 protein. Enhancement of NS1 antigenemia in infected hosts promotes ZIKV infectivity and prevalence in mosquitoes, which potentially contributed to the recent ZIKV epidemics.

Peijun Zhai

Division Director, China National Accreditation Service for Conformity Assessment



Mr. Zhai Peijun, Engineering Professor, Director of Accreditation Department Four, China National Accreditation Service for Conformity Assessment (CNAS). He graduated from Peking University and awarded the Master of Public Administration (MPA) degree. He has rich experiences in the fields of measurement, standardization and accreditation, and engaged in developing national accreditation system

since 1997 and participated in the drafting of more than 20 national standards and 10 international standards since 1999.

Now he is the convener of WG6 Medical Accreditation of International Laboratory Accreditation Cooperation (ILAC), the member of ISO/TC212/WG1 and ISO/TC276/WG2, the vice chairmen of SAC/TC136 and the biosafety professional committee of Chinese Society of Microbiology.

He has been awarded the honorary titles of "innovation prize of outstanding youth" issued by China central government, won the provincial prizes in the area of science and technology.

Brief and Status Quo on China Accreditation for Biosafety Laboratories

Biosafety is an important part of China's national strategic security. The protection level and testing capability of biosafety laboratories can not only ensure the safety of researchers, but also affect environmental safety and social safety.

The SARS epidemic in 2003 has not only brought health threats to a large number of medical workers, but also caused great losses to social and economic development and drew public attention to biosafety. To learn from this lesson, the State Council issued the *Regulation on the Biosafety Management of Pathogenic Microbe Labs* in 2004, which stipulated the construction, management and qualification granting of biosafety laboratories in the form of laws and regulations. The Regulation requires that P3 and P4 biosafety laboratories must be approved by the nation.

High-level biosafety laboratory accreditation is a mandatory and unique accreditation system in China. The accreditation shall be carried out in accordance with the national standard GB19489 and relevant laws and regulations. The accreditation procedures are formulated based on the international standard ISO/IEC 17011 "Conformity Assessment: General Requirements for Accreditation Authorities", and are in line with international requirements.

China National Accreditation Service for Conformity Assessment (CNAS) is the sole national accreditation authority established by the Certification and Accreditation Administration Department of the State Council in accordance with the relevant laws and regulations of our country. The CNAS is responsible for the accreditation of laboratories, inspection authorities and certification authorities in China. CNAS is a contracting organization and full-fledged member of the International

Laboratory Accreditation Cooperation (ILAC) and the Asia-Pacific Laboratory Accreditation Cooperation (APLAC), and is the sole representative of China for participating in international accreditation affairs. CNAS has signed the International Mutual Recognition Agreement (MRA) after accepting international peer review, which has laid a foundation for international recognition of inspection and testing reports issued by accredited laboratories in China.

Up to now, CNAS has granted accreditation to more than 8,000 laboratories and inspection authorities covering all important sectors of national economy, and made positive contributions to China's economic and social development. In terms of biosafety, accreditation has also played an important role in promoting the construction and management of biosafety laboratories in China.

Thomas Ksiazek

Professor, Galveston National Laboratory



Thomas Ksiazek, Ph.D., is the director of high containment laboratory operations for the Galveston National Laboratory at the University of Texas Medical Branch. In addition to his work for the Galveston National Laboratory, he is a professor in the departments of pathology and microbiology and immunology at the University of Texas Medical Branch. Dr. Ksiazek is also director of the National Biodefense Training Center and a world-renowned virus expert with 40 years of experience on the front lines

of some of the worst outbreaks the world has ever seen. Before coming to the medical branch, he was chief of the Special Pathogens Branch at the CDC in Atlanta where he coordinated outbreak and control responses to especially dangerous pathogens such as Ebola, Marburg and SARS. He was one of the discoverers of the SARS virus. Through the years, he has played a significant role in disease discovery and outbreak response efforts in Asia, Africa, South America and the Middle East. He has a bachelor's degree in biological sciences and a DVM from Kansas State University, a master's degree in virology from the University of Wisconsin, Madison, and a Ph.D. in epidemiology/virology from the University of California, Berkeley. He is the author of more than 350 research papers.

Biocontainment operations and maintenance and UTMB training for other containment facilities

Abstract: A brief account of BSL4 operations and maintenance at the GNL facility will be discussed. UTMBs role in training scientists and operations and maintenance personnel from other facilities will also be presented.

Regulatory issues affecting the operation of a functional high containment lab: Obtaining, shipping, maintaining and exchanging high hazard pathogens in today's regulatory environment. Does the science matter?

Abstract: The current security driven regulatory environment makes the day to day necessities of having pathogens available to do necessary work a daunting and increasingly expensive enterprise. In addition, institutional liability and intellectual property issues have made the exchange of necessary infectious materials a contentious and increasingly difficult process, even in the face of high priority need for applied science research in the face of epidemics or emerging diseases of high international concern.

Zhigao Bu

Director General/Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences



Zhigao Bu received his preliminary professional education (1980-1984) in domestic husbandry and veterinary, Jiangsu Polytechnic College of Agriculture and Forestry, China, MS (1991-1994) and PhD (1994-1997) degree education in veterinary pathology, Nanjing Agricultural University, China. He was a technician and teaching assistant in College of Veterinary Medicine, Nanjing Agricultural University, from 1984 to 1991; an assistant and associate professor in animal viral infectious diseases in HVRI, CAAS, from 1997 to 2000, a visit scholar in Department of Microbiology and Immunology, Emory University School of Medicine, USA, from 2000 to 2003.

Since 2003, as a professor and the team leader in HVRI, CAAS, he has been working on research and technology innovation for control and prevention of zoonosis and exotic animal infectious diseases, including bird flu, rabies, brucella, peste des petits ruminants, blue tongue disease, Raft valley fever, Japanese encephalitis, West Nile fever, Nipah disease, SARS and MERS, et al.. So far, he has published more than 90 research papers or reviews in international Peer-Review journals, got total 36 patterns authorized, eight safety certificates of genetic modified microbes approved for field application, one novel recombinant live virus vectored vaccine against H5 AIV/NDV and one cELISA diagnosis kit for brucella licenced and industrialized.

National High Containment Facilities for Animal Diseases Control and Prevention in Harbin, China

Abstract: China is the largest developing country with largest population citizen as well as largest population of livestock for most species in the world. Fast growing economy promotes extremely active international travelling and impels huge import of animal products in China. This country continually faces serious domestic and global challenges in veterinary and public health. The National High Containment Facilities for Animal Diseases Control and Prevention (NHCFA) had been constructed in the new campus of Harbin Veterinary Research Institute (HVRI) of Chinese Academy of Agricultural Science (CAAS) by the end of 2016. Facilities compose six-floor building (two floors underground), total space 20, 000 m². The high containment zoon constitutes five BSL-4 Labs, four ABSL-4 Labs, five BSL-3 Labs, four ABSL-3 Labs and one BSL-3 necropsy area, total 4500 m². These facilities meet the bio-safety standards to perform infection studies with different Risk Group 3 and Risk Group 4 pathogens, in different cells and different animals, including large farm animal (swine, sheep, cattle, horse, camel, etc.). In fact, this is only one ABSL-4 large farm animal infection facility in China. The accomplishment of NHCFA is a big break through to enhance the capability against highly dangerous animal infectious diseases and zoonosis for China and will benefit veterinary and public health of whole world.

Yunzhang Hu

Principle Investigator, Institute of Medical Biology, Chinese Academy of Medical Sciences



Yunzhang Hu, professor, the tutor of PhD and the head of the vaccinology department in Institute of Medical Biology, Chinese Academy of Medical Sciences /Peking Union Medical College. He is also the vice-director of Kunming National Primate Research Center of High-level Biosafety. Graduated from Yunnan University with master degree in

1989, he is mainly engaged in the Pathogenic Biology. His research Interests include development of novel vaccines and vaccine adjuvants, especially therapeutic vaccines for metabolic diseases, such as diabetes. So far he has been authorized more than 10 patents of invention, and published more than 70 papers.

Kunming National Primate Research Center of High-level Biosafety: Future Perspective

Abstract: During SARS epidemic in 2003, the Ministry of Science and Technology and the Ministry of Health set up three high-level biosafety laboratories as national strategic needs across the country that they were located in Wuhan, Harbin and Kunming. The Kunming National Primate Research Center of High-level Biosafety is located in Kunming, China. The project started in 2008, and the facility has been finished. As a national key project, it will become an important basic research platform for discovering, monitoring and controlling, preventing infectious diseases in China.

The scale of the construction of the center is 17,257 square meters, and a total investment is 286.65 million yuan. The center includes BSL-2, ABSL-3, ABSL-4 laboratory and drug and vaccine evaluation, the basic research area, animal quarantine and breeding areas of the three main functional areas, and the corresponding auxiliary facilities. The project mainly includes the following buildings: Administrative offices and canteens (Building 1), ABSL-3/4 lab (Building 2), Quarantine animal room (Building 3), Laboratory animal keeping room (Building 4), Center power station (Building 5), Boiler room (Building 6), Guard room and gate (Building 7), Living pool, fire pool and pump room (Building 8). In future, the center will strive to become a national vaccine research and development center for severe infectious diseases, national biological resources and information database for severe infectious diseases and leading biosecurity center for severe infectious disease vaccine research and development in China.

Zhiming Yuan

Principle Investigator, Wuhan Institute of Virology, CAS



Yuan Zhiming got his Ph.D. on microbiology and biotechnology at Sun Yat-sen University, and then trained and worked in France, Denmark, United States for several years. He was appointed as the President of Wuhan Branch, Chinese Academy of Science since 2012, the Deputy Director and Professor in Wuhan Institute of Virology, CAS since year 2000. He received the Outstanding Innovative Youth in Science and Technology award from the city of Wuhan, the Medal for Youth of May 4th for Hubei Province and the Distinguished Young Specialist in Hubei Province. As a principal investigator, his research group works

on the diagnosis and drug discovery of aborviruses, genomics, insecticidal proteins and their mode of action, genetically modification of entomopathogenic bacteria (*Bacillus* spp), as well as the production, standardization and application of bio-pesticide and other microbial agents. Since 2003, he was appointed the chairman of Institutional Biosafety Committee, member of National Laboratory Biosafety Committee, advisor of different national technical committees on biosafety management, general manager of National High-Level Biosafety Laboratory in Wuhan. In addition, he was elected as President of Hubei Society for Microbiology in 2008. Along providing expertise and consultative services to both private companies and government institutions on matters of biotechnology and biosafety, he has given many lectures to national and international audiences. He published more than 140 scientific papers on *Bacillus* spp and aborvirus during his career.

Biosafety and bioethics consideration for emerging disease control research

Due to the worldwide environmental changes and globalization, new and re-emerging diseases and man-made threats have been becoming a global challenge to the world health security. For protecting researchers from infection in laboratory and keeping pathogens from escaping into the environment, different levels of biosafety laboratories are needed for pathogens detection, diagnostics, interaction of pathogens and hosts, therapy method development for infected individuals and prevention of these infectious agents. Meamwihle, with the development of technology in the fields of the genomics, sythetic biology, reerve genetics, nanosciences and so on, the advances in life sciences and biotechnology bring benefits to medicine, public health and agriculture, it also arises the consideration of the potential risk to public safety and security from the misuse of these technology. In the last decades, the Chinese government strengthened the legislation procedure on biosafety management, enacted the laws, rules and standards on infectious material transportation biosafety management of laboratory approval process, design, construction, inspection, certification and operation at the central governmental and ministrial level and all of these law and rules will guarantee the biosafety for transfer of infectious materials, pathogens management and the function of laboratories in China. Besides, the Chinese govenment and some academies of sciences have set up National and Institutional Ethics Review Committees for the enforcement of scientific morality for infectious disease control research.

David R. Franz

Professor, Kansas State University



David R. Franz, D.V.M., Ph.D., holds an adjunct appointment as professor in the Department of Diagnostic Medicine and Pathobiology at the College of Veterinary Medicine, Kansas State University. His current focus and research relates to the role of international engagement in the life sciences as a component of national security policy. Dr. Franz holds a D.V.M. from Kansas State University and a Ph.D. in Physiology from Baylor College of Medicine. Dr. Franz served in the U.S. Army Medical Research and Materiel Command for 23 of 27 years on active duty and retired as Colonel. He served as Commander at the USAMRIID and as Deputy Commander of the Medical Research and Materiel Command. Dr. Franz is the recipient of numerous honors and awards. Dr. Franz was the Chief Inspector on three United Nations Special Commission biological warfare inspection missions to Iraq. He also served as a member of the first two U.S.-U.K. teams that visited Russia in support of the Trilateral Joint Statement on Biological Weapons and as a member of the Trilateral Experts' Committee for biological weapons negotiations. Dr. Franz was Technical Editor for the Textbook of Military Medicine on Medical Aspects of Chemical and Biological Warfare released in 1997. Dr. Franz has co-chaired, chaired or served as a member on over twenty National Academies of Sciences, Engineering, and Medicine committees. He is currently a member of the Committee on International Security and Arms Control and leads many other biosecurity and bioengagement efforts around the world.

Leadership, Responsibility and Progress

Abstract: Fifteen million humans die of communicable and contagious disease globally each year. The biotechnology revolution has brought us extremely powerful tools to prevent, diagnose and treat these diseases. At the same time, there are new concerns about the safety and even the security of our infectious disease laboratories. As concerned governments regulate this important work we must be careful to seek balance; regulation is necessary but not sufficient...and can be overdone. Enlightened leaders can make a difference that regulations cannot equal. Dr. Franz will consider the way ahead and underscore the importance of local leadership by global networks of responsible scientists to enhance safety and security of all our citizens while accelerating the progress of our research and productivity of the broader life sciences enterprise.

Donglai Wu

Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences



Donglai Wu received his BA (1978-1982) education in veterinary, Northeast Agriculture University, China, MS (1983-1985) degree education in preventive veterinary medicine, Graduate School of Chinese Academy of Agriculture Sciences, China and PhD (1993-1997) degree education in veterinary pathology, Gifu University, Japan. He was an assistant and associate professor in animal viral infectious diseases in HVRI, CAAS, from 1985 to 2003.

Since 2003, as a professor and the team leader in HVRI, CAAS, he has been working on research and technology innovation for control and prevention of zoonosis and exotic animal infectious diseases, including Blue Tongue, West Nile fever and SARS etc. So far, he has published more than 70 research papers in international Peer-Review journals, got total 12 patterns authorized.

Benjamin J. Rusek

Senior Program Officer, National Academy of Sciences



Benjamin Rusek, senior program officer for in the Policy and Global Affairs Division of the National Academies of Sciences, Engineering, and Medicine. He has supported successful collaborative work with Chinese counterparts for more than ten years, serving as the study director for the project that produced the NAS report *Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories* (2012). He has organized workshops in India, Pakistan, Brazil, and other countries, often focused on the life sciences. He was a member of the Executive Board of International Student/Young Pugwash and Chair of ISYP from 2008-2013. He previously held various positions at the Henry L. Stimson Center, the Arms Control Association, and the U.S. National Air and Space Museum. Ben has a B.A. in political science from Ohio State University and an M.A. in political science from Purdue University.

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Chinese and American experts to discuss new strategies for coping with infectious diseases

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- British Liberal Democratic Party said the election wi

The second session of the Sino-US Symposium on Emerging Infectious Diseases, Laboratory Safety and Global Health and Safety Challenges was opened in Wuhan on May 17th (Ma Fulong Zhang). China, the United States more than 100 experts and scholars focus on new outbreaks of infectious diseases prevention and control issues such as prevention and treatment.

The seminar was sponsored by the Chinese Academy of Sciences, the US Academy of Sciences, Wuhan Institute of Virology, Chinese Academy of Sciences, Wuhan Institute of Microbiology.

Yu Zhiming, a researcher at the Wuhan Institute of Virology, Chinese Academy of Sciences, said at the opening ceremony that with the acceleration of globalization, industrialization and modernization, environmental and climatic changes, various infectious diseases and various types of public health emergencies have taken place. In particular, a variety of new infectious diseases, including severe acute respiratory syndrome (SARS), new influenza, Ebola virus disease, the Middle East Respiratory Syndrome (MERS), card card virus disease, with its unique biological characteristics, poses a serious threat to human health.

Yuan Zhiming said that China hopes to take advantage of the advantages of Sino-US cooperation and joint research to better cope with the outbreak of new infectious diseases, to ensure laboratory safety and global Health and safety, for the two countries and even the cause of human health to contribute.

The Sino-US Symposium on Emerging Infectious Diseases, Laboratory Safety and Global Health Security Challenges is a series of academic conferences co-sponsored by China and the United States. The first session in 2015 was held in Beijing. (Finish)

(Editor: Liu Lili)

<http://www.hb.chinanews.com/news/2017/0518/280970.html?from=singlemessage&isappinstalled=0>

The establishment of experimental norms requires international joint efforts

2017-05-18 17:49:15 Source: China Science and Technology Network - Science and Technology Daily Author: Liu Zhiwei mortgage book to



Experimental specification

"There are some experiments that are not sure if the risk should be done because of the risk that is greater than the benefits." How should a consensus be reached on the identification and management of this work? The ethics of life scientists and What is ethical responsibility? "On May 17th, Professor Stanford University, David Kelman of the National Institute of Medicine, held the second Sino-US new infectious disease, laboratory safety and global Health and safety challenges at the seminar raised a global medical community concerns.

David shares the theme "Genome Engineering and Other Life Science Technology: Challenges and Opportunities". At the beginning of the sharing, David used a world map with arrows to show the path of new and non-new disease. And then introduced the life sciences based on the classification of the process.

David believes that the science and technology at the forefront of the 21st century have sufficient potential to improve the health of human beings, animals and plants and the environment of the earth. Although the vast majority of the results are beneficial, but a small part of the discovery will bring us the risk of misuse and injury. These misuse, some are accidental, benign, unaware, but some are intentional. There are some experiments that are uncertain if the risk is greater than the benefit. So how should this work be properly identified and managed? David believes that the best solution at the moment is to minimize the risk. First, the experimental process requires full transparency, and secondly, to establish a specification for reagent acquisition. Of course, this requires the joint efforts of individuals, professional organizations, national leaders and international organizations.

"The strength of the individual in the field of life sciences can compete with the large organizations that were twenty years ago because the threshold for entry into the life sciences is much lower and the process is more efficient and quick." David is delighted to share with local experts His point of view, "So, each individual contribution to the life sciences is growing, can not be underestimated.

It is reported that this meeting by the Chinese Academy of Sciences, the US Academy of Sciences, the Chinese Academy of Sciences, Wuhan Institute of Virology, Wuhan Institute of Microbiology co-host. Meeting focus on the new outbreak of infectious diseases epidemic prevention and control, laboratory safety and global health and other issues to discuss.

Editor: Sun Chao

http://www.stdaily.com/cxzg80/kebaojicui/2017-05/18/content_545019.shtml?from=singlemessage&isappinstalled=0#10006-weixin-1-52626-6b3bff01fdde4900130bc5a2751b6d1

The 2nd Sino-US Symposium on Emerging Infectious Diseases, Laboratory Safety and Global Health Security Challenges

Source: Published: 2017-05-23 [Font Size: De Zhong xiao]

Recently, sponsored by the Chinese Academy of Sciences, the US Academy of Sciences, Wuhan Institute of Virology, Chinese Academy of Sciences, Hubei Province and Wuhan Institute of Microbiology jointly hosted the second Sino-US new infectious diseases, laboratory safety and global health and safety challenges seminar (2nd China-US Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security) in Wuhan. From China, the United States, Pakistan, Kenya and other countries and regions, more than 100 experts and scholars.

The opening ceremony by the Wuhan virus researcher, Wuhan National Biosafety Laboratory Director Yuan Zhiming presided over. Wu Xinwen, director of the Wuhan Institute of Veterinary Medicine, gave a warm welcome to the experts and scholars who participated in the meeting and wish the conference a complete success. The Congress has specialized access to sexual function, gene editing, gene targeting and gene delivery, as well as other innovative biotechnology, coping with public health emergencies, new infectious diseases and global public health security, high-level biosecurity Laboratory: construction, commissioning and operation and maintenance, "and" biosecurity, biosecurity and bioethics "and other five major themes, a total of 23 thematic reports, focusing on new outbreaks of infectious diseases prevention and control issues such as prevention and treatment. American Academy of Sciences, Professor of Ohio State University Linda Saif, American Academy of Medical Sciences, Stanford University Professor David Relman, the United States Galveston National Laboratory Professor James LeDuc, Chinese Academy of Sciences Gao Fu and other invited experts to attend.

The Sino-US Symposium on Emerging Infectious Diseases, Laboratory Safety and Global Health Security Challenges is a series of academic conferences co-sponsored by China and the United States. It aims to bring together the outstanding scientific and technological achievements of China and the United States in relevant fields, to play the advantages of Sino-US cooperation and joint research, to better cope with the outbreak of new infectious diseases, to ensure laboratory safety and global health security. Country and even human health cause to contribute.

http://www.whiov.ac.cn/xwdt_105286/zhxw/201705/t20170523_4796207.html

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To: David Franz [davidrf Franz@gmail.com]
CC: Benjamin Rusek [BRusek@nas.edu]; Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
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From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Wednesday, May 31, 2017 4:16 PM
To: LeDuc, James W.; Dave Franz (davidrf Franz@gmail.com)
Cc: Lowenthal, Micah
Subject: First draft of the Wuhan meeting report
Attachments: BJR meeting summary from notes v2.docx

Hi Dave and Jim,

I have attached a long version of the first draft of a Wuhan workshop report. The text comes mostly from the notes I took during the meeting with some slides from presentations included for illustration. The document is definitely still in draft form but at this point it would greatly benefit from your editing and expertise, especially on the summaries of the more technical talks. I am also working on a shorter version that contains key points and will send that out to you tomorrow for review. I thought we might send the condensed version to CAS as the basis for the joint meeting report but I would be happy to do what you think is best.

Kind regards,

Benjamin J. Rusek
The U.S. National Academy of Sciences
1-202-334-3975

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19 2017, Wuhan, China

Meeting Report

During the welcome session the Chair of the meeting for the Chinese Academy of Sciences **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) thanked the assembled audience of about 100 experts and noted that the meeting would focus on the importance of good science and good policy for controlling emerging disease. Yuan said the meeting is a milestone for Sino U.S. cooperation on emerging infections, laboratory safety and global health and security and would lead to further cooperation. **Xinwen Chen** (Director General/ Principle Investigator, Wuhan Institute of Virology, CAS) said that the Wuhan Institute of Virology, a key sponsor of the workshop, and the operator of China's first BSL-4 high containment laboratory, aims to improve fundamental research in virology in China by doing research to combat emerging infections and outbreaks in China and around the world and to ensure global health security and safety in China. **Yaping Zhang** (Vice President/ Academician, Chinese Academy of Sciences) was not available due to a family emergency so **Qingquan Zhang** (Department of International Affairs, Chinese Academy of Sciences) gave short opening remarks on behalf of CAS. He extended congratulations to the assembled group on behalf of the CAS Bureau of International Co-cooperation (who provided some of the funding for this meeting) and said that science in China is booming but groups like CAS and NAS need to look back to see how well we have done in the past and so we can provide guidance and better advice in the future.

Linda Saif (Academician, Ohio State University) opened the meeting on behalf of the U.S. National Academy of Sciences. The institution has several thousand members and 460 foreign associates as affiliates and counts 200 noble prize winners among its members. NAS was established in 1863 to provide independent advice to government, gave examples including the Panama Canal and the launch of first sat, NAS's involvement in organizing the 1975 Asilomar Conference to establish degree of risk related to recombinant DNA research. Two types of reports, workshop and consensus reports with findings and commendations, with the majority requested by government agencies. More recently NAS published reports on Human Gene Editing research guidelines. She noted that NAS recently celebrated its 150th anniversary reorganized to form the National Academies of Science Engineering and Medicine, (NAS, NAM, NAE). She outlined the goals of the workshop as:

- 1) Establish communication and scientific relationships within the region
- 2) Exchange knowledge and best practices
- 3) Foster China-U.S. cooperation/collaboration

She explained that the workshop would help Chinese and American experts better respond to emerging infectious diseases, promote lab and global health biosecurity, and address impediments to cooperation/collaboration between the U.S. and China. She noted that CAS and NAS would create a public workshop report.

David Relman (Academician, Stanford University) greeted the group on behalf of the U.S. National Academy of Medicine president and foreign secretary. He described NAM as a 2000 member organization focusing on improving health and setting the agenda in medicine and health in the U.S. As the leader of the NAM Forum on Microbial Threats he focuses on why infectious diseases occur, the microbe/host environment, and the framework for emerging infectious disease. NAM is also interested in microbial Forensics, global health security and are promoting a global health risk framework. He sees three broad areas for further collaboration between the U.S. and China.

- 1) Emerging Infections, on understanding reservoirs, emergence, disease surveillance, natural versus human origin, data sharing, building capacity for research during public health emergencies
- 2) Anticipating Risk in life science and medicine, on the drivers of biotechnology innovation and on experiments that are too risky.
- 3) Governance of science to reduce risk on issues like Centralized versus distributed, costs, Learning from the past and diminishing risk: technical versus social

At the end of the introductions the audience was curious about how NAS and NAM reports are produced and the U.S. how to ensure that the government will take the advice given. Noted that it is important for groups like NAS and NAM to catalyze and convene. CAS does research, advises and convene, CAS is somewhat different than the NAS, CAS can learn from NAS on how to better provide good advice to the government on science.

James LeDuc (Professor, Galveston National Laboratory) then discussed the technical aspects of high-containment lab sustainability: challenges of maintaining a maximum containment laboratory. Le Duc noted that China is on the verge of opening three BSL-4 (P4) high containment laboratories and offered thoughts and advice from his perspective as the head of the University of Texas Medical Center Galveston National Laboratory (GNL). High containment labs are valuable resources they contain the best people and addressing the most difficult problems of global health. GNL is designed to handle all BSL-4 agents and has been in operation for about a decade. The lab cost 175 million USD to build, that works out to 185,000 USD per square foot. Significant ongoing expenses include utility costs, training and maintaining the large onsite security force. This equals about 11.5-15 million USD or about 7-9 % of the construction costs per year. Other key issues of concern are the proper management of laboratory accidents. Accidents are inevitable and it is important to take precaution. Labs should have a preexisting plan for many situations. This should include a communication strategy. Labs are a source of pride for the local community but when things go bad opinion can change. It is important to build up a bank account of good will by talking about important scientific contributions and how valuable research it is to global health and then be open and transparent if something goes wrong.

The audience asked how do you defend and secure large budget to run the lab year to year as the economy goes up and down? Le Duc said that as costs go up and political leadership changes it is important to maintain lines of communication between the lab and the

community and to politicians. In the U.S. it's not possible to guarantee the budget each year, it's a constant fight. The U.S. NIH helps offset the costs but it is not practical to recoup all of the maintenance money necessary from NIH alone, NIH just provides costs for operations of labs not initial construction, if their support stops then would be much more expensive to do research.

Session 1 : Gain of function research, gene editing, targeting and delivery and other novel biotechnology was chaired by **Yanyi Wang** (Deputy Director General/ Principle Investigator, Wuhan Institute of Virology, CAS). Participants discussed their thoughts on gain of function research, gene editing, targeting and delivery and other novel biotechnology and the recent advances in technology and their applications.

David Relman (Academician, Stanford University) spoke about genome engineering and other life sciences technologies: challenges and opportunities. He began by describing how to responding appropriately to emerging infections has not changed, what has changed is the kind of science that we do. Today scientists have profoundly more ability to study and manipulate life at the genetic level but collectively they have not spent sufficient amounts of time to stop and think about what these new science capabilities mean. He described several process based classification of life science technologies like manipulating gene sequences to make viruses. Most RNA viruses can be re synthesized in the lab so possession of a sequence allow you to make a virus, risks must include possessing the sequence.

He sees a growing power of the individual in the life sciences due to the growing ease of joining the enterprise. When considering risk it is important to think about the whole spectrum of motivators. Likely hood for harm goes from accidental, benign, unwitting, callous to deliberate. But the most likely cause of harm is an accident.

He asked the group if there are experiments that should not be undertaken because risks outweigh the benefits? Or because benefits will only be realized in the indefinite future? Due to experiments that improved the virulence of flu virus and genetic manipulation and the risks associated with gain of function research there is a very vigorous discussion about this in the U.S. right now. He suggested that scientists can start thinking about strategies for doing science to minimize risk, and can start factoring risk into decisions about research path. Need the leadership to come from scientists, and that can happen across international borders so that the entire scientific community is involved. Look to the 1975 Asilomar Conference on Recombinant DNA, scientists self-regaled and designed guidelines to ensure safe ways to work with recombinant DNA before an emerging area of research became a public problem.

The audience asked about the U.S. approval process for doing gain of function research or creating new virus and how experiments are assessed? Relman said that U.S. is in process of determining what to do about this. It's hard to know at what level to do it and he noted that awareness raising happening at the scientist level. The audience asked about engaging the public, how? He said it is also a challenge, in the U.S. we engage the elected representative of the public. In general most people are confused about the reasons for doing experiments like these we need to explain value of the work, as well as the risks. Audience member ask if there are U.S. law? Relman said not yet but that law and regulation cannot cover everything, can

control some research but any evaluation system will not be able to catch everything, especially a rogue actor. An audience member suggested that we can inspire more scientists to think about any risks before they undertake an experiment to address a scientific problem.

Zhihong Hu (Principle Investigator, Wuhan Institute of Virology, CAS) discussed the construction and rescue of a functional synthetic baculovirus as an example of the capabilities of modern synthetic biology. She noted the massive uptick in mentions of synthetic biology in scientific journals this century and the many advances in the field since polio virus was first synthesized in 2002. Her research focuses on Baculovirus co evolution with insect hosts with a very unique lifecycle. Research could be used as a bio control agent to control pest outbreaks. She noted that there is a low risk for synthesizing baculovirus because the virus has a large flexible genome that is easy to manipulate where researcher can delete genes without risk. She concluded with a discussion on how to regulate synthetic biology and if the scientific community should. The audience asked about reproducibility, she said a very skilled student can synthesize baculovirus in one month, others in two months. An audience member asked her to predict when Zika virus would be synthesized. She said any flavivirus lab could do it. Another member of the audience asked if having the original virus made the process easier? She said yes it is hard to do from a database sequence and more difficult without original virus. An audience member asked about safety concerns noting that in the U.S. the NIH publishes regulations on modified genetic organisms. Certain labs can only possess a percentage of the genome, 30% for small pox.

Wensheng Wei (Professor, Peking University) spoke about high-throughput functional genomics: coding, non-coding and beyond. He focused on gene editing tools and gain of function research in Chinese life science. Gene editing has lots of applications for drug target identification. He uses gene editing systems, like CRISPR to address bacteria antibiotic resistance, a large problem in China. His research focuses on *Clostridium difficile* bacteria that is more resistant to antibiotics and how synthetic and natural systems for gene editing can be turned into high throughput strategy to produce better antibiotics. He is also working to produce Zika virus antivirals and is developing high throughput methods to identify non coding elements on the chromosome to get a better tool to study the whole genome. New gene editing tools are useful for addressing drug resistance but techniques still need to get through clinical trials. An audience member asked if he had found any new roles or links for RNA in the infectious disease process. Said not yet but that this is a promising area.

Session 2: Public health response to outbreaks and issues. The session chair **James Le Duc** (Professor, Galveston National Laboratory) noted that the panelists would present three technical talks on about collaborating on research concerning dengue, Zika, Ebola and influenza, including avian influenza and host-pathogen interaction (pathogenesis). **Xia Jin** (Principle Investigator, Institute Pasteur of Shanghai, CAS) spoke about dengue immune sera enhance Zika virus infection in human peripheral blood monocytes. He noted that dengue antibodies enhance Zika infection and explained how, and noted how this is being considered as researchers work to produce a Zika vaccine. Audience members asked if dengue would enhance infection in infants and toddlers and he noted that a baby born of a dengue infected mother will have more severe infection. Noted that there is no epidemiology data now that overlays dengue and Zika infections showing severe Zika in populations with dengue. He also

noted that Zika vaccine would come soon and that the Zika vaccine much easier than a dengue vaccine. **Rui Gong** (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about engineered human antibody constant domain as candidate against Ebola virus. Said that he did post doc at Frederick Maryland at USAMRIID. He discussed techniques for using therapeutic antibodies as tools for control of viral infection. And updated the group on ZMapp and other current neutralizing antibodies against Ebola. He explained where next steps in the process including animal study, and evaluation of the “drugability” of the 7c2. **Peiyong Shi** (Professor, University of Texas) discussed antiviral drug discovery and development. He noted his diverse background in science, public health and administration and more recent work on antiviral drug discovery. His presentation outlined antiviral drug discovery strategy to target viral protein, host protein, stimulate immune system, targeting molecular pathways, and two approaches, target based approach and cell based approach. An audience member asked if he knows why the ____ virus clears in 24 hours? Said he was not sure yet and that we need more experiments. Another audience member said that in clinical use, the prompt for initiating treatment would likely be a sign, like fever, how do you envision timing of use in humans? He noted that when patient reports to clinic viremia already starts to drop. Right now therapy. In dengue, maybe prophylactic. An audience member asked if the virus will clear faster if you increase the dose? He said that the hope is to get the immune system to kick in to mitigate the disease. The session chair asked about the location of his collaborators. He said they are all over the world and including folks in Brazil since that is Zika ground zero, they can report progress in real time to Brazilian government to promote transparency.

James Le Duc (Professor, Galveston National Laboratory) the chair of the session then discussed improving the BSL-4 / P4 laboratory’s role in emergency health response and the importance of communications during a crisis. He changed the focus from technical talks to issues involved in containment labs to talk about communication issues relevant to BSL-4 labs. He noted that GNL has 6 hospital type rooms to treat infected patients while in containment. GNL is one of nine regional facilities that can treat Ebola in the U.S. He asked a broad question at the beginning of the talk, at what level and for how long should we screen people after exposure? Ebola can live in the body for months after recovery. It’s important to take precaution but size the precaution to the risk. Focus should be on laboratories providing transparent, accurate and timely diagnostics of patients during an outbreak or exposure. When the community is not informed the situation tends to get out of hand. Valuable to say what is or is not an issue in advance. Much can be done to manage the perception of risk in advance of high profile situations. Proper education should happen early. Use the right people to do this, Thomas Ksiazek has experience responding to outbreaks going back to 1977. Wave two is addressing the public during the crisis. During a situation leaders should know the facts and have something to say and convey it clearly. We learned a lot about communication dealing with the Ebola case in Dallas, TX. Important to have clear leadership and manage the politicians. In the Dallas case then governor Rick Perry created a taskforce that brought everyone together. Later other problems had to be solved. The patient generated a huge amount of medical waste, eight 55 gallon drums of waste every day. The state of Texas used trucked the waste to UTMB and we disposed of it. Other issues include

cleaning secondary facilities and dealing with pets. An outbreak can be a time when you demonstrate the value of your facility to your country, be prepared to help, plan a communication strategy, use a trusted spokesperson and stay on message. Anticipate and welcome involvement of political leaders. Be prepared to provide definitive diagnostics. Train lab and clinical staff on PPE and patient management before the need arises and don't forget waste management.

During the question and answer session a Chinese participant asked GNL's "official" responsibilities during a crisis about problems delegating authority when making official statements. Was it because lab is national lab? Le Duc said that he did not have the responsibility to speak on behalf of the nation did not get paid extra for any of this, it is part of our duty, to the community, state and nation. Had to reprioritize some of our basic research, like vaccine development. That said, extra investment paid off in the good will and support that we received and good statements help preserve the prestige of lab. He also said that the community was very supportive because GNL spends a lot of time communicating and maintaining a dialogue with local leaders, for example GNL did a 20 year economic forecast, noting that GNL generates more than 1 billion for the community. An audience member noted that China was also prepared to respond to Ebola. Government leaders across agencies and ministries had many meetings but the response would have been organized by the Ministry of Health and Family Planning if there was an Ebola case in China. An audience member asked for more details about how to treat clinical medical waste. Le Duc explained that the waste was initially treated with chemicals and not autoclave because Dallas did not have a large enough facility. Others noted that China does not have large a capacity to autoclave clinical waste and needs to come up with a strategy and that in china emergency response is organized by Chinese CDC. Le Duc noted that GNL played a supporting role, U.S. CDC had primary responsibility for the national response but because the case happened in the state of Texas GNL naturally had a larger role. A Chinese participant noted that the system is different than in China but noted that if anything happens in Wuhan, then first sample would go to Hubei province CDC first.

The first day ended with a round Table Discussion chaired by **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) and **James Le Duc** (Professor, Galveston National Laboratory). The chairs reviewed the discussion from day one. Yuan noted that excellent science is going forward in China and the United States but it is raising some policy issues at the national and international level. How do we work together to create regulations to that will not hinder the good science going on? He sees many opportunities for collaboration and international exchange. How do we educate students on technical issues but help them understand the context of global challenges going forward. He noted the BSL-4 labs about to open in China and asked about to best share virus stocks, reagents and tools necessary to do the critical scientific work the labs were designed to do?

First Yuan noted that the day one presentations combating emerging diseases control, this topics is a good basis for our future communication and collaboration, the U.S and China should find a common interest in this area. Second he noted that NAS and NAM and CAS,

while different organizations, have the same objectives. Promote science for development of world. Our communities have different ways to approach crisis, China should do a better job explaining our system and what happens when there is a problem in china. We have lots of process and but we can learn a lot from the American side on understanding effective crisis management. Third he is concerned about how scientists can manage advances of new technology. Scientists have mostly used modern technology and science to do good work but today some research poses risks that should be acknowledged. How do we prevent accidents or misuse while paying attention to the real benefits of the research but understand the risks. Fourth he noted that scientists have a duty to help the public understand the value of their work and demystify their research.

An audience member agreed with the theme of his summary, and said that the problem of controlling emerging infections is an interesting problem that we share. In important factor is how do scientists better understand natural disease reservoirs and how do we interpret sequence data from nature? Today it is easy to generate sequence but it remains hard to understand what it means. What other kinds of information do we need to collect? We should also think about the kinds of experiments that warrant further discussion or review, get ahead of this before outsiders challenge the rational to do the science.

A Chinese participant said that we know that bats and birds host potential pathogens and that the scientific research community is working across China to map reservoirs. We have done four over three years and generated a lot of much sequence information but we don't understand why disease emerge when they do, more collaboration on reservoirs is needed. There is a lot China can learn from the GNL, but not just scientifically, transparency and trust is important, we want the world to understand what we are doing. P4 labs are huge investments, they should be collaborating. It would be good to see institutional level collaboration between NIV and GNL we could have the CAS spend money to help support the collaboration. CAS has several mechanisms to support international engagement and collaboration including finding international exchanges and fellowships of people from abroad to come to china. Scientists in China can propose international projects to CAS and CAS can fund, also on the ecology and evolution of infectious disease, CAS is working with the U.S. NSF and NIH, the program manager will visit NIV next month. We can use all these resources.

Another Chinese participant said that the group should be most interested in pathogenic viruses and should focus on significant viral threats to human health. China CDC is working to discover unknown pathogens. The U.S. and China should really share experience on emergency response scientists will have to work with the policy makers to prepare for an emergency, what would happen if the truck with the Ebola waste were to have an accident for example? Maybe a joint report on this would be appropriate.

A Chinese participant noted that sharing viruses even domestically is difficult and asked how we can overcome this? Have created a consortium to share samples in China, this is hard to do international, but we were able to import Zika for study and also have our own strands for

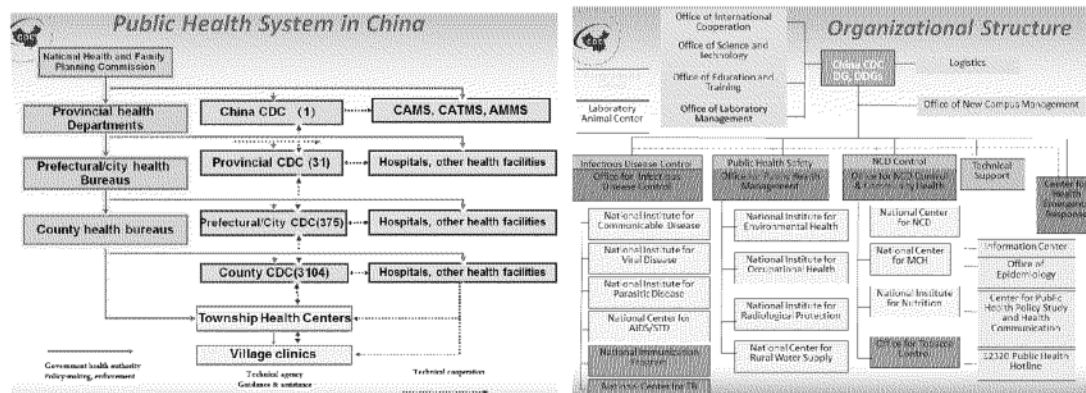
export. Lots of issues at the policy level, for example shipping is a big problem especially live virus, but there are techniques to ship part of the virus. More science can be done to overcome the policy problems. An American participant noted that the group is focused on pub health and science but should remember to engage vets and the agriculture production sector, there is a close relationship, consider One Health. Like flu we can expand this collaboration.

Yuan said that tomorrow the group would hear more about China's high level bio safety facilities and discussions about biosafety, regulation and management in China and in the U.S. These topics can also be the basis for future collaboration. To better accommodate collaboration we should come up with the right kind of linkage between our groups. After the meeting we should identify priority considerations and write remarks to our presidents about what our two academies can do together, two academies provide channel and bridge for future.

Day 2

Session 3: Emerging infectious diseases and global health security. The chair, **Pei-yong Shi** (Professor, University of Texas, GNL) noted that the session would cover anti-viral countermeasures (strategy and R&D) and improving the high containment laboratory's role in emergency health response.

George Gao (Academician, Institute of Microbiology, CAS) discussed biosafety, biorisk, and biosecurity pathogens and human behavior.



He has a lot of experience responding to natural outbreaks, including playing a leading role in China's response to the 2014 Ebola outbreak but less experience addressing deliberate outbreaks. He stated that the meeting was important because more U.S. Chinese collaboration can help prevent misuse. He attempted to answer the question, why do we have so many new viruses and periodic outbreaks? Noted that today the world is more interconnected, globalization creates interdependence. Much happened because of human behavior. Used talked about the H7N9 outbreak from 2013 and the difference between low pathogenic and highly pathogenic avian influenza. He said he does not know what the will be the next HxNy flu virus that causes significant loss of human life. Flu continues to evolve and is very

complex, New flu strains circulate and evolves in live poultry markets. China is a place where the mixing occurs. What is the solution, close the markets? (noted the Science article on this from 2014). He said Ebola, Nipa, and Mers, virus also spill over from natural reservoir to humans. Mers is especially troublesome, corona virus recombination is common but coronavirus is common. Will Mers be like flu? It is a constant struggle to control against virus evolution and adaption into new hosts. Looking at how virus adapt to new hosts is a key area where we can cooperate. We can exchange methods for studying adaptation and work with the international community. He has advocated for younger people to address emerging communicable disease especially in Africa and noted that Chinses CDC is thinking more internationally with aid and financial support. He helped establish the Sierra Leone China friendship biological safety association.

He said that the U.S. and China should have a real discussion on how to work together to consider gain of function and lose of function research, it is not in either of our countries interest to create a disastrous viruses. Said that going forward transparency is critical, make sure that the public knows what you are doing. Gao also discussed the disease surveillance context of the announced Chinese government belt and road initiative, the Chinese effort to create an economic belt through the historic silk road region of central Asia.

An audience member working on Mers found a very high Mers presence in camels in Pakistan we also found samples in humans, but did not find any cases? Do you know why? Gao was not sure, maybe mutation? Said maybe that the virus population in Pakistan has low pathogenicity? An American participant said that he has not see the Ebola outbreak virus take on traits during the 2014 outbreak that made it worse. Gao said that yes no evidence and that lab work does not show mutations but we are still doing sequencing. An audience member asked if Gao was trying to say that bats carry Mers like virus and what is the real ancestor of Mers, bats or camels? Also asked if we are likely to see a flu like Mers virus in the future. Gao said that camels are just intermediate hosts and that he thinks that Mers will evolve to be flu like in the future.

Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University) spoke about the Chinese One Health strategy for responding to emerging infectious diseases (EIDs). One Health strategy that considers all related contact between human and animal an effective way to combating EIDs. Many are actively working on One Health in Guangdong province and he describes several studies he was involved with. He explaining that One Health is a useful strategy in Guangdong. Because of the emphasis on freshness in Cantonese food animals are kept alive until right before they are consumed, this makes Guangdong province, and especially the live animal markets a hotbed of disease outbreaks. 70% of Emerging Infectious Diseases are vector borne disease and zoonotic diseases, Guangdong is vulnerable to EIDs due to its location, culture and high population. The first SARS outbreak was in Guangdong. Infected bats came into contact with bats and civet cats and then the virus evolved and jumped to humans. Another reemerging infectious disease of concern is brucellosis, it is associated with imported number of sheep contacts with humans. Also detailed the five waves of H7N9 outbreak in China. Live poultry markets were key to spread, 95% of cases

were exposed to live poultry. He noted a recent novel mutation (in March 2017) that showed a high pathogenicity avian flu. China has examined the impact of closing the live poultry markets to curb future outbreaks but that this would upset the traders. Cited an article that details the EIDs response in China and the need for a One Health approach in future responses. In ONE Health journal. (get this). An audience member said that people in Guangdong eat everything so you have a unique problem. Controlling live poultry sales is a difficult problem. Jiahui said yes it is challenging because of the food culture in Guangdong, flu is endemic in chickens and control is difficult. Noted a dengue outbreak in 2014 with no vaccine. An American participant noted low path to high path H7N9? Said that it was bad for chickens but good for public health. Jiahui said that lots of chickens from China end up in Guangdong animals are in close contact. As virus becomes virulent in birds more birds die and effects the economics of the bird markets.

Zhengli Shi (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about the evolution and pathogenesis of bat SARS like coronavirus. Shi is working on corona virus and other emerging infections and said that bat SARS like corona virus could be the next pandemic. He described the cases and countries involved in the 2003 outbreak. For bat corona virus to cause the next SARS like outbreak many factors will have to involved. To do examine this he is looking at the pathogenesis of SL CoV in transgenic mice. Found that it replicates very well in mice and human tissue. Can easily enter human cells but in the animal model the virus has less pathogenesis, this is good news. His research shows that some bat SL CoV have potential interspecies transmission to other animals and humans. An audience member asked if you could you clean the bat population of this virus? Zhengli said that he tried this with nipa virus in bats but bats could produce antibodies, clear within seven days. In nature we found that bats produce antibodies to some viruses but not all. SL CoV can exist in bats for several months. An audience member said that you cannot be sure that this pathogen can cause human disease. We need more data. Infections in very mild. No one had clinical syndrome. Impact is very mild. Still need to test if they are pathogenic or not.

Mifang Liang (Principle Investigator, National Institute for Viral Disease Control and Prevention) discussed the epidemiological characteristics of severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery to current knowledge. of SFTS in China recently emerged, discovered in 2009 and 2010.

Emergency of SFTS in China, 2009-2010



She said that SFTS is a new emerging infection and it has been very hard to find the virus in

nature. Only recently added to the ictv catalog. In the catalogue it is described as a highly pathogenic phlebovirus in the family bunyaviridae. It is now listed by the WHO as a concerned special pathogen. She recently mapped the genome structure of virus. Determined that it is transmitted by ticks and person to person. The number of cases are increasing every year but the case fatality rate is decreasing every year. Most patients are from the country side about 86% are farmers over 10,000 cases in 25 provinces were reported since the first discovery of SFTSV. Peak time for exposure and infection is May to Aug due to weather. Ticks may act major vector for SFTSV transmission and domestic animals were widely infected by SFTSV, but as we don't know as reservoirs or hosts. Person to person transmission of SFTSV through directly contact patient blood containing high virus load. An audience member asked how do people become infected? Mifang said that is unknown, so far only local endemic investigations and we have isolated virus from ticks. Did not do experiment to find out how humans have become infected. Not sure how they get it. Most don't have tick bites or have been around recently slaughtered animal. In the future we will do experiments to determine how humans get the virus.

Linda Saif (Academician, Ohio State University) talked about animal coronaviruses as a global threat to humans and animals. Corona viruses continue to evolve and emerge globally as a cause of fatal respiratory and enteric infections of young animals and humans Saif's talk covered SARs and Mers corona virus. She explained the basic morphology of the virus and the diversity of avian and mammalian CoVs. Corona viruses are genetically diverse due to frequent mutation and recombination. The viruses are transmitted from wild ruminant to cattle to humans. Described the process of how BCoV MERS CoV and SARS CoV infect their hosts and if MERs infects camels and humans and vis versa. Discovered that the elderly on statins are more susceptible to Noro virus and to MERS and SARS. She is concerned that SARS will reemerge from an animal reservoir and cause another pandemic. It is important to determine how MERS CoVs is transmitted so the scientific community can better target the virus. Right now the strategy is to manage and reduce contact with infected camels or camel products but there are many unresolved questions. The epidemiology of MERS CoV infections in camels and its zoonotic transmission is poorly understood, but it resembles respiratory coronavirus infections in cattle. No vaccines have been licensed for respiratory CoV infections.

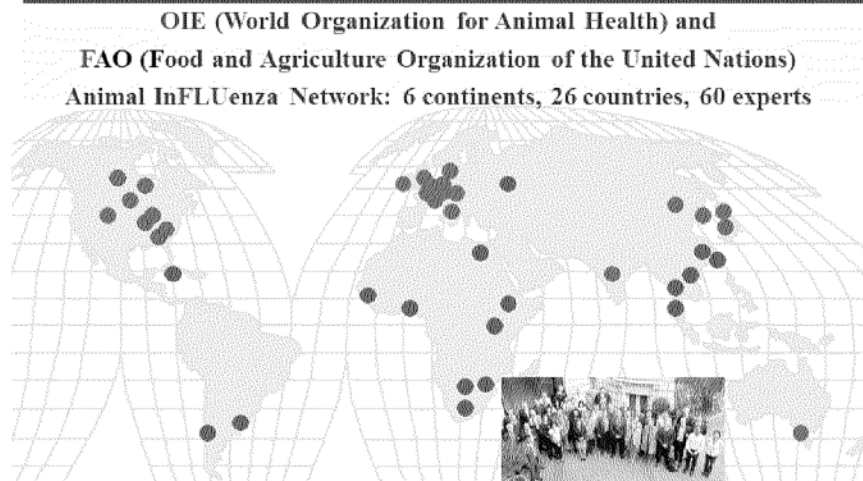
An audience member asked about the closest relative to MERs? Saif said a swine virus from Hong Kong, in cat, also sparrows and other bird strains. An audience member said that they were trying to determine if all corona viruses originated from bats. Where is swine corona virus from? Saif said we don't know, pevd (?) died out in Europe. Theory is that it was not completely swine adapted. A Chinese participant said that if SARS is gone why should the government keep doing SARs research? What is your suggestion on how to prepare for another attack of SARs. Saif said that labs should keep all reagents available as the reservoir is still there. We still see many spillover events, only when virus acquires ability to go from human to human will it be bad. Don't know when another strain of the virus will gain the ability to do this. It is important to stay vigilant. An audience member asked about farmed civet cats relationship to spread? Laif said there is evidence of interspecies transmission between civets and bats and that this is another argument to close live animal markets, if we get rid of civets in live animal markets we could be able to stop transmission. An audience member supported this and said that Chinese data supports transmission between bats and civets in a farmed environment but some studies say no SARs CoV in farmed civets.

Chengfeng Qin (Professor, the Academy of Military Medical Sciences) described existing

weapons against the emerging Zika virus. Chengfeng discussed the discovery and spread of Zika from Africa to more recent epidemics and detailed isolating the Chinese Zika virus strain. He published a paper in January 2016 about Zika in China and is working with Pei-yong and George Gao to do the work. He noted that there is currently no case of Zika infection reported in mainland China but there are examples of several imported cases. Looking for further collaboration and communication on Zika with American researchers. Audience members noted that much of the population of Brazil might have dengue already and asked about the relationship between dengue and Zika. How do the antibodies interact?

David Swayne (Director, USDA Southeast Poultry Research Laboratory) discussed *Avian Influenza at the Animal-Human Interface: Global Challenges for Scientific Contributions to Control* Talked about the OFFLU animal flu expertise network and the importance of combating the influenza virus at the animal human interface and then discussed specific cases. Swayne works to combat animal flu issues and also implements the One Health concept to prevent animal health issues from becoming human health problems. He said that animal flu continues to be a threat to humans 453 recorded deaths just this year. We are seeing a lot of H3N2 infections at agricultural fairs in the U.S. 534 H7N9 deaths in china this year. We don't know what will cause the next pandemic. OFFLU works with WHO and OIE to track and prepare, they help WHO do vaccine work by providing information seasonal and pre-pandemic animal flu strains.

1. OFFLU Network of Animal Influenza Experts



He described several avian influenza vaccines strategies. Lots of different seed strains. Purpose of the OFFLU is to help analyze data to make the decision on what to produce and when. An audience member asked about reasons for changes to the strains over time, asked if he attributed changes to vaccination or natural drift over time? Swayne did not have a reason for the changes, we see changes in the same countries that are doing vaccinations. Before vaccinations changes were random, now they are different.

Gong Cheng (Professor, Qinghua University) presented his research on non-structural protein 1: a key for flavivirus transfer from host to vector. The discussion centered around flavivirus and dengue and the dengue virus transmission process. Looking at transmission of

dengue from human to mosquito, and if factors in human blood affect transmission. **Peiyong Shi** (Professor, University of Texas) discussed the rapid response to Zika virus emergence including diagnostics and the state of vaccine development. Talked about devastating aspects of Zika, microcephaly. Virus can persist male sexual reproductive tract well after symptoms clear. 80% of individuals are asymptomatic. There are two ways to diagnose Zika right now, detect virus or detect antibodies. Better way would be to produce assay for Zika detection in patients. Also said that there are two Zika vaccines in phase 1 trials and discussed the best platform manufacture inactivated Zika vaccine and described experiments to test vaccines. One of the vaccines has been proven to protect monkeys from Zika infection but more work is needed.

Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment was chaired by **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS). Presenters during the session discussed high containment labs in China and the U.S, community relations and public communication, biocontainment labs and the importance of clinical facilities, biocontainment maintenance and operations, outbreak response and the importance of reference collections and reagents.

Peijun Zhai (Division Director, China National Accreditation Service for Conformity Assessment) Discussed the process of accrediting biological safety labs in China. He first detailed China National Accreditation Service (CNAS) the authorized accreditation body in China. CNAS has more than 1000 members and 4000 technical experts on call with 260 technical staff. CNAS is largest accreditation body in the world. The SARS outbreak provided the impetus for biosafety lab accreditation in China. He listed the laws and regulations and standards related to biosafety and for biosafety labs in China and described the accreditation process for biosafety labs. Accreditation schemes for labs for biosafety and laboratories start with the Chinese code for laboratories – General Requirements for Biosafety GB 19489¹. Currently 71 biosafety labs of various types are accredited by CNAS in China. The objective is to ensure biosafety of all labs. Article 20 of national accreditation says that lab at the BSL-3 BSL-4 level shall gain national accreditation in China, so accreditation to operate at this level is mandatory.



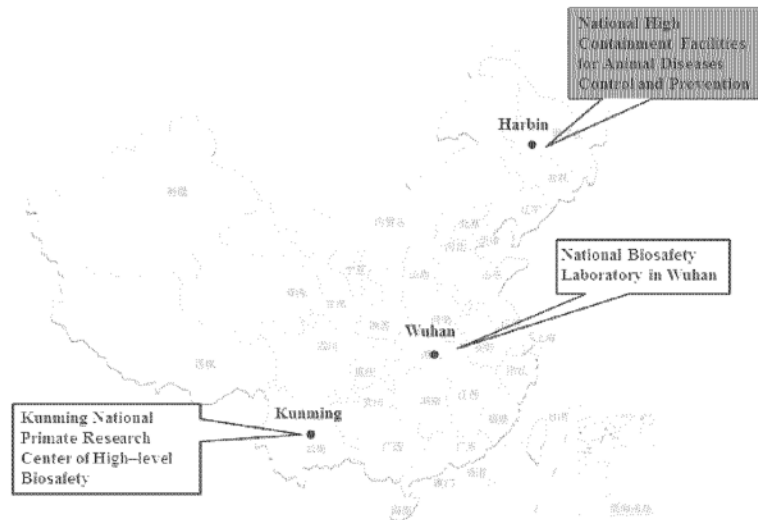
An audience member asked, when you accredit for 5 years, do you do unannounced

¹ <http://www.codeofchina.com/standard/GB19489-2008.html>

inspections during that period? Peijun said that during the interval from assessment to reassessment CNAS does surveillance at the facility on a regular basis during the period. Usually first inspection takes place in after 1-1.5 years and then every six months or so. Also discussed the difference between certification and accreditation.

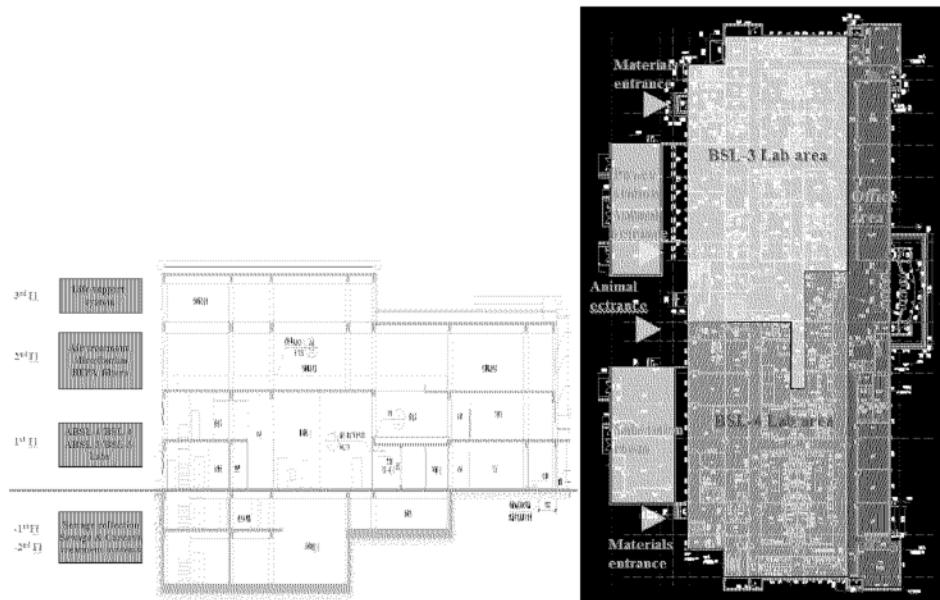
Thomas Ksiazek (Professor, Galveston National Laboratory) talked about biocontainment operations and maintenance and UTMB GNL and training personal at other containment facilities. Ksiazek discussed biocontainment operation and maintenance at the GNL, noting that a lot goes on behind the scenes. The cornerstone is compliance with the current version of the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) guidelines, the select agent law adds additional requirements and yearly inspections. Key concerns of BSL-4 lab operations are reoccurring expenses, like security costs, utility payment and training. GNL is unique in that it is operated by a university (the Boston University National Emerging Infectious Diseases Laboratory is not open yet). Described the unique safety, maintenance and information technology operations at the lab. GNL works with operators and researchers from many other countries, it had maintained a worldwide biosafety training center, but fund for the center has recently dried up and directors are working on options to reconstitute the program. Still have some interaction with Chinese institutes like NIV. An audience member ask how long before person can operate in the high containment space unsupervised? Ksiazek said it takes about 100 hours but it depends a lot on the individual. An audience member asked how should areas with limited resources, like in Africa, undertake this research. Ksiazek said don't set up a BSL-4 in that kind of environment set up a BSL-3 and use additional personal protective equipment (PPE). An audience member asked about GNLs precautions against flooding and severe weather and their waste management procedures and record back up? Ksiazek said that Hurricane Ike did inundate Galveston Island but that the building was not affected, GNL had power and acted as a life boat for campus. Waste stream is done as standard disposal for these facilities. Also GNL incinerates solid waste and everything is autoclaved. GNL has a reference center with emergency backup power and he is reasonably sure that the viruses would survive a problem. Some labs are in rural areas some are in population centers. High containment facilities have shown that they can operate safely in population areas.

Zhigao Bu (Director General/Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences) discussed the design, construction and operation of Chinese national high containment facilities for animal diseases control and prevention. Zhigao said that Harbin Veterinary Research Institute is the most active institute for animal disease control in China. It is important to have such a facility because China has a significant amount of the worlds livestock (50%, 800m of the worlds pigs for example), lots of agricultural challenges in China. SARs was a huge shock. After the outbreak In 2004 China launched plan to build 3 BSL-4 labs in Harbin, Kunming and Wuhan. Harbin for animal disease control and prevention, the National Virology Lab in Wuhan, the national primate research center in Kunming.



He said that when we started we had no idea how to construct BSL-4 lab buildings and facilities we formed lots of partnerships. Worked closely with Australian animal lab, with labs in Japan and Canada, Ames Iowa and Kansas State University in the U.S., Hamburg and Reims in Germany and the lab in Lyon, France. Showed pictures of the construction HCFAD.





Construction was completed in 2016. The lab is composed of 5 floors with two underground. The Lab has 9 function areas for BSL-4 and 10 for BSL-3. Discussed security measure for the facility, including access and monitoring of personal. Hope to have CNAS certification by the end of this year.

An audience member asked which pathogens do you anticipate studying at in the BSL-4 portion of the lab? Zhigao said that is currently difficult to answer, interested in many pathogens, but need to get approved for each by Ministry of Health, it can be difficult to get approved. We work with many pathogens at the BSL-3 portion of the lab right now, Brucella, flavivirus, SARs, and avian influenza. An audience member pointed out that Zhigao's photos showed workers using two types of suits in the lab. He said that the blue suits are made in China and the white are made in France. Big difference in the price between the domestic and foreign manufactured suits. Chinese suits are not yet certified for use.

Yunzhang Hu (Principle Investigator, Institute of Medical Biology Chinese Academy of Medical Sciences) [listed as Longding Liu on the slides] Yunzhang spoke about the Kunming Institute of Medical Biology National Primate Research Center of High-level Biosafety. Like Zhigao he said that the lab was created after SARS in 2003 as an important resource for basic research on animal and human disease.



Facility was originally designed as a production facility for vaccines. He said at first they did not have any idea on how to create a BSL-4 lab. The lab cost 300m cny includes almost 3000 sqm of BSL-4 workspace. The facility includes a monkey breeding facility built 15km from Kunming city. Described the security for the facility. Showed BSL2 suites and BSL3, and 4. Suites. In the 3 and 4 rooms use B2 cabinets and negative pressure cages for monkeys.. Like Harbin they have extensive organization for maintenance and support, air handling and cleaning.

ABSL/BSL-4 Labs



Plans to combine the Ag BSL-4 lab with the vaccine platform of the imb so the facility can be more efficient producer of vaccines for infections disease.

An audience member asked about his thought on collaboration? He said that the facility doesn't have any experiments ongoing in BSL-3 right now, need some collaboration so we can work in the BSL-3 and BSL-4 spaces. An audience member suggested Joint scientific research before clinical trials, maybe nonhuman primate infection vaccine.

Session 5: Biosafety, biosecurity and bioethics chair **David R. Franz** (Professor, US Army Medical Research Institute of Infectious Diseases) introduced the session on new technology for laboratory biological risk management, improving response to incidents at the lab (fire, police, environment release and paramedic), improving biosafety and biosecurity training, laboratory leadership, and culture and ethics.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) introduced the Wuhan Institute of Virology BSL-4 laboratory to the group. He noted that some would visit the facility tomorrow. He said that he hoped to have a license for the lab soon. Learned a lot from SARS but China has a weak understanding of dual use capabilities. Scientists have different motivation for doing research. Scientists had a good reason to do gain of function research but their needs to be a balance. Asked how to make this balance and suggested several questions that might be asked when considering benefit and risk of certain experiments. Law and regulation cannot answer all these questions. Need basic principal to consider biosafety in the laboratory. China has a biosafety legislation framework. Have regulations measures and code related to all aspects of biosafety. But not everything can be well described, like wither to do certain experiments. He listed laws and ethical codes that could guide biomedical research and bioethics and discussed how law and ethics overlap in bio area and areas of bio ethics related to medical experiments on people. Noted that CAS has its own bio science ethics committee. He suggested that we combine biosafety, biosecurity, and bioethics as a way to address bio risk more broadly. Suggested that the life science community needs to establish science code of conduct and promote joint work on ethics, and create a culture and philosophy of ethics. A Chinese participant said that in China we teach biosafety courses. Students at CCDC have strong ethical concepts. They know the dangers inherent in BSL-3 and 4 labs. Biosafety and security are different, which is most dangerous for China today? Zhiming said that they are equally important and should be giving significant attention.

Thomas Ksiazek (Professor, Galveston National Laboratory) discussed Regulatory issues affecting the operation of a functional high containment lab including obtaining, shipping, maintaining and exchanging high hazard pathogens in today's regulatory environment. Ksiazek focused on biosafety and biosecurity in the United States, he said that the U.S. is the first country that had a national standard for biosafety. The impetus for this began at the Asilomar conference in 1975. In 1981 the U.S. CDC produced the first Biosafety in Microbiological and Biomedical Laboratories (BMBL) document that categorized pathogens into risk groups, now working on the 6th addition of the BMBL. It sets the operating principle for labs. When asked he says that he doesn't do safety for a living but does safety to keep on living. He said that there is not enough focus on how it safety regulations effect the science that the labs are designed to do. One of his key concerns is shipping samples, in the U.S. it was simple until about 5 years ago. GNL tried to ship an Ebola mouse, the package got lost in a Memphis, Tennessee FedEx shipping facility and it caused FedEx to reevaluate their policy on shipping select agents. Shipping is becoming almost impossible and really expensive. Now World Courier is the only group left that still ships agents in the U.S. But sometimes they use FedEx. He is working to get the USG to pressure FedEx to start shipping again. Another problem is that aircraft captains have the right to refuse dangerous goods shipments, pilot has the final word. The regulations that have been put in place since 9/11 are mostly

about security not safety. Really difficult to get samples to the U.S. chartered a jet to get Ebola back to U.S. and the British Government chartered a ship. Also difficult to get permit to operate a reference facility in the U.S. We also have to deal with regulators and intellectual property issues. Collectively we can make a difference; scientists need to address the trend of over securitization. A Chinese audience member said that CCDC internal movement between CCDC and CAS is really tough as well with lots of bureaucratic hurdles. China only uses one group for international shipping.

David R. Franz (Professor, US Army Medical Research Institute of Infectious Diseases, retired) spoke about laboratory leadership, responsibility and progress. He said that his goal as a institutional leader was to create a functional ethical organizational cultural so the institution could do good work. In the laboratory environment the key is to balance regulation with progress. Biosafety is much easier than biosecurity, hard to define the risk in biosecurity. Fink report was ahead of its time. Education and awareness are key. In the U.S. the government put together the National Science Advisory Board for Biosecurity (NSABB) security advisory board. Franz discussed the evolution of biosecurity in the U.S. only one death in us bio defense program, and three deaths pre 1969 before the U.S. offensive bio program was shut down. Compare that to 700,000 hospital acquired infections and 400,000 deaths due to medical mistakes. Laboratory leaders and scientists must understand that the actions by a few affect the many. Do not do something that affects the bio science enterprise doing important work and research around the world. An audience member asked how do you balance security with transparency and how do you build trust when outbreaks happen all the time? What about deep rooted mistrust due to social structure. What is your strategy to build trust with the Chinese? Franz said it is important to create nodes of trust. Build networks, and nodes, model we use at NAS is "Track OII" between experts in the U.S. and other countries. You can do the same thing in your country, reach out to others and form personal connections but there is no perfect solution in to this. A Chinese participant said that yes, more enlightened leadership is key for safety and for productivity and there is a need to build trust between people, directors and workers. But for P4 labs, how could we collaborate together to be more productive? He suggested that collaboration between the three new labs in China.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) **David R. Franz** (Professor, US Army Medical Research Institute of Infectious Diseases, retired) presented conclusions from the meeting and discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on Emerging Infections, Laboratory Safety and Global Health Security

Franz Presented the summary slides to the group. He identified some key topics:

- Role of scientists in balancing regulation, safety, security and productivity
- Popularizing Science
- Emerging infections (reservoirs, natural populations and sequence data)
- The importance of transparency
- Importance of trust within and between organizations and nations
- One Health (animal health, the economy, human health)
- Responsibility of the science community to self-police and in some cases, regulate

And presented some possible joint project ideas:

- Direct cooperation between CAS and NAS
 - Institutional partnering and collaboration
- Joint Table Top Exercise detailing hypothetical response to an outbreak
- Response training
- How to make decisions regarding “Dangerous Research” on certain pathogens and gain of function research
- A joint manuscript of shared values and concerns
- Overcoming barriers to sharing strain collections and transport of pathogens
- Exchange and training of students

The audience suggested other issues including exchanging reference strains as many strains in China are interesting to researchers in other parts of the world NAS and CAS representatives could jointly write a paper addressing how best to do this. Others said that would be very useful but we must follow international guidelines like the Nagoya Protocol on Access to Genetic Resources. Also domestic property rights, if sample is in third country and you isolate virus, the virus belongs to country where sample is from. This makes exchange difficult. Zhiming offered several additional suggestions. Could create an official agreement between institutions promoting institutional collaboration. The two academies can encourage scientists to create a culture of trust, safety and bioethics. NAS and CAS should provide a platform for cooperation. U.S. could do more Chinese scientist training and train the trainer training for and Chinese institution staff and students. He supported efforts to improve the free movement of sample material. Said the NAS and CAS will write a joint report and from that we can extract important information to provide to CAS and NAS leadership. CAS will set up a core group for NAS to talk to about future activities. NAS will work with CAS to bring scientist to the U.S. to continue the discussion. After the meeting the chairs decided on the following list of near terms action items:

Near term ideas

- Scientist exchange and training, particular for P4 laboratories.
- Joint P4 research projects that are beneficial for both US and Chinese scientists
- A memorandum between UTMB and Wuhan Institute of Virology (and other two P4 laboratories) for both long-term and short-term collaboration and partnership.

Longer terms efforts

- Sharing strain collections
- Joint white paper that each side could use to educate political leaders and others.
- Promote international collaboration via China-US joint projects,
- Joint training programs
- Joint manuscript between individuals and institutions
- Both academies support trust building and BS/BS at labs and by scientists.

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19 2017, Wuhan, China

Meeting Report

During the welcome session the Chair of the meeting for the Chinese Academy of Sciences **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) thanked the assembled audience of about 100 experts and noted that the meeting would focus on the importance of good science and good policy for controlling emerging disease. Yuan said the meeting is a milestone for Sino U.S. cooperation on emerging infections, laboratory safety and global health and security and would lead to further cooperation. **Xinwen Chen** (Director General/ Principle Investigator, Wuhan Institute of Virology, CAS) said that the Wuhan Institute of Virology, a key sponsor of the workshop, and the operator of China's first BSL-4 high containment laboratory, aims to improve fundamental research in virology in China by doing research to combat emerging infections and outbreaks in China and around the world and to ensure global health security and safety in China. **Yaping Zhang** (Vice President/ Academician, Chinese Academy of Sciences) was not available due to a family emergency so **Qingquan Zhang** (Department of International Affairs, Chinese Academy of Sciences) gave short opening remarks on behalf of CAS. He extended congratulations to the assembled group on behalf of the CAS Bureau of International Co-cooperation (who provided some of the funding for this meeting) and said that science in China is booming but groups like CAS and NAS need to look back to see how well we have done in the past and so we can provide guidance and better advice in the future.

Linda Saif (Academician, Ohio State University) opened the meeting on behalf of the U.S. National Academy of Sciences. The institution has several thousand members and 460 foreign associates as affiliates and counts 200 noble prize winners among its members. NAS was established in 1863 to provide independent advice to government. She gave examples of past NAS accomplishments including work on the Panama Canal, the launch of first U.S. satellite, and NAS's involvement in organizing the 1975 Asilomar Conference to discuss the degree of risk associated with recombinant DNA research. The Academy generates two types or reports, workshop and consensus reports with findings and commendations. The majority of the reports done are requested by government agencies. More recently NAS published reports on Human Gene Editing research guidelines. She noted that NAS recently celebrate its 150th anniversary. It was reorganized to form three Academies: the National Academies of Science, Engineering, and Medicine, (NAS, NAM, NAE).

She outlined the goals of the workshop as:

- 1) Establish communication and scientific relationships within the region
- 2) Exchange knowledge and best practices
- 3) Foster China-U.S. cooperation/collaboration

She explained that the workshop would help Chinese and American experts better respond to

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emerging infectious diseases, promote lab and global health biosecurity, and address impediments to cooperation/collaboration between the U.S. and China. She noted that CAS and NAS would jointly create a public workshop report.

David Relman (Academician, Stanford University) greeted the group on behalf of the U.S. National Academy of Medicine president and foreign secretary. He described NAM as a 2000 member organization focusing on improving health and setting the agenda in medicine and health in the U.S. As the leader of the NAM Forum on Microbial Threats he focuses on why infectious diseases occur, the microbe/host environment, and the framework for emerging infectious disease. NAM is also interested in microbial Forensics, global health security and in promoting a global health risk framework. He sees three broad areas for further collaboration between the U.S. and China.

- 1) Emerging Infections, on understanding reservoirs, emergence, disease surveillance, natural versus human origin, data sharing, and building capacity for research during public health emergencies.
- 2) Anticipating Risk in life science and medicine, on the drivers of biotechnology innovation and on identifying experiments that are too risky to conduct.
- 3) Governance of science to reduce risk on issues like Centralized versus distributed, costs, Learning from the past, and diminishing risk: technical versus social

At the end of the introductions the audience was curious about how NAS and NAM reports are produced and how the U.S. ensures that the government will take the advice given. It was noted that it is important for groups like NAS and NAM to catalyze and convene groups of the best minds to agree on a suitable path forward. CAS does research, advises and convenes as well; however, CAS is somewhat different from the NAS, and perhaps CAS can benefit from NAS experiences on how to provide sound advice to the government on science.

James LeDuc (Professor, Galveston National Laboratory) then discussed the technical aspects of high-containment lab sustainability: challenges of maintaining a maximum containment laboratory. Le Duc noted that China is on the verge of opening three BSL-4 (P4) high containment laboratories and offered thoughts and advice from his perspective as the head of the University of Texas Medical Branch Galveston National Laboratory (GNL). High containment labs are valuable resources that often contain the best people and address the most difficult problems of global health. GNL is designed to handle all BSL-4 agents and has been in operation for about a decade. The lab cost 175 million USD to build and has significant ongoing operations expenses independent of the cost of research activities. These include utility costs, training and maintaining the large onsite security force. The operations costs equal about 11.5-15 million USD or about 7-9 % of the construction costs per year. Other key issues of concern are the preparation for and proper management of laboratory accidents. Accidents are inevitable and it is important to take precaution. Labs should have a preexisting plan for many situations. This should include a communication strategy. Labs are a source of pride for the local community but when things go bad, opinion can change. It is important to build up a bank account of good will by talking about important scientific contributions made at your facility and how valuable research it is to global health.

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and then be open and transparent if something goes wrong.

The audience asked how do you defend and secure the large budget needed to run the lab year to year as the economy goes up and down. Le Duc said that as costs go up and political leadership changes, it is important to maintain lines of communication between the lab and the community and to politicians. In the U.S. it's not possible to guarantee the budget each year, it is a constant struggle. The U.S. NIH helps offset some of the operations costs, but it is not practical to recoup all of the maintenance money necessary from NIH alone. NIH just provides costs for operations of lab, but all research expenses are funded through individual competitive grants and contracts. About 2/3 of the initial construction costs were provided by NIH and the remainder by the State of Texas and the University, with some philanthropic contributions. The long-term sustainability of the laboratory requires constant vigilance regarding the cost of operations and maintenance.

Session 1 : Gain of function research, gene editing, targeting and delivery and other novel biotechnology was chaired by **Yanyi Wang** (Deputy Director General/ Principle Investigator, Wuhan Institute of Virology, CAS). Participants discussed gain of function research, gene editing, targeting and delivery and other novel biotechnology and the recent advances in technology and their applications.

David Relman (Academician, Stanford University) spoke about genome engineering and other life sciences technologies: challenges and opportunities. He began by describing that how to respond appropriately to emerging infections has not changed, what has changed is the kind of science that we do. Today scientists have profoundly more ability to study and manipulate life at the genetic level, but collectively they have not spent sufficient time to stop and think about what these new science capabilities mean. He described several process based classification of life science technologies like manipulating gene sequences to make viruses. Most RNA viruses can be synthesized in the lab, so possession of a sequence may allow an investigator to make that virus. This suggests that there are potential risks associated with possessing the sequence.

He sees a growing power of the individual in the life sciences due to the ease of joining the enterprise. When considering risk, it is important to think about the whole spectrum of motivators. The likelihood for harm goes from accidental, benign, or unwitting infections or release to, callous or deliberate misuse; however, the most likely cause of harm is an accident.

He asked the group if there are experiments that should not be undertaken because risks outweigh the benefits or because benefits will only be realized in the indefinite future. There is currently a vigorous discussion in the U.S. about experiments that enhance the virulence of influenza virus and genetic manipulation associated with gain of function research. He suggested that scientists think about strategies to minimize risk before doing such experiments and to factor risk into decisions about research plans. Strong scientific leadership is needed and should happen across international borders so that the entire scientific community is involved. The 1975 Asilomar Conference on Recombinant DNA offers an example where scientists self-regulated themselves and designed guidelines to ensure safe

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ways to work with recombinant DNA before an emerging area of research became a public problem.

The audience asked about the U.S. approval process for doing gain of function research or creating new virus and how experiments are assessed. Relman said that U.S. is in process of determining what to do about this. It's hard to know at what level to do it and he noted that awareness raising is happening at the scientist level. The audience asked how the public is engaged. He said it is also a challenge, in the U.S. we engage the elected representative of the public. In general most people are confused about the reasons for doing experiments like these we need to explain value of the work, as well as the risks. Audience member ask if there are U.S. law dealing with gain of function research. Relman said not yet but that law and regulation cannot cover everything, can control some research but any evaluation system will not be able to catch everything, especially a rogue actor. An audience member suggested that we can inspire more scientists to think about any risks before they undertake an experiment to address a scientific problem.

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Zhihong Hu (Principle Investigator, Wuhan Institute of Virology, CAS) discussed the construction and rescue of a functional synthetic baculovirus as an example of the capabilities of modern synthetic biology. She noted the massive uptick in reference to synthetic biology in scientific journals this century and the many advances in the fielded since polio virus was first synthesized in 2002. Her research focuses on Baculovirus co-evolution with insect hosts, a system with a very unique lifecycle. Her research could be used as a bio-control agent to control pest outbreaks. She noted that there is a low risk for synthesizing baculovirus because the virus has a large flexible genome that is easy to manipulate where researcher can delete genes without risk. She concluded with a discussion on how to regulate synthetic biology and if the scientific community should. The audience asked about reproducibility, she said a very skilled student can synthesize baculovirus in one month, others in two months. An audience member asked her to predict when Zika virus would be synthesized. She said any flavivirus lab could do it. Another member of the audience asked if having the original virus made the process easier? She said yes.

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it is hard to do from a database sequence and more difficult without original virus. An audience member asked about safety concerns noting that in the U.S. the NIH publishes regulations on modified genetic organisms. Certain labs can only possess a percentage of the genome, 30% for small pox.

Wensheng Wei (Professor, Peking University) spoke about high-throughput functional genomics: coding, non-coding and beyond. He focused on gene editing tools and gain of function research in Chinese life science. Gene editing has lots of applications for drug target identification. He uses gene editing systems, like CRISPR to address bacteria antibiotic resistance, a large problem in China. His research focuses on *Clostridium difficile* bacteria that is more resistant to antibiotics and how synthetic and natural systems for editing can be turned into high throughput strategy to produce better antibiotics. He is also working to produce Zika virus antivirals and is developing high throughput methods to identify non coding elements on the chromosome to get a better tool to study the whole genome. New gene

editing tools are useful for addressing drug resistance but techniques still need to get through clinical trials. An audience member asked if he had found any new roles or links for RNA in the infections disease process. Said not yet but that this is a promising area.

Session 2: Public health response to outbreaks and issues. The session chair **James Le Duc** (Professor, Galveston National Laboratory) noted that the panelists would present three technical talks on about collaborating on research concerning dengue, Zika, Ebola and influenza, including avian influenza and host-pathogen interaction (pathogenesis). **Xia Jin** (Principal Investigator, Institute Pasteur of Shanghai, CAS) spoke about dengue immune sera enhance Zika virus infection in human peripheral blood monocytes. He noted that dengue antibodies enhance Zika infection and explained how, and noted how this is being considered as researchers work to produce a Zika vaccine. Audience members asked if dengue would enhance infection in infants and toddlers and he noted that a baby born of a dengue infected mother will have more severe infection. Noted that there is no epidemiology data now that overlays dengue and Zika infections showing severe Zika in populations with dengue. He also noted that Zika vaccine would come soon and that the Zika vaccine much easier than a dengue vaccine. **Rui Gong** (Principal Investigator, Wuhan Institute of Virology, CAS) spoke about engineered human antibody constant domain as candidate against Ebola virus. Said that he did post doc at Frederick Maryland at USAMRIID. He discussed techniques for using therapeutic antibodies as tools for control of viral infection. And updated the group on ZMapp and other current neutralizing antibodies against Ebola. He explained where next steps in the process including animal study, and evaluation of the “drugability” of the 7c2. **Peiyong Shi** (Professor, University of Texas) discussed antiviral drug discovery and development. He noted his diverse background in science, public health and administration and more recent work on antiviral drug discovery. His presentation outlined antiviral drug discovery strategy to target viral protein, host protein, stimulate immune system, targeting molecular pathways, and two approaches, target based approach and cell based approach. An audience member asked if he knows why the ___ virus clears in 24 hours? Said he was not sure yet and that we need more experiments. Another audience member said that in clinical use, the prompt for initiating treatment would likely be a sign, like fever, how do you envision timing of use in humans? He noted that when patient reports to clinic viremia already starts to drop. Right now therapy. In dengue, maybe prophylactic. An audience member asked if the virus will clear faster if you increase the dose? He said that the hope is to get the immune system to kick in to mitigate the disease. The session chair asked about the location of his collaborators. He said they are all over the world and including folks in Brazil since that is Zika ground zero, they can report progress in real time to Brazilian government to promote transparency.

James Le Duc (Professor, Galveston National Laboratory) the chair of the session then discussed improving the BSL-4 / P4 laboratory’s role in emergency health response and the importance of communications during a crisis. He changed the focus from technical talks to issues involved in containment labs to talk about communication issues relevant to BSL-4 labs. He noted that GNL has 6 hospital type rooms to treat infected patients while in containment. GNL is one of nine regional facilities that can treat Ebola in the U.S. He asked a broad question at the beginning of the talk, at what level and for how long should we screen

people after exposure? Ebola can live in the body for months after recovery. It's important to take precaution but size the precaution to the risk. Focus should be on laboratories providing transparent, accurate and timely diagnostics of patients during an outbreak or exposure. When the community is not informed the situation tends to get out of hand. Valuable to say what is or is not an issue in advance. Much can be done to manage the perception of risk in advance of high profile situations. Proper education should happen early. Use the right people to do this, Thomas Ksiazek has experience responding to outbreaks going back to 1977. Wave two is addressing the public during the crisis. During a situation leaders should know the facts and have something to say and convey it clearly. We learned a lot about communication dealing with the Ebola case in Dallas, TX. Important to have clear leadership and manage the politicians. In the Dallas case then governor Rick Perry created a taskforce that brought everyone together. Later other problems had to be solved. The patient generated a huge amount of medical waste, eight 55 gallon drums of waste every day. The state of Texas used trucks to truck the waste to UTMB and we disposed of it. Other issues include cleaning secondary facilities and dealing with pets. An outbreak can be a time when you demonstrate the value of your facility to your country, be prepared to help, plan a communication strategy, use a trusted spokesperson and stay on message. Anticipate and welcome involvement of political leaders. Be prepared to provide definitive diagnostics. Train lab and clinical staff on PPE and patient management before the need arises and don't forget waste management.

During the question and answer session a Chinese participant asked GNL's "official" responsibilities during a crisis about problems delegating authority when making official statements. Was it because lab is national lab? Le Duc said that he did not have the responsibility to speak on behalf of the nation did not get paid extra for any of this, it is part of our duty, to the community, state and nation. Had to reprioritize some of our basic research, like vaccine development. That said, extra investment paid off in the good will and support that we received and good statements help preserve the prestige of lab. He also said that the community was very supportive because GNL spends a lot of time communicating and maintaining a dialogue with local leaders, for example GNL did a 20 year economic forecast, noting that GNL generates more than 1 billion for the community. An audience member noted that China was also prepared to respond to Ebola. Government leaders across agencies and ministries had many meetings but the response would have been organized by the Ministry of Health and Family Planning if there was an Ebola case in China. An audience member asked for more details about how to treat clinical medical waste. Le Duc explained that the waste was initially treated with chemicals and not autoclave because Dallas did not have a large enough facility. Others noted that China does not have large a capacity to autoclave clinical waste and needs to come up with a strategy and that in china emergency response is organized by Chinese CDC. Le Duc noted that GNL played a supporting role, U.S. CDC had primary responsibility for the national response but because the case happened in the state of Texas GNL naturally had a larger role. A Chinese participant noted that the system is different than in China but noted that if anything happens in Wuhan, then first sample would go to Hubei province CDC first.

The first day ended with a round Table Discussion chaired by **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) and **James Le Duc** (Professor, Galveston National Laboratory). The chairs reviewed the discussion from day one. Yuan noted that excellent science is going forward in China and the United States but it is raising some policy issues at the national and international level. How do we work together to create regulations to that will not hinder the good science going on? He sees many opportunities for collaboration and international exchange. How do we educate students on technical issues but help them understand the context of global challenges going forward. He noted the BSL-4 labs about to open in China and asked about to best share virus stocks, reagents and tools necessary to do the critical scientific work the labs were designed to do?

First Yuan noted that the day one presentations combating emerging diseases control, this topics is a good basis for our future communication and collaboration, the U.S and China should find a common interest in this area. Second he noted that NAS and NAM and CAS, while different organizations, have the same objectives. Promote science for development of world. Our communities have different ways to approach crisis, China should do a better job explaining our system and what happens when there is a problem in china. We have lots of process and but we can learn a lot from the American side on understanding effective crisis management. Third he is concerned about how scientists can manage advances of new technology. Scientists have mostly used modern technology and science to do good work but today some research poses risks that should be acknowledged. How do we prevent accidents or misuse while paying attention to the real benefits of the research but understand the risks. Fourth he noted that scientists have a duty to help the public understand the value of their work and demystify their research.

An audience member agreed with the theme of his summary, and said that the problem of controlling emerging infections is an interesting problem that we share. In important factor is how do scientists better understand natural disease reservoirs and how do we interpret sequence data from nature? Today it is easy to generate sequence but it remains hard to understand what it means. What other kinds of information do we need to collect? We should also think about the kinds of experiments that warrant further discussion or review, get ahead of this before outsiders challenge the rationale to do the science.

A Chinese participant said that we know that bats and birds host potential pathogens and that the scientific research community is working across China to map reservoirs. We have done four over three years and generated a lot of much sequence information but we don't understand why disease emerge when they do, more collaboration on reservoirs is needed. There is a lot China can learn from the GNL, but not just scientifically, transparency and trust is important, we want the world to understand what we are doing. P4 labs are huge investments, they should be collaborating. It would be good to see institutional level collaboration between NIV and GNL we could have the CAS spend money to help support the collaboration. CAS has several mechanisms to support international engagement and collaboration including finding international exchanges and fellowships of people from abroad to come to china. Scientists in China can propose international projects to CAS and

CAS can fund, also on the ecology and evolution of infectious disease, CAS is working with the U.S. NSF and NIH, the program manager will visit NIV next month. We can use all these resources.

Another Chinese participant said that the group should be most interested in pathogenic viruses and should focus on significant viral threats to human health. China CDC is working to discover unknown pathogens. The U.S. and China should really share experience on emergency response scientists will have to work with the policy makers to prepare for an emergency, what would happen if the truck with the Ebola waste were to have an accident for example? Maybe a joint report on this would be appropriate.

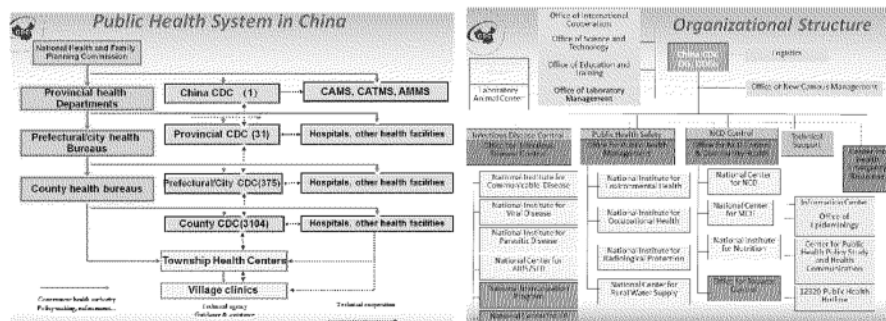
A Chinese participant noted that sharing viruses even domestically is difficult and asked how we can overcome this? Have created a consortium to share samples in China, this is hard to do international, but we were able to import Zika for study and also have our own strands for export. Lots of issues at the policy level, for example shipping is a big problem especially live virus, but there are techniques to ship part of the virus. More science can be done to overcome the policy problems. An American participant noted that the group is focused on pub health and science but should remember to engage vets and the agriculture production sector, there is a close relationship, consider One Health. Like flu we can expand this collaboration.

Yuan said that tomorrow the group would hear more about China's high level bio safety facilities and discussions about biosafety, regulation and management in China and in the U.S. These topics can also be the basis for future collaboration. To better accommodate collaboration we should come up with the right kind of linkage between our groups. After the meeting we should identify priority considerations and write remarks to our presidents about what our two academies can do together, two academies provide channel and bridge for future.

Day 2

Session 3: Emerging infectious diseases and global health security. The chair, **Pei-yong Shi** (Professor, University of Texas, GNL) noted that the session would cover anti-viral countermeasures (strategy and R&D) and improving the high containment laboratory's role in emergency health response.

George Gao (Academician, Institute of Microbiology, CAS) discussed biosafety, biorisk, and biosecurity pathogens and human behavior.



He has a lot of experience responding to natural outbreaks, including playing a leading role in China's response to the 2014 Ebola outbreak but less experience addressing deliberate outbreaks. He stated that the meeting was important because more U.S. Chinese collaboration can help prevent misuse. He attempted to answer the question, why do we have so many new viruses and periodic outbreaks? Noted that today the world is more interconnected, globalization creates interdependence. Much happened because of human behavior. Used talked about the H7N9 outbreak from 2013 and the difference between low pathogenic and highly pathogenic avian influenza. He said he does not know what the will be the next HxNy flu virus that causes significant loss of human life. Flu continues to evolve and is very complex, New flu strains circulate and evolves in live poultry markets. China is a place where the mixing occurs. What is the solution, close the markets? (noted the Science article on this from 2014). He said Ebola, Nipa, and Mers, virus also spill over from natural reservoir to humans. Mers is especially troublesome, corona virus recombination is common but coronavirus is common. Will Mers be like flu? It is a constant struggle to control against virus evolution and adaption into new hosts. Looking at how virus adapt to new hosts is a key area where we can cooperate. We can exchange methods for studying adaptation and work with the international community. He has advocated for younger people to address emerging communicable disease especially in Africa and noted that Chinses CDC is thinking more internationally with aid and financial support. He helped establish the Sierra Leone China friendship biological safety association.

He said that the U.S. and China should have a real discussion on how to work together to consider gain of function and lose of function research, it is not in either of our countries interest to create a disastrous viruses. Said that going forward transparency is critical, make sure that the public knows what you are doing. Gao also discussed the disease surveillance context of the announced Chinese government belt and road initiative, the Chinese effort to create an economic belt through the historic silk road region of central Asia.

An audience member working on Mers found a very high Mers presence in camels in Pakistan we also found samples in humans, but did not find any cases? Do you know why? Gao was not sure, maybe mutation? Said maybe that the virus population in Pakistan has low pathogenicity? An American participant said that he has not see the Ebola outbreak virus take on traits during the 2014 outbreak that made it worse. Gao said that yes no evidence and that

lab work does not show mutations but we are still doing sequencing. An audience member asked if Gao was trying to say that bats carry Mers like virus and what is the real ancestor of Mers, bats or camels? Also asked if we are likely to see a flu like Mers virus in the future. Gao said that camels are just intermediate hosts and that he thinks that Mers will evolve to be flu like in the future.

Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University) spoke about the Chinese One Health strategy for responding to emerging infectious diseases (EIDs). One Health strategy that considers all related contact between human and animal an effective way to combating EIDs. Many are actively working on One Health in Guangdong province and he describes several studies he was involved with. He explaining that One Health is a useful strategy in Guangdong. Because of the emphasis on freshness in Cantonese food animals are kept alive until right before they are consumed, this makes Guangdong province, and especially the live animal markets a hotbed of disease outbreaks. 70% of Emerging Infectious Diseases are vector borne disease and zoonotic diseases, Guangdong is vulnerable to EIDs due to its location, culture and high population. The first SARS outbreak was in Guangdong. Infected bats came into contact with bats and civet cats and then the virus evolved and jumped to humans. Another reemerging infectious disease of concern is brucellosis, it is associated with imported number of sheep contacts with humans. Also detailed the five waves of H7N9 outbreak in China. Live poultry markets were key to spread, 95% of cases were exposed to live poultry. He noted a recent novel mutation (in March 2017) that showed a high pathogenicity avian flu. China has examined the impact of closing the live poultry markets to curb future outbreaks but that this would upset the traders. Cited an article that details the EIDs response in China and the need for a One Health approach in future responses. In ONE Health journal. (get this).An audience member said that people in Guangdong eat everything so you have a unique problem. Controlling live poultry sales is a difficult problem. Jiahui said yes it is challenging because of the food culture in Guangdong, flu is endemic in chickens and control is difficult. Noted a dengue outbreak in 2014 with no vaccine. An American participant noted low path to high path H7N9? Said that it was bad for chickens but good for public health. Jiahui said that lots of chickens from china end up in Guangdong animals are in close contact. As virus becomes virulent in birds more birds die and effects the economics of the bird markets.

Zhengli Shi (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about the evolution and pathogenesis of bat SARS like coronavirus. Shi is working on corona virus and other emerging infections and said that bat SARS like corona virus could be the next pandemic. He described the cases and countries involved in the 2003 outbreak. For bat corona virus to cause the next SARS like outbreak many factors will have to involved. To do examine this he is looking at the pathogenesis of SL CoV in transgenic mice. Found that it replicates very well in mice and human tissue. Can easily enter human cells but in the animal model the virus has less pathogenesis, this is good news. His research shows that some bat SL CoV have potential interspecies transmission to other animals and humans. An audience member asked if you could you clean the bat population of this virus? Zhengli said that he tried this with nipa virus in bats but bats could produce antibodies, clear within seven days. In nature we found that bats produce antibodies to some viruses but not all. SL CoV can exist in bats for several months. An audience member said that you cannot be sure that this pathogen

can cause human disease. We need more data. Infections in very mild. No one had clinical syndrome. Impact is very mild. Still need to test if they are pathogenic or not.

Mifang Liang (Principle Investigator, National Institute for Viral Disease Control and Prevention) discussed the epidemiological characteristics of severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery to current knowledge. of SFTS in china recently emerged, discovered in 2009 and 2010.

Emergency of SFTS in China, 2009-2010



She said that SFTS is a new emerging infection and it has been very hard to find the virus in nature. Only recently added to the ICTV catalog. In the catalogue it is described as a highly pathogenic phlebovirus in the family bunyaviridae. It is now listed by the WHO as a concerned special pathogen. She recently mapped the genome structure of virus. Determined that it is transmitted by ticks and person to person. The number of cases are increasing every year but the case fatality rate is decreasing every year. Most patients are from the country side about 86% are farmers over 10,000 cases in 25 provinces were reported since the first discovery of SFTSV. Peak time for exposure and infection is May to Aug due to weather. Ticks may act major vector for SFTSV transmission and domestic animals were widely infected by SFTSV, but as we don't know as reservoirs or hosts. Person to person transmission of SFTSV through directly contact patient blood containing high virus load. An audience member asked how do people become infected? Mifang said that is unknown, so far only local endemic investigations and we have isolated virus from ticks. Did not do experiment to find out how humans have become infected. Not sure how they get it. Most don't have tick bites or have been around recently slaughtered animal. In the future we will do experiments to determine how humans get the virus.

Linda Saif (Academician, Ohio State University) talked about animal coronaviruses as a global threat to humans and animals. Corona viruses continue to evolve and emerge globally as a cause of fatal respiratory and enteric infections of young animals and humans Saif's talk covered SARs and Mers corona virus. She explained the basic morphology of the virus and the diversity of avian and mammalian CoVs. Corona viruses are genetically diverse due to frequent mutation and recombination. The viruses are transmitted from wild ruminant to cattle to humans. Described the process of how BCoV MERS CoV and SARS CoV infect their hosts and if MERs infects camels and humans and vis versa. Discovered that the elderly on statins are more susceptible to Noro virus and to MERS and SARS. She is concerned that SARS will reemerge from an animal reservoir and cause another pandemic. It is important to determine how MERS CoVs is transmitted so the scientific community can better target the

virus. Right now the strategy is to manage and reduce contact with infected camels or camel products but there are many unresolved questions. The epidemiology of MERS CoV infections in camels and its zoonotic transmission is poorly understood, but it resembles respiratory coronavirus infections in cattle. No vaccines have been licensed for respiratory CoV infections.

An audience member asked about the closest relative to MERs? Saif said a swine virus from Hong Kong, in cat, also sparrows and other bird strains. An audience member said that they were trying to determine if all corona viruses originated from bats. Where is swine corona virus from? Saif said we don't know, pevd (?) died out in Europe. Theory is that it was not completely swine adapted. A Chinese participant said that if SARS is gone why should the government keep doing SARs research? What is your suggestion on how to prepare for another attack of SARs. Saif said that labs should keep all reagents available as the reservoir is still there. We still see many spillover events, only when virus acquires ability to go from human to human will it be bad. Don't know when another strain of the virus will gain the ability to do this. It is important to stay vigilant. An audience member asked about farmed civet cats relationship to spread? Laif said there is evidence of interspecies transmission between civets and bats and that this is another argument to close live animal markets, if we get rid of civets in live animal markets we could be able to stop transmission. An audience member supported this and said that Chinese data supports transmission between bats and civets in a farmed environment but some studies say no SARs CoV in farmed civets.

Chengfeng Qin (Professor, the Academy of Military Medical Sciences) described existing weapons against the emerging Zika virus. Chengfeng discussed the discovery and spread of Zika from Africa to more recent epidemics and detailed isolating the Chinese Zika virus strain. He published a paper in January 2016 about Zika in China and is working with Pei-yong and George Gao to do the work. He noted that there is currently no case of Zika infection reported in mainland China but there are examples of several imported cases. Looking for further collaboration and communication on Zika with American researchers. Audience members noted that much of the population of Brazil might have dengue already and asked about the relationship between dengue and Zika. How do the antibodies interact?

David Swayne (Director, USDA Southeast Poultry Research Laboratory) discussed *Avian Influenza at the Animal-Human Interface: Global Challenges for Scientific Contributions to Control* Talked about the OFFLU animal flu expertise network and the importance of combating the influenza virus at the animal human interface and then discussed specific cases. Swayne works to combat animal flu issues and also implements the One Health concept to prevent animal health issues from becoming human health problems. He said that animal flu continues to be a threat to humans 453 recorded deaths just this year. We are seeing a lot of H3N2 infections at agricultural fairs in the U.S. 534 H7N9 deaths in china this year. We don't know what will cause the next pandemic. OFFLU works with WHO and OIE to track and prepare, they help WHO do vaccine work by providing information seasonal and pre-pandemic animal flu strains.

1. OFFLU Network of Animal Influenza Experts

OIE (World Organization for Animal Health) and
 FAO (Food and Agriculture Organization of the United Nations)
 Animal InFLUenza Network: 6 continents, 26 countries, 60 experts

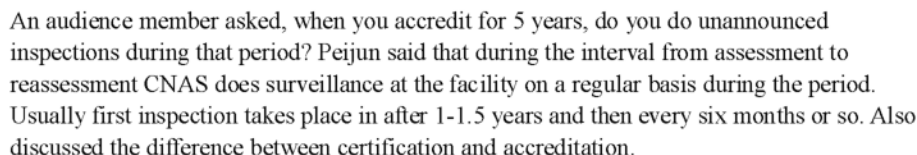


He described several avian influenza vaccines strategies. Lots of different seed strains. Purpose of the OFFLU is to help analyze data to make the decision on what to produce and when. An audience member asked about reasons for changes to the strains over time, asked if he attributed changes to vaccination or natural drift over time? Swayne did not have a reason for the changes, we see changes in the same countries that are doing vaccinations. Before vaccinations changes were random, now they are different.

Gong Cheng (Professor, Qinghua University) presented his research on non-structural protein 1: a key for flavivirus transfer from host to vector. The discussion centered around flavivirus and dengue and the dengue virus transmission process. Looking at transmission of dengue from human to mosquito, and if factors in human blood affect transmission. **Peiyong Shi** (Professor, University of Texas) discussed the rapid response to Zika virus emergence including diagnostics and the state of vaccine development. Talked about devastating aspects of Zika, microcephaly. Virus can persist male sexual reproductive tract well after symptoms clear. 80% of individuals are asymptomatic. There are two ways to diagnose Zika right now, detect virus or detect antibodies. Better way would be to produce assay for Zika detection in patients. Also said that there are two Zika vaccines in phase 1 trials and discussed the best platform manufacture inactivated Zika vaccine and described experiments to test vaccines. One of the vaccines has been proven to protect monkeys from Zika infection but more work is needed.

Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment was chaired by **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS). Presenters during the session discussed high containment labs in China and the U.S, community relations and public communication, biocontainment labs and the importance of clinical facilities, biocontainment maintenance and operations, outbreak response and the importance of reference collections and reagents.

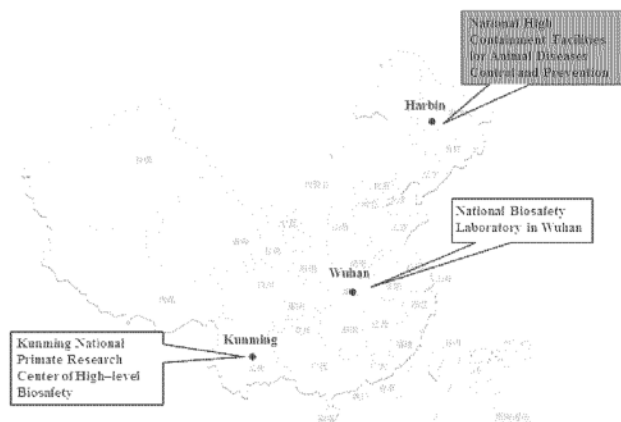
Peijun Zhai (Division Director, China National Accreditation Service for Conformity Assessment) Discussed the process of accrediting biological safety labs in China. He first



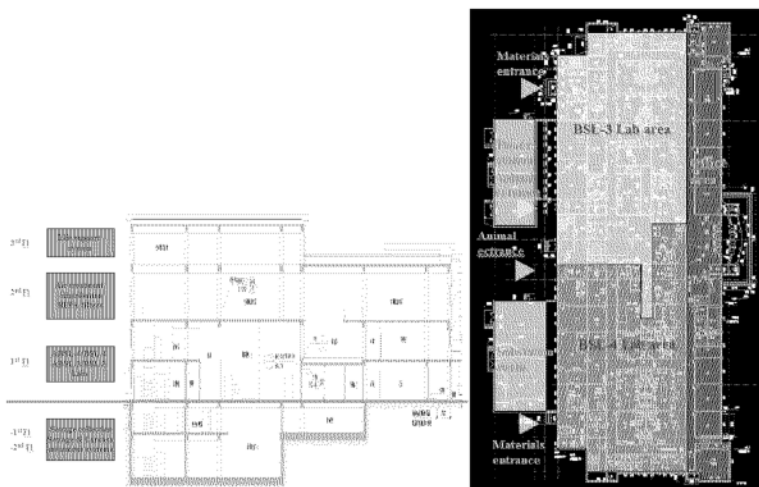
¹ <http://www.codeofchina.com/standard/GB19489-2008.html>

and use additional personal protective equipment (PPE). An audience member asked about GNL's precautions against flooding and severe weather and their waste management procedures and record back up? Ksiazek said that Hurricane Ike did inundate Galveston Island but that the building was not affected, GNL had power and acted as a life boat for campus. Waste stream is done as standard disposal for these facilities. Also GNL incinerates solid waste and everything is autoclaved. GNL has a reference center with emergency backup power and he is reasonably sure that the viruses would survive a problem. Some labs are in rural areas some are in population centers. High containment facilities have shown that they can operate safely in population areas.

Zhigao Bu (Director General/Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences) discussed the design, construction and operation of Chinese national high containment facilities for animal diseases control and prevention. Zhigao said that Harbin Veterinary Research Institute is the most active institute for animal disease control in China. It is important to have such a facility because China has a significant amount of the worlds livestock (50%, 800m of the worlds pigs for example), lots of agricultural challenges in China. SARs was a huge shock. After the outbreak In 2004 China launched plan to build 3 BSL-4 labs in Harbin, Kunming and Wuhan. Harbin for animal disease control and prevention, the National Virology Lab in Wuhan, the national primate research center in Kunming.



He said that when we started we had no idea how to construct BSL-4 lab buildings and facilities we formed lots of partnerships. Worked closely with Australian animal lab, with labs in Japan and Canada, Ames Iowa and Kansas State University in the U.S., Hamburg and Reims in Germany and the lab in Lyon, France. Showed pictures of the construction HCFAD.



Construction was completed in 2016. The lab is composed of 5 floors with two underground. The Lab has 9 function areas for BSL-4 and 10 for BSL-3. Discussed security measure for the facility, including access and monitoring of personal. Hope to have CNAS certification by the end of this year.

An audience member asked which pathogens do you anticipate studying at in the BSL-4 portion of the lab? Zhigao said that is currently difficult to answer, interested in many pathogens, but need to get approved for each by Ministry of Health, it can be difficult to get approved. We work with many pathogens at the BSL-3 portion of the lab right now, Brucella, flavivirus, SARs, and avian influenza. An audience member pointed out that Zhigao's photos showed workers using two types of suits in the lab. He said that the blue suits are made in China and the white are made in France. Big difference in the price between the domestic and foreign manufactured suits. Chinese suits are not yet certified for use.

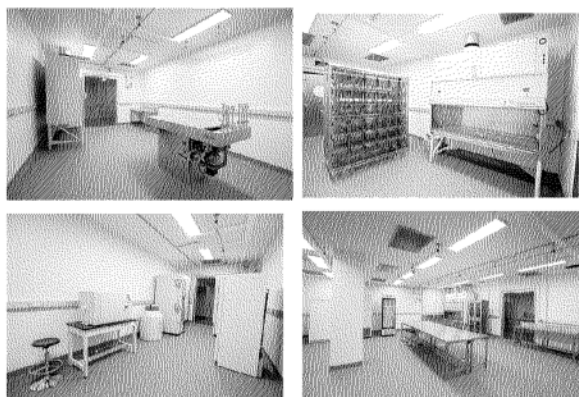
Yunzhang Hu (Principle Investigator, Institute of Medical Biology Chinese Academy of Medical Sciences) [listed as Longding Liu on the slides] Yunzhang spoke about the Kunming Institute of Medical Biology National Primate Research Center of High-level Biosafety. Like

Zhigao he said that the lab was created after SARS in 2003 as an important resource for basic research on animal and human disease.



Facility was originally designed as a production facility for vaccines. He said at first they did not have any idea on how to create a BSL-4 lab. The lab cost 300m cny includes almost 3000 sqm of BSL-4 workspace. The facility includes a monkey breeding facility built 15km from Kunming city. Described the security for the facility. Showed BSL2 suites and BSL3, and 4. Suites. In the 3 and 4 rooms use B2 cabinets and negative pressure cages for monkeys.. Like Harbin they have extensive organization for maintenance and support, air handling and cleaning.

ABSL/BSL-4 Labs



Plans to combine the Ag BSL-4 lab with the vaccine platform of the imb so the facility can be more efficient producer of vaccines for infections disease.

An audience member asked about his thought on collaboration? He said that the facility doesn't have any experiments ongoing in BSL-3 right now, need some collaboration so we

can work in the BSL-3 and BSL-4 spaces. An audience member suggested Joint scientific research before clinical trials, maybe nonhuman primate infection vaccine.

Session 5: Biosafety, biosecurity and bioethics chair **David R. Franz** (Professor, US Army Medical Research Institute of Infectious Diseases) introduced the session on new technology for laboratory biological risk management, improving response to incidents at the lab (fire, police, environment release and paramedic), improving biosafety and biosecurity training, laboratory leadership, and culture and ethics.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) introduced the Wuhan Institute of Virology BSL-4 laboratory to the group. He noted that some would visit the facility tomorrow. He said that he hoped to have a license for the lab soon. Learned a lot from SARS but China has a weak understanding of dual use capabilities. Scientists have different motivation for doing research. Scientists had a good reason to do gain of function research but their needs to be a balance. Asked how to make this balance and suggested several questions that might be asked when considering benefit and risk of certain experiments. Law and regulation cannot answer all these questions. Need basic principal to consider biosafety in the laboratory. China has a biosafety legislation framework. Have regulations measures and code related to all aspects of biosafety. But not everything can be well described, like wither to do certain experiments. He listed laws and ethical codes that could guide biomedical research and bioethics and discussed how law and ethics overlap in bio area and areas of bio ethics related to medical experiments on people. Noted that CAS has its own bio science ethics committee. He suggested that we combine biosafety, biosecurity, and bioethics as a way to address bio risk more broadly. Suggested that the life science community needs to establish science code of conduct and promote joint work on ethics, and create a culture and philosophy of ethics. A Chinese participant said that in China we teach biosafety courses. Students at CCDC have strong ethical concepts. They know the dangers inherent in BSL-3 and 4 labs. Biosafety and security are different, which is most dangerous for China today? Zhiming said that they are equally important and should be giving significant attention.

Thomas Ksiazek (Professor, Galveston National Laboratory) discussed Regulatory issues affecting the operation of a functional high containment lab including obtaining, shipping, maintaining and exchanging high hazard pathogens in today's regulatory environment. Ksiazek focused on biosafety and biosecurity in the United States, he said that the U.S. is the first country that had a national standard for biosafety. The impetus for this began at the Asilomar conference in 1975. In 1981 the U.S. CDC produced the first Biosafety in Microbiological and Biomedical Laboratories (BMBL) document that categorized pathogens into risk groups, now working on the 6th addition of the BMBL. It sets the operating principle for labs. When asked he says that he doesn't do safety for a living but does safety to keep on living. He said that there is not enough focus on how it safety regulations effect the science that the labs are designed to do. One of his key concerns is shipping samples, in the U.S. it was simple until about 5 years ago. GNL tried to ship an Ebola mouse, the package got lost in a Memphis, Tennessee FedEx shipping facility and it caused FedEx to reevaluate their policy on shipping select agents. Shipping is becoming almost impossible and really expensive. Now World Courier is the only group left that still ships agents in the U.S. But sometimes

they use FedEx. He is working to get the USG to pressure FedEx to start shipping again. Another problem is that aircraft captains have the right to refuse dangerous goods shipments, pilot has the final word. The regulations that have been put in place since 9/11 are mostly about security not safety. Really difficult to get samples to the U.S. chartered a jet to get Ebola back to U.S. and the British Government chartered a ship. Also difficult to get permit to operate a reference facility in the U.S. We also have to deal with regulators and intellectual property issues. Collectively we can make a difference; scientists need to address the trend of over securitization. A Chinese audience member said that CCDC internal movement between CCDC and CAS is really tough as well with lots of bureaucratic hurdles. China only uses one group for international shipping.

David R. Franz (Professor, US Army Medical Research Institute of Infectious Diseases, retired) spoke about laboratory leadership, responsibility and progress. He said that his goal as a institutional leader was to create a functional ethical organizational cultural so the institution could do good work. In the laboratory environment the key is to balance regulation with progress. Biosafety is much easier than biosecurity, hard to define the risk in biosecurity. Fink report was ahead of its time. Education and awareness are key. In the U.S. the government put together the National Science Advisory Board for Biosecurity (NSABB) security advisory board. Franz discussed the evolution of biosecurity in the U.S. only one death in us bio defense program, and three deaths pre 1969 before the U.S. offensive bio program was shut down. Compare that to 700,000 hospital acquired infections and 400,000 deaths due to medical mistakes. Laboratory leaders and scientists must understand that the actions by a few affect the many. Do not do something that affects the bio science enterprise doing important work and research around the world. An audience member asked how do you balance security with transparency and how do you build trust when outbreaks happen all the time? What about deep rooted mistrust due to social structure. What is your strategy to build trust with the Chinese? Franz said it is important to create nodes of trust. Build networks, and nodes, model we use at NAS is "Track Out" between experts in the U.S. and other countries. You can do the same thing in your country, reach out to others and form personal connections but there is no perfect solution in to this. A Chinese participant said that yes, more enlightened leadership is key for safety and for productivity and there is a need to build trust between people, directors and workers. But for P4 labs, how could we collaborate together to be more productive? He suggested that collaboration between the three new labs in China.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) **David R. Franz** (Professor, US Army Medical Research Institute of Infectious Diseases, retired) presented conclusions from the meeting and discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on Emerging Infections, Laboratory Safety and Global Health Security

Franz Presented the summary slides to the group. He identified some key topics:

- Role of scientists in balancing regulation, safety, security and productivity
- Popularizing Science
- Emerging infections (reservoirs, natural populations and sequence data)
- The importance of transparency

- Importance of trust within and between organizations and nations
- One Health (animal health, the economy, human health)
- Responsibility of the science community to self-police and in some cases, regulate

And presented some possible joint project ideas:

- Direct cooperation between CAS and NAS
 - Institutional partnering and collaboration
- Joint Table Top Exercise detailing hypothetical response to an outbreak
- Response training
- How to make decisions regarding “Dangerous Research” on certain pathogens and gain of function research
- A joint manuscript of shared values and concerns
- Overcoming barriers to sharing strain collections and transport of pathogens
- Exchange and training of students

The audience suggested other issues including exchanging reference strains as many strains in China are interesting to researchers in other parts of the world NAS and CAS representatives could jointly write a paper addressing how best to do this. Others said that would be very useful but we must follow international guidelines like the Nagoya Protocol on Access to Genetic Resources. Also domestic property rights, if sample is in third country and you isolate virus, the virus belongs to country where sample is from. This makes exchange difficult. Zhiming offered several additional suggestions. Could create an official agreement between institutions promoting institutional collaboration. The two academies can encourage scientists to create a culture of trust, safety and bioethics. NAS and CAS should provide a platform for cooperation. U.S. could do more Chinese scientist training and train the trainer training for and Chinese institution staff and students. He supported efforts to improve the free movement of sample material. Said the NAS and CAS will write a joint report and from that we can extract important information to provide to CAS and NAS leadership. CAS will set up a core group for NAS to talk to about future activities. NAS will work with CAS to bring scientist to the U.S. to continue the discussion. After the meeting the chairs decided on the following list of near terms action items:

Near term ideas

- Scientist exchange and training, particular for P4 laboratories.
- Joint P4 research projects that are beneficial for both US and Chinese scientists
- A memorandum between UTMB and Wuhan Institute of Virology (and other two P4 laboratories) for both long-term and short-term collaboration and partnership.

Longer terms efforts

- Sharing strain collections
- Joint white paper that each side could use to educate political leaders and others.
- Promote international collaboration via China-US joint projects,
- Joint training programs
- Joint manuscript between individuals and institutions
- Both academies support trust building and BS/BS at labs and by scientists.

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Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19 2017

Wuhan, China

Meeting Report

During the welcome session the Chair of the meeting for the Chinese Academy of Sciences (CAS) **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) thanked the assembled audience of about 100 experts and noted that the meeting would focus on the importance of good science and good policy for controlling emerging disease. Yuan said the meeting is a milestone for Sino-U.S. cooperation on emerging infections, laboratory safety and global health and security and would lead to further cooperation. **Xinwen Chen** (Director General/ Principle Investigator, Wuhan Institute of Virology, CAS) said that the Wuhan Institute of Virology, a key sponsor of the workshop, and the operator of China's first BSL-4 high containment laboratory, aims to improve fundamental research in virology in China by doing research to combat emerging infections and outbreaks in China and around the world and to ensure global health security and safety in China. **Yaping Zhang** (Vice President/ Academician, CAS) was not available due to a family emergency so **Qingquan Zhang** (Department of International Affairs, CAS) gave short opening remarks on behalf of CAS. He extended congratulations to the assembled group on behalf of the CAS Bureau of International Cooperation (who provided some of the funding for this meeting) and said that science in China is booming but groups like CAS and NAS need to look back to see how well we have done in the past and provide guidance and better advice in the future.

Linda Saif (Academician, Ohio State University) opened the meeting on behalf of the U.S. National Academy of Sciences (NAS). The institution has several thousand members and 460 foreign associates as affiliates and counts 200 noble prize winners among its members. NAS was established in 1863 to provide independent advice to the U.S. government and has done so for over 150 years including advice on building the Panama Canal, the launch of the first U.S. satellite. NAS was involved in organizing the 1975 Asilomar Conference to establish a common understanding of risk and sensible precautionary measures related to recombinant DNA research. NAS produces two types of reports, workshop proceedings and consensus reports with findings and commendations, with the majority requested by government agencies. This year NAS published reports on research guidelines for human gene editing. She noted that NAS recently reorganized its divisions to form the National Academies of Science Engineering and Medicine, (NAS, NAM, NAE).

After the introduction she explained that the current workshop is designed to help Chinese and American experts better respond to emerging infectious diseases, promote lab and global health biosecurity, and address impediments to cooperation and collaboration between the U.S. and China. She outlined the goals of the current workshop as:

- 1) Establish communication and scientific relationships within the region

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- 2) Exchange knowledge and best practices
- 3) Foster China-U.S. cooperation and collaboration

She noted that CAS and NAS would produce documents summarizing the workshop.

David Relman (Academician, Stanford University) greeted the group on behalf of the U.S. National Academy of Medicine (NAM) president and foreign secretary. He described NAM as a 2000 member organization, created under the NAS charter, focusing on improving health and setting the agenda in medicine and health in the United States. As the chair of the NAM Forum on Microbial Threats he focuses on why infectious diseases occur, the microbe/host environment, and the framework for emerging infectious disease. NAM is also interested in microbial forensics and global health security and is promoting a global health risk framework. He sees three broad areas for further collaboration between the U.S. and China:

- 1) *Emerging infections*, on understanding reservoirs, emergence, disease surveillance, natural versus human origin, data sharing and building capacity for research during public health emergencies
- 2) *Anticipating Risk* in life sciences and medicine related to biotechnology innovation and identifying certain experiments that are too risky to conduct
- 3) *Governance* of science to reduce risk on issues such as centralized versus distributed, costs, learning from the past, and diminishing risk: technical versus social

At the end of the introductions the audience was curious about how NAS and NAM reports are produced and how to ensure that the government will take the advice given. Dr. Relman answered that NAS and NAM produce independent reports U.S. Government and other sponsors; it is up to the sponsor to use or implement the advice in the report. A participant noted that it is important for groups like NAS and NAM to catalyze and convene groups of the best minds to agree on a suitable path forward for others to implement use but noted that CAS is somewhat different than the NAS. CAS advises and convenes but has a basic research mission as well. Perhaps CAS can benefit from NAS experience on how to provide sound advice to the government on science.

James LeDuc (Professor, Galveston National Laboratory) then discussed the technical aspects and challenges of high-containment lab sustainability. Le Duc noted that China is on the verge of opening three BSL-4 (P4) high-containment laboratories and offered thoughts and advice from his perspective as the head of the University of Texas Medical Branch Galveston National Laboratory (GNL). He described high containment labs as valuable resources that often have the best people addressing the most difficult problems of global health. GNL is designed to handle all BSL-4 agents and has been in operation for about a decade. The lab cost 175 million USD to build and had significant ongoing operations expenses independent of the cost of research activities. These include utility costs, training and maintaining the large onsite security force. The operations costs equals about 11.5-15 million USD or about 7-9 % of the construction costs per year. Other key issues of concern are the preparation for and proper management of laboratory accidents. Some accidents are inevitable so it is import to take precaution not only to minimize their occurrence but to manage and minimize he consequences. Labs should have a preexisting plan for many

situations. This should include a communication strategy. Labs are a source of pride for the local community but when things go bad, opinion can change. It is important to build up a 'bank account' of good will by talking about important scientific contributions made at your facility and how valuable research it is to global health, and then be open and transparent if something goes wrong.

When asked how he defends and secures the large budget needed to run the lab year to year, Le Duc said that as costs go up and political leadership changes, it is important to maintain lines of communication between the lab and the community and to politicians. In the U.S. it's not possible to guarantee the budget each year, it is a constant struggle. The U.S. NIH helps offset the some of the costs operations costs, but it is not practical to recoup all of the maintenance money necessary from NIH alone. NIH just provides costs for operations of labs, but all research expenses are funded through individual competitive grants and contracts. About 2/3 of the initial construction costs were provided by NIH and the remainder by the State of Texas and the University, with some philanthropic contributions. The long-term sustainability of the laboratory requires constant vigilance regarding the cost of operations and maintenance.

Session 1 : Gain-of-function research, gene editing, targeting, and delivery and other novel biotechnology was chaired by **Yanyi Wang** (Deputy Director General/ Principle Investigator, Wuhan Institute of Virology, CAS). Participants discussed gain-of-function research, gene editing, targeting and delivery and other novel biotechnology and the recent advances in technology and their applications.

David Relman (Academician, Stanford University) spoke about genome engineering and other life sciences technologies: challenges and opportunities. He said that responding appropriately to emerging infections has not changed, what has changed is the kind of science that we do. Today, scientists have profoundly more ability to study and manipulate life at the genetic level but collectively they have given enough thought to what these new science capabilities mean. He described several process based life science technologies, such as manipulating gene sequences to make or alter viruses. Most RNA viruses can be re-synthesized in the lab so possession of a sequence allows one to make a virus. This suggests that today potential risks include possessing the sequence.

Individuals have increasing power in the life sciences due to the growing ease of joining the enterprise. When considering risk likelihood, harm has many underlying factors, from accidental, benign, unwitting infections or release to, callous or deliberate misuse, the most likely being accidental. Should any experiment not be undertaken because the risks outweigh the benefits? There is currently a vigorous discussion in the U.S. about experiments that enhance the virulence of influenza virus and genetic manipulation associated with gain-of-function research. He suggested that scientists should think about strategies to minimize risk before doing such experiments, and to factor risk into decisions about research plans. Strong scientific leadership is needed and should happen across international borders so that the entire scientific community is involved. Consider the 1975 Asilomar Conference on Recombinant DNA as an example, scientists regulated themselves through and designed

guidelines to ensure safe ways to work with recombinant DNA before an emerging era of research became a more public problem.

The audience asked about the U.S. approval process for gain-of-function research? Relman said that U.S. is in process of determining what to do about this. The audience asked how to engage the public on these issues? He said it is also a challenge. In general most people are confused about the reasons for doing experiments like these; therefore, we need to explain value of the work as well as the risks. An audience member asked if there are U.S. laws on gain-of-function research. Relman said not yet but also that law and regulation can control some research, but any evaluation system will not be able to catch everything, especially a rogue actor. An audience member suggested that we can raise awareness among the scientific community to inspire more scientists to think about the risks before they undertake an experiment to address a scientific problem.

Zhihong Hu (Principle Investigator, Wuhan Institute of Virology, CAS) discussed the construction and rescue of a functional synthetic baculovirus as an example of the capabilities of modern synthetic biology. She noted the massive uptick in reference to synthetic biology in scientific journals this century and the many advances in the field since polio virus was first synthesized in 2002. Her research focuses on baculovirus co-evolution with insect hosts, a system with a very unique lifecycle and could be used as a bio-control agent to control pest outbreaks. She noted that there is a low risk for synthesizing baculovirus because the virus has a large flexible genome that is easy to manipulate where researcher can delete genes without risk. She concluded by asking the audience if the scientific community should regulate synthetic biology and if so how?

The audience asked about reproducibility of her virus synthesis and she said that a very skilled student can synthesize baculovirus in one month; others in two months. An audience member asked her to predict when Zika virus would be synthesized. She said any flavivirus lab could do it. Another member of the audience asked if having the original virus made the process easier? She said yes, it is hard to do from a database sequence and more difficult without the original virus. An audience member asked about safety concerns noting that in the United States the NIH publishes regulations on modified genetic organisms. For example, certain labs can only possess a percentage of the genome, e.g. 30% for small pox.

Wensheng Wei (Professor, Peking University) spoke about high-throughput functional genomics: coding, non-coding and beyond. He focused on gene editing tools and gain of function research in Chinese life science. Gene editing has many applications for drug target identification. He uses gene editing systems, like CRISPR to address bacterial antibiotic resistance, a large problem in China. His research focuses on *Clostridium difficile* bacteria that is more resistant to antibiotics and how synthetic and natural systems for editing can be turned into high throughput strategy to produce better antibiotics. He is also working to produce Zika virus antivirals and is developing high throughput methods to identify non-coding elements on the chromosome to get better tools to study the whole genome. New gene editing tools are useful for addressing drug resistance but techniques still need to get through clinical trials. An audience member asked if he had found any new roles or links for RNA in the infectious disease process. Wei said not yet but that this is a promising area.

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Session 2: Public health response to outbreaks and issues. The session chair **James Le Duc** (Professor, Galveston National Laboratory) noted that the panelists would present three technical talks demonstrating collaborative research concerning dengue, Zika, Ebola, and influenza, including avian influenza and host-pathogen interaction (pathogenesis).

Xia Jin (Principle Investigator, Institute Pasteur of Shanghai, CAS) spoke about observations that dengue immune sera enhances Zika virus infection in human peripheral blood monocytes. He noted that dengue antibodies enhance Zika infection and explained the mechanism and how this is being considered as researchers work to produce a Zika vaccine. Audience members asked if dengue would enhance infection in infants and toddlers and he noted that a baby born of a dengue infected mother will have more severe infection. Noted that there is no epidemiological data now that overlays dengue and Zika infections showing severe Zika in populations with dengue. He also noted that Zika vaccine would come soon and that the Zika vaccine development would be easier than a dengue vaccine.

Rui Gong (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about engineered human antibody constant domain as a candidate against Ebola virus. He mentioned that he did post doc at Frederick Maryland at USAMRIID. He discussed techniques for using therapeutic antibodies as tools for control of viral infection and updated the group on ZMapp and other current neutralizing antibody therapies against Ebola. He explained next steps in the process including animal studies, and evaluation of the “drugability” of the 7c2.

Pei-yong should check this; some missing info

Pei-yong Shi (Professor, University of Texas) discussed antiviral drug discovery and development. He noted his diverse background in science, public health and administration and more recent work on antiviral drug discovery. His presentation outlined antiviral drug discovery strategy to target viral protein, host protein, stimulate immune system, target molecular pathways and target based approach and cell based approach. Another audience member said that in clinical use, the prompt for initiating treatment would likely be a sign, like fever; then asked how he envisioned timing of use in humans? Shi noted that when patient reports to clinic viremia already starts to drop. An audience member asked if the virus will clear faster if you increase the dose? He said that the hope is to get the immune system to kick in to mitigate the disease. The session chair asked about the location of his collaborators. He said they are all over the world and including in Brazil since that is Zika ground zero; they can report progress in real time to Brazilian government to promote transparency.

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James Le Duc (Professor, Galveston National Laboratory) the chair of the session then discussed improving the BSL-4 / P4 laboratory’s role in emergency health response and the importance of communications during a crisis. He changed the focus from technical talks to issues involved in containment labs to talk about communication issues relevant to BSL-4 labs. He noted that GNL has 6 hospital type rooms to treat infected patients while in containment. GNL is one of nine regional facilities that can treat Ebola in the U.S. He asked a

broad question at the beginning of the talk, at what level and for how long should we screen people after exposure? Ebola can live in the body for months after recovery. It's important to take precaution but size the precaution to the risk. Focus should be on laboratories providing transparent, accurate and timely diagnostics of patients during an outbreak or exposure. When the community is not informed the situation tends to get out of hand. Valuable to say what is or is not an issue in advance. Much can be done to manage the perception of risk in advance of high profile situations. Proper education should happen early. Use the right people to do this, Thomas Ksiazek has experience responding to outbreaks going back to 1977. Wave two is addressing the public during the crisis. During a situation leaders should know the facts and have something to say and convey it clearly. We learned a lot about communication dealing with the Ebola case in Dallas, TX. Important to have clear leadership and manage the politicians. In the Dallas case then governor Rick Perry created a taskforce that brought everyone together. Later other problems had to be solved. The patient generated a huge amount of medical waste, eight 55 gallon drums of waste every day. The state of Texas used trucks to transport the waste to UTMB and we disposed of it. Other issues include cleaning secondary facilities and dealing with pets. An outbreak can be a time when you demonstrate the value of your facility to your country, be prepared to help, plan a communication strategy, use a trusted spokesperson and stay on message. Anticipate and welcome involvement of political leaders. Be prepared to provide definitive diagnostics. Train lab and clinical staff on PPE and patient management before the need arises and don't forget waste management.

During the question and answer session a Chinese participant asked GNL's "official" responsibilities during a crisis about problems delegating authority when making official statements. Was it because lab is national lab? Le Duc said that he did not have the responsibility to speak on behalf of the nation did not get paid extra for any of this, it is part of our duty, to the community, state and nation. Had to reprioritize some of our basic research, like vaccine development. That said, extra investment paid off in the good will and support that we received and good statements help preserve the prestige of lab. He also said that the community was very supportive because GNL spends a lot of time communicating and maintaining a dialogue with local leaders, for example GNL did a 20 year economic forecast, noting that GNL generates more than 1 billion for the community. An audience member noted that China was also prepared to respond to Ebola. Government leaders across agencies and ministries had many meetings but the response would have been organized by the Ministry of Health and Family Planning if there was an Ebola case in China. An audience member asked for more details about how to treat clinical medical waste. Le Duc explained that the waste was initially treated with chemicals and not autoclave because Dallas did not have a large enough facility. Others noted that China does not have large a capacity to autoclave clinical waste and needs to come up with a strategy and that in China emergency response is organized by Chinese CDC. Le Duc noted that GNL played a supporting role, U.S. CDC had primary responsibility for the national response but because the case happened in the state of Texas GNL naturally had a larger role. A Chinese participant noted that the system is different than in China but noted that if anything happens in Wuhan, then first sample would go to Hubei province CDC first.

The first day ended with a round Table Discussion chaired by **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) and **James Le Duc** (Professor, Galveston National Laboratory). The chairs reviewed the discussion from day one. Yuan noted that excellent science is going forward in China and the United States but it is raising some policy issues at the national and international level. How do we work together to create regulations to that will not hinder the good science going on? He sees many opportunities for collaboration and international exchange. How do we educate students on technical issues but help them understand the context of global challenges going forward. He noted the BSL-4 labs about to open in China and asked about to best share virus stocks, reagents and tools necessary to do the critical scientific work the labs were designed to do?

First Yuan noted that the day one presentations combating emerging diseases control as a good basis for our future communication and collaboration; the U.S and China should find a common interest in this area. Second he noted that NAS and NAM and CAS, while different organizations, have the same objectives. Promote science for development of the world. Our communities have different ways to approach crisis; China should do a better job explaining our system and what happens when there is a problem in china. We have lots of process in place but we can learn a lot from the American side on understanding effective crisis management. Third he is concerned about how scientists can manage advances of new technology. Scientists have mostly used modern technology and science to do good work but today some research poses risks that should be acknowledged. How do we understand risks and prevent accidents or misuse while paying attention to the real benefits of the research. Fourth he noted that scientists have a duty to help the public understand the value of their work and demystify their research.

An audience member agreed with the theme of his summary, and said that the problem of controlling emerging infections is an interesting problem that we share. In important factor is how do scientists better understand natural disease reservoirs and how do we interpret sequence data from nature? Today it is easy to generate sequence but it remains hard to understand what a given means regarding phenotype. What other kinds of information do we need to collect? We should also think about the kinds of experiments that warrant further discussion or review and get ahead of this before outsiders challenge the rational to do the science.

A Chinese participant said that we know that bats and birds host potential pathogens and that the scientific research community is working across China to map reservoirs. We have generated a lot of sequence information over the past three or four years but we don't understand why diseases emerge when they do; more collaboration on reservoirs is needed. There is a lot China can learn from the GNL, but not just scientifically; transparency and trust is important. We want the world to understand what we are doing. P4 labs are huge investments; they should be collaborating. It would be good to see institutional level collaboration between NIV and GNL we could have the CAS spend money to help support the collaboration. CAS has several mechanisms to support international engagement and collaboration including finding international exchanges and fellowships of people from

abroad to come to China. Scientists in China can propose international projects to CAS and CAS can fund, also on the ecology and evolution of infectious disease. CAS is working with the U.S. NSF and NIH, the program manager will visit NIV next month. We can use all these resources.

Another Chinese participant said that the group should be most interested in pathogenic viruses and should focus on significant viral threats to human health. China CDC is working to discover unknown pathogens. It was also stated that the U.S. and China should share experience on emergency response. Scientists will have to work with the policy makers to prepare for infectious disease emergencies. This might be a topic for a joint report.

A Chinese participant noted that sharing viruses even domestically is difficult and asked how we can overcome this? They have created a consortium to share samples within China, but sharing samples across international borders is difficult. There are many issues at the policy level, for example shipping is a big problem especially live virus; however there are techniques to ship parts of the viral genomes. More science can be done to overcome the policy problems. An American participant noted that the group is focused on public health and science but should remember to engage the veterinary and the agriculture production sector in the spirit of One Health. Like long-standing influenza collaborations, we can expand this collaboration.

Yuan said that on day 2 the group would hear more about China's high level biosafety facilities and discussions about biosafety, regulation and management in both countries. These topics might also be the basis for future collaboration. To better accommodate collaboration we should come up with the right kind of linkage between our groups. After the meeting we should identify priority considerations and write remarks to our academy presidents about what our two academies can do together to provide a channel and bridge for future.

Day 2

Session 3: Emerging infectious diseases and global health security. The chair, **Pei-yong Shi** (Professor, University of Texas, GNL) noted that the session would cover anti-viral countermeasures (strategy and R&D) and improving the high containment laboratory's role in emergency health response.

George Gao (Academician, Institute of Microbiology, CAS) discussed biosafety, biorisk, and biosecurity pathogens and human behavior.

that they have no evidence but are still doing sequencing. An audience member asked if Gao was trying to say that bats carry a MERS-like virus and what might be the real host of MERS, bats or camels? Another also asked if we are likely to see a flu like MERS virus in the future. Gao said that camels are just intermediate hosts and that he thinks that MERS may evolve to be more flu-like in the future.

Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University) spoke about the Chinese One Health strategy for responding to emerging infectious diseases (EIDs). A One Health strategy that considers all related contact between humans and animals is an effective way to combat and possibly predict EIDs. Many are actively working on One Health in Guangdong province and he described several studies in which he was involved with.. He explained that One Health is a particularly appropriate strategy in Guangdong. Because of the emphasis on freshness in Cantonese food, animals are kept alive until just before they are consumed. This makes Guangdong province, and especially the live animal markets a hotbed of disease outbreaks. 70% of Emerging Infectious Diseases are vector borne and zoonotic diseases. Guangdong is vulnerable to EIDs due to its location, culture and high population. The first SARS outbreak was in Guangdong. Infected bats came into contact with civet cats and then the virus evolved and jumped to humans. Another reemerging infectious disease of concern in the region is brucellosis, associated with imported sheep and contacts with humans. Lu also detailed the five waves of H7N9 outbreak in China. Live poultry markets were key to spread and 95% of human cases followed exposure to live poultry. He noted a recent novel mutation (in March 2017) that showed a high pathogenicity avian flu. China has examined the impact of closing the live poultry markets to curb future outbreaks but noted the negative impact on local economies. He cited an article that details China's response to EIDs and the need for a One Health approach in future responses.¹ An audience member said that people in Guangdong eat "everything" which poses a unique problem.

Zhengli Shi (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about the evolution and pathogenesis of bat SARS like coronavirus. Shi is working on corona virus and other emerging infections and said that bat SARS-like corona virus (SL CoV) could be the next pandemic. He described the cases and countries involved in the 2003 outbreak. For bat corona virus to cause the next SL CoV outbreak many factors will have to be involved. To examine this possibility he is looking at the pathogenesis of SL CoV in transgenic mice. It replicates very well in mice and human tissue. The virus can easily enter human cells but in the animal model the virus has less pathogenesis; this is good news. His research shows that some bat SL CoV have potential interspecies transmission to other animals and humans. An audience member asked if one could clear an infected bat of this virus? Zhengli said that he tried this with Nipah virus in bats but bats could produce antibodies, clear within seven days. In nature we found that bats produce antibodies to some viruses but not all. SL CoV can exist in bats for several months. An audience member said that you cannot be sure that this pathogen can cause human disease and that more data are needed. Infections are very mild and there is no clinical syndrome. Further studies are needed.

¹ "A brief historical overview of emerging infectious disease response in China and the need for a One Health approach in future responses" Jiahai Lu, Gabriel J. Milinovich, Wenbiao Hu, One Health

Mifang Liang (Principle Investigator, National Institute for Viral Disease Control and Prevention) discussed the epidemiological characteristics of severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery to current knowledge. of SFTS in china recently emerged; it was discovered in 2009 and 2010.

Emergency of SFTS in China, 2009-2010



She said that SFTS is a new emerging infection and it has been very hard to find the virus in nature. It was only recently added to the ICTV catalog. In the catalogue it is described as a highly pathogenic phlebovirus in the family bunyaviridae. It is now listed by the WHO as a special pathogen of concern. She recently mapped the genome structure of the virus. It has been determined that it is transmitted by ticks and person to person. The number of cases are increasing every year but the case fatality rate is decreasing every year. Most patients are from the countryside about 86% are farmers over 10,000 cases in 25 provinces were reported since the first discovery of SFTSV. Peak time for exposure and infection is May to Aug due to weather.

Ticks may act as a major vector for SFTSV transmission and domestic animals are widely infected by SFTSV, but reservoirs or hosts are not known. Person to person transmission of SFTSV has occurred through direct contact with patient blood containing high virus load. An audience member asked how do people become infected? Mifang said that is unknown, so far only local endemic investigations and we have isolated virus from ticks. They have not done studies to understand how humans have become infected. She did note that most patients do not have tick bites or exposure recently to slaughtered animals. In the future they plan to do experiments to determine how humans get the virus.

Linda Saif (Academician, Ohio State University) talked about animal coronaviruses as a global threat to humans and animals. Corona viruses continue to evolve and emerge globally as a cause of fatal respiratory and enteric infections of young animals and humans. Saif's talk covered SARS and MERS corona virus. She explained the basic morphology of the virus and the diversity of avian and mammalian CoVs. Corona viruses are genetically diverse due to frequent mutation and recombination. The viruses are transmitted from wild ruminants to humans. She described how BCoV MERS CoV and SARS CoV infect their hosts and whether MERS infects camels and humans and vice versa. She provided data demonstrating that the elderly humans on statins, for hypercholesterolemia are more susceptible to Noro virus and to MERS and SARS. She is concerned that SARS will reemerge from an animal reservoir and cause another pandemic. It is important to determine how MERS CoVs is transmitted so the scientific community can better target the virus and prevent such a

pandemic. Right now the strategy is to manage and reduce contact with infected camels or camel products but there are many unresolved questions. The epidemiology of MERS CoV infections in camels and its zoonotic transmission is poorly understood, but it resembles respiratory coronavirus infections in cattle. No vaccines have been licensed for respiratory CoV infections.

An audience member asked about the closest relative to MERS? Saif stated it is a swine virus from Hong Kong, in cat, also sparrows and other bird strains. An audience member said that they were trying to determine if all corona viruses originated from bats. What is the origin of swine corona virus? Saif said we don't know, but added that PERS died out in Europe. The theory is that it was not completely swine adapted. A Chinese participant suggested that if SARS is gone why should the government keep doing SARs research? What is your suggestion on how to prepare for another attack of SARs. Saif said that labs should keep all reagents available as the reservoir is still there. We still see many spillover events, only when virus acquires ability to go from human to human will it result in really heavy morbidity and mortality. It is important to stay vigilant. An audience member asked about farmed civet cats relationship to spread? Saif said there is evidence of interspecies transmission between civets and bats and that this is another argument for closing live animal markets; if we get rid of civets in live animal markets we could be able to stop transmission. An audience member supported this statement and said that Chinese data supports transmission between bats and civets in a farmed environment but some studies say there is no SARs CoV in farmed civets.

Chengfeng Qin (Professor, the Academy of Military Medical Sciences) described existing weapons against the emerging Zika virus. Chengfeng discussed the discovery and spread of Zika from Africa to more recent regional epidemics and detailed isolating the Chinese Zika virus strain. He published a paper in January 2016 about Zika in China and is working with Pei-yong and George Gao to do the work. He noted that there is currently no case of Zika infection reported in mainland China but there are examples of several imported cases. He is looking for further collaboration and communication on Zika with American researchers. Audience members noted that much of the population of Brazil might have dengue already and asked about the relationship between dengue and Zika. Dr Qin responded to questions related to how the antibodies interact?

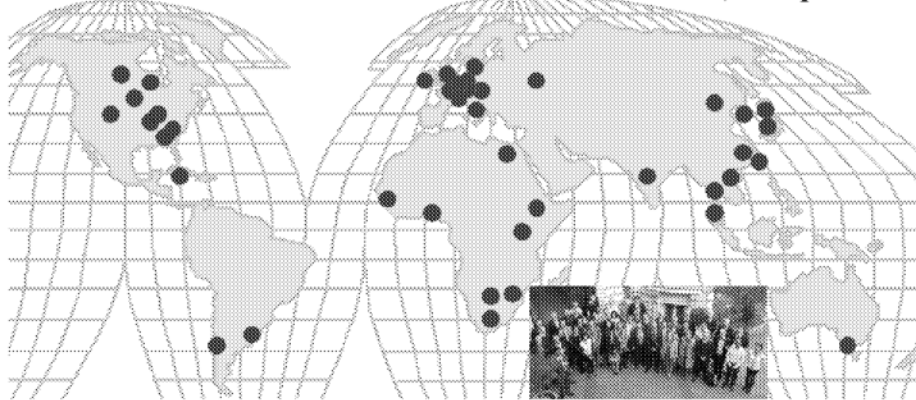
David Swayne (Director, USDA Southeast Poultry Research Laboratory) discussed avian influenza at the animal-human interface: global challenges for scientific contributions to control. Swayne talked about the OIE Network of Expertise on Animal Influenza (OFFLU) and the importance of combating the influenza virus at the animal human interface. He then discussed specific epidemic cases. Swayne works to combat animal flu issues and also implements the One Health concept to prevent animal health issues from becoming human health problems. He said that animal flu continues to be a threat to humans, with 453 recorded deaths just this year. He reported a significant number of H3N2 infections at agricultural fairs in the U.S. and 534 H7N9 deaths in china this year. He explained that we know little about what will cause the next pandemic. OFFLU works with WHO and OIE to track outbreaks and prepare for epidemics and pandemics; the group helps WHO identify appropriate seasonal flu vaccine candidates by providing information seasonal and pre-pandemic animal flu strains.

1. OFFLU Network of Animal Influenza Experts

OIE (World Organization for Animal Health) and

FAO (Food and Agriculture Organization of the United Nations)

Animal InFLUenza Network: 6 continents, 26 countries, 60 experts



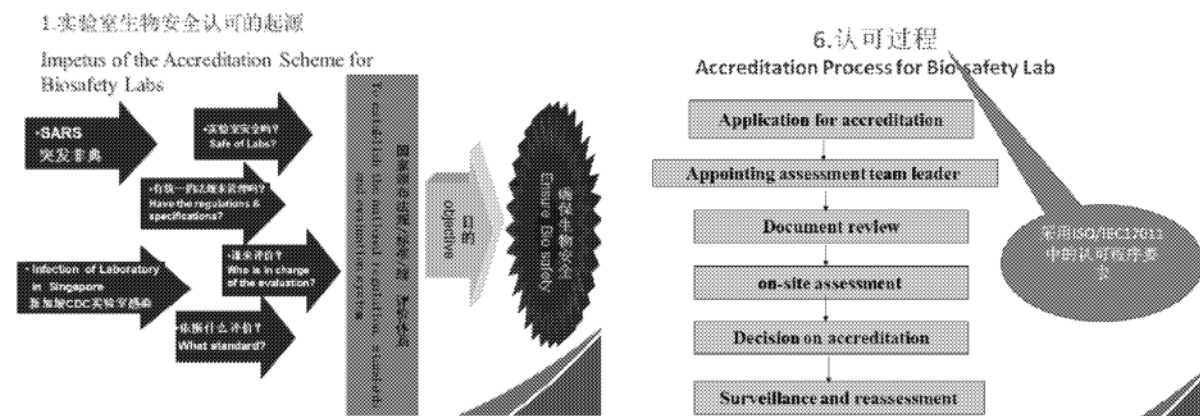
Swayne described several avian influenza vaccines strategies and the many different seed strains. A major function of the OFFLU is to help analyze data to make the decision on what to produce and when. An audience member asked about reasons for changes to the strains over time and if he attributed changes to vaccination or natural drift over time? Swayne did not have specific explanation for the changes, but noted that we see different types of changes in countries that are doing vaccinations. Before large fowl vaccination programs, changes were random, now they are different.

Gong Cheng (Professor, Qinghua University) presented his research on non-structural protein 1: a key for flavivirus transfer from host to vector. The discussion centered around flavivirus, particularly dengue and the dengue virus transmission process. He is studying transmission of dengue from human to mosquito, and hypothesizes that factors in human blood affect transmission. **Pei-yong Shi** (Professor, University of Texas) discussed the rapid response to Zika virus emergence including diagnostics and the state of vaccine development. He discussed the devastating clinical outcomes of Zika virus infection: microcephaly. He noted that virus can persist in the male sexual reproductive tract well after clinical symptoms cease and that 80% of individuals are asymptomatic throughout disease. There are two way to diagnose Zika now: detect virus or detect antibodies. He added that there are two Zika vaccines in phase 1 trials and discussed platforms to manufacture inactivated Zika vaccine and experiments to test vaccines. One of the vaccines has been proven to protect monkeys from Zika infection but more work is needed.

Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment was chaired by **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS). Presenters during the session discussed high containment labs in China and the U.S, community relations and public communication, biocontainment labs and the importance of clinical facilities, biocontainment maintenance and operations, outbreak response and the importance of reference collections and reagents.

Peijun Zhai (Division Director, China National Accreditation Service for Conformity

Assessment) discussed the process of accrediting biological safety labs in China. He first detailed China National Accreditation Service (CNAS) the authorized accreditation body in China. CNAS has more than 1000 members and 4000 technical experts on call with 260 technical staff. CNAS is largest lab accreditation body in the world. The SARs outbreak provided the impetus for biosafety lab accreditation in China. He listed the laws and regulations and standards related to biosafety and for biosafety labs in China and described the accreditation process for biosafety labs. Accreditation schemes for labs for biosafety and laboratories start with the Chinese code for laboratories – General Requirements for Biosafety GB 19489². Currently 71 biosafety labs of various types are accredited by CNAS in China. The objective is to ensure biosafety of all labs. Article 20 of national accreditation says that labs at the BSL-3 and BSL-4 levels require national accreditation in China.



An audience member asked whether unannounced inspections take place during the five-year period after initial accreditation. Peijun said that during the interval from assessment to reassessment CNAS does surveillance at the facility on a regular basis. Usually, the first inspection takes place in after 1-1.5 years and then approximately every six months. Finally, he discussed the difference between certification and accreditation.

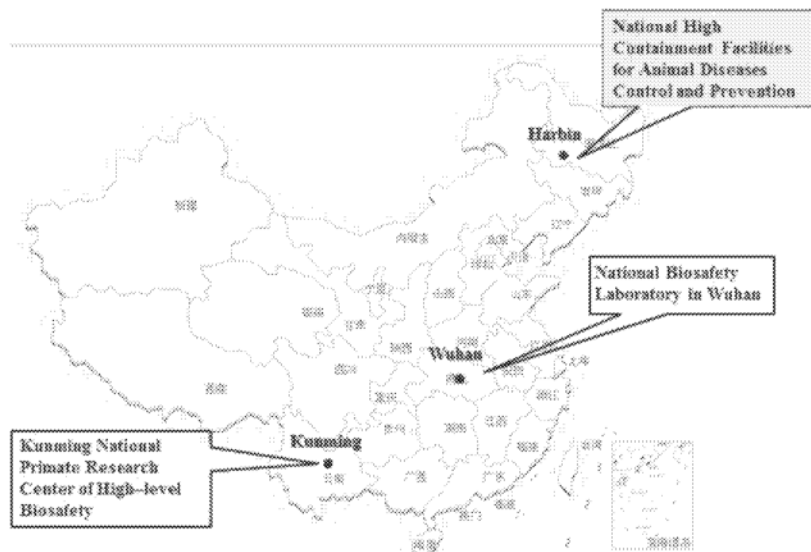
Tom can review

Thomas Ksiazek (Professor, Galveston National Laboratory) talked about biocontainment operations and maintenance and UTMB GNL and training personal at other containment facilities. Ksiazek discussed biocontainment operation and maintenance at the GNL, noting that a lot goes on behind the scenes. The cornerstone is compliance with the current version of the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) guidelines, the select agent law adds additional requirements and yearly inspections. Key concerns of BSL-4 lab operations are reoccurring expenses, like security costs, utility payment and training. GNL is unique in that it is operated by a university (the Boston University National Emerging Infectious Diseases Laboratory is not open yet). Described the unique safety, maintenance and information technology operations at the lab. GNL works with operators and researchers from many other countries, it had maintained a worldwide biosafety training center, but fund for the center has recently dried up and directors are working on options to reconstitute the program. Still have some interaction with Chinese institutes like NIV. An audience member ask how long before person can operate in the high containment space unsupervised? Ksiazek said it takes about 100 hours but it depends a lot on the individual. An audience member asked how countries with limited resources, like in Africa, undertake this

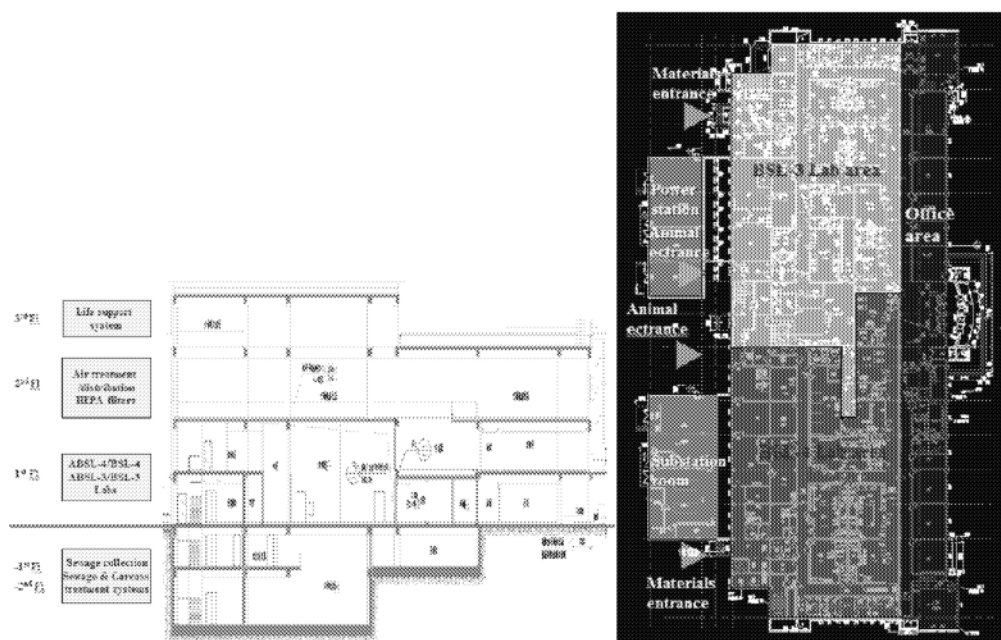
² <http://www.codeofchina.com/standard/GB19489-2008.html>

research. Ksiazek said don't set up a BSL-4 in that kind of environment set up a BSL-3 and use additional personal protective equipment (PPE). An audience member asked about GNLs precautions against flooding and severe weather and their waste management procedures and record back up? Ksiazek said that Hurricane Ike did inundate Galveston Island but that the building was not affected; GNL had power and acted as a life boat for campus. Waste stream is done as standard disposal for these facilities. Also GNL incinerates solid waste and everything is autoclaved. GNL has a reference center with emergency backup power and he is reasonably sure that the viruses would survive a problem. Some labs are in rural areas some are in population centers. High containment facilities have shown that they can operate safely in population areas.

Zhigao Bu (Director General/Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences) discussed the design, construction and operation of Chinese national high containment facilities for animal diseases control and prevention. Zhigao said that Harbin Veterinary Research Institute is the most active institute for animal disease control in China. It is important to have such a facility because China has a significant percentage of the worlds livestock (50%, 800m of the worlds pigs for example), and numerous agricultural health challenges. He described SARs as a huge shock to the sector. After the outbreak In 2004 China launched plan to build three BSL-4 labs; in Harbin, Kunming and Wuhan. The Harbin lab was constructed for animal disease control and prevention.



He said that when they started, they had no idea how to construct BSL-4 lab buildings and facilities so formed lots of partnerships. They worked closely with Australian animal lab, with labs in Japan and Canada, Ames Iowa and Kansas State University in the U.S., Hamburg and Reims in Germany and the lab in Lyon, France. He showed pictures of the construction HCFAD.

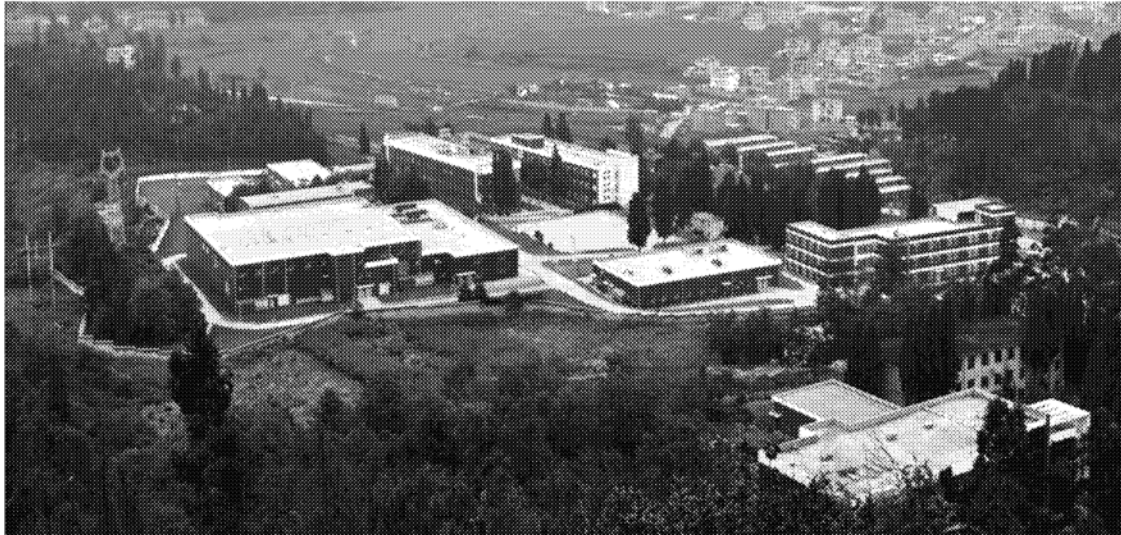


Construction of the Harbin lab was completed in 2016. The lab is composed of 5 floors with two below ground. The Lab has nine working areas for BSL-4 and 10 for BSL-3. He discussed security measures for the facility, including access and monitoring of personal. They hope to have CNAS certification by the end of this year.

An audience member asked which pathogens they anticipate studying at in the BSL-4 portion of the lab? Zhigao said that is currently difficult to answer, interested in many pathogens, but need to get approved for each by Ministry of Health...and it can be difficult to get approved. They work with many pathogens at the BSL-3 portion of the lab already; Brucella, flavivirus, SARs, and avian influenza. An audience member pointed out that Zhigao's photos showed workers using two types of suits in the lab. He said that the blue suits are made in China and the white ones are made in France. He stated that there is a big difference in the price between the domestic and foreign manufactured suits. Chinese suits are not yet certified for use.

Longding Liu (Institute of Medical Biology Chinese Academy of Medical Sciences)
[represented Dr. Yunzhang Hu, the Principal Investigator and the head of the BSL-4 lab at the

Kunming Institute of Medical Biology who was unable to attend the meeting.] Longding spoke about the Kunming Institute of Medical Biology National Primate Research Center of High-level Biosafety. Like Zhigao he said that the lab was created after SARS in 2003 as an important resource for basic research on animal and human disease.



The facility was originally designed as a production facility for vaccines. He said at first they did not have any idea on how to create a BSL-4 lab. The lab cost 300m CNY and includes almost 3000 sqm of BSL-4 workspace. The campus includes a monkey breeding facility built 15km from Kunming city. Longding described the security for the facility, and showed photos of BSL2, BSL3, and 4 suites. In the 3 and 4 rooms they use secondary negative pressure cabinets for housing monkeys. Like Harbin they have an extensive staff for maintenance and engineering support, air handling and cleaning.

ABSL/BSL-4 Labs



The new Ag BSL-4 lab and existing vaccine R&D platform will make the campus a more efficient producer of vaccines for infectious disease.

An audience member asked about his thought on collaboration? He said that the facility doesn't have any experiments ongoing in BSL-3 right now but that they are seeking collaboration to facilitate work in the BSL-3 and BSL-4 spaces.

Session 5: Biosafety, biosecurity and bioethics chair **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) introduced the session on new technology for laboratory biological risk management, improving response to incidents at the lab (fire, police, environment release and paramedic), improving biosafety and biosecurity training, laboratory leadership, and culture and ethics.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) described the Wuhan Institute of Virology BSL-4 laboratory. He noted that some of the participants would visit the facility the following day. He said that he hoped to have a license for the lab soon. He stated that they had learned a lot from SARS but China still has a weak understanding of dual use capabilities. Scientists have different motivation for doing research. Most scientists around the world who do dual-use and gain-of-function research have good reason but their needs to be a balance. He asked how to make this balance and suggested several questions that might be asked when considering benefit and risk of certain experiments. Law and regulation cannot answer all these questions. We must first consider biosafety in the laboratory. China has a biosafety legislation framework which includes regulations measures and codes related to all aspects of biosafety. But not everything can be easily described, like whether to do certain experiments. He listed laws and ethical codes that could guide biomedical research and bioethics and discussed how laws and ethics overlap in biology and areas of bio ethics related to medical experiments on people. Dr Yuan further noted that CAS has its own bio science ethics committee. He suggested that we combine biosafety, biosecurity, and bioethics as a way to address bio risk more broadly. He suggested that the life science community needs to establish science code of conduct and promote joint work on ethics, and create a culture and philosophy of ethics. A Chinese participant said that in China we teach biosafety courses and therefore, students at CCDC have strong ethical concepts. They know the dangers inherent in BSL-3 and 4 labs. An audience member suggested that biosafety and biosecurity are different and asked which is most important for China today? Zhiming said that they are equally important and should be giving significant attention.

Thomas Ksiazek (Professor, Galveston National Laboratory) discussed regulatory issues affecting the operation of a functional high containment lab including obtaining, shipping, maintaining and exchanging high hazard pathogens in today's regulatory environment. Dr. Ksiazek focused on biosafety and biosecurity in the United States; he said that the U.S. was the first country that had a national standard for biosafety. The impetus for this began at the Asilomar conference in 1975. In 1981 the U.S. CDC produced the first Biosafety in Microbiological and Biomedical Laboratories (BMBL) handbook that categorized pathogens into risk groups; they are now working on the 6th addition of the BMBL. It sets the operating principles for labs. When asked he says that he "doesn't do safety for a living but does safety to keep on living". He said that there is not enough focus on how safety regulations effect the science that the labs are designed to do. One of his key concerns is shipping samples; in the U.S. it was simple until about 5 years ago. Shipping of pathogen isolates is becoming almost impossible and really expensive. Now World Courier is the only group left that still ships

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agents in the U.S. He is seeking to get the USG to pressure FedEx to start shipping again. Another problem is that aircraft captains have the right to refuse dangerous goods shipments; the pilot has the final word. The regulations that have been put in place since 9/11 are mostly about security, not safety. It was really difficult, during the 2014 Ebola epidemic, to get samples from West Africa; the U.S. chartered a jet to get Ebola isolates back to U.S. and the British Government chartered a ship. It has also become difficult to get permit to operate a reference facility in the U.S. In addition we have to deal with regulators and intellectual property issues. Collectively we can make a difference; scientists need to address the trend of over securitization. A Chinese audience member said that CCDC internal movement between CCDC and CAS is really difficult as well with lots of bureaucratic hurdles. China only uses one group for international shipping.

David R. Franz (Former Commander, US Army Medical Research Institute of Infectious Diseases) spoke about laboratory leadership, responsibility and progress. He said that his goal as a institutional leader was to create a functional ethical organizational cultural so the institution could do good work. In the laboratory environment the key is to balance regulation with progress. He stated that biosafety is much easier than biosecurity, because it is difficult to define the risk or to measure success in biosecurity. The NAS “Fink committee” report *Dual-Use Research in an Age of Terrorism* was ahead of its time. The committee concluded that education and awareness are key to addressing the threat. Following that study, the U.S. the government put together the National Science Advisory Board for Biosecurity (NSABB) security advisory board. Franz discussed the evolution of biosecurity in the U.S. only one death—and not from a true select agent—in a US Select Agent program, and three deaths pre 1969 before the U.S. offensive bio program was halted. He compared that to more than 700,000 hospital acquired infections and 400,000 deaths due to medical mistakes in recent years. He pointed out that leaders and scientists in the high-containment lab community must understand that the actions by a few affect the many. A negative incident in one laboratory can impact our ability to function in many laboratories. An audience member asked how to balance security with transparency and how to build trust when accidents happen all the time? What about deep rooted mistrust due to social structure? What is your strategy to build trust with the Chinese? Franz said it is important to create “nodes of trust” globally between individuals. Building networks and nodes is the model we use at NAS is called “Track II diplomacy” between experts in the U.S. and other countries. He noted that we can do the same thing within any country by reaching out to others and forming personal connections but there is no perfect solution in to eliminating biosafety and, particularly, biosecurity incidents. A Chinese participant agreed that more enlightened leadership is key for safety and for productivity and there is a need to build trust between people, directors and workers. But, he asked, for P4 labs, how could we collaborate together to be more productive? The participant suggested that collaboration between the three new labs in China.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) presented conclusions from the meeting and led a discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on Emerging Infections, Laboratory Safety and Global Health Security

Franz Presented summary thoughts from the meeting to the group. He identified some key topics:

- Role of scientists in balancing regulation, safety, security and productivity
- Popularizing Science (helping the non-science community understand our role)
- Emerging infections (reservoirs, natural populations and sequence data)
- The importance of transparency within and between countries
- Importance of trust within and between organizations and nations
- One Health (animal health, the economy, human health)
- Responsibility of the science community to self-police and in some cases, regulate

He also presented some possible joint project ideas which had arisen during the meeting:

- Direct cooperation between CAS and NAS
 - Institutional partnering and collaboration
- Joint Table Top Exercise detailing hypothetical response to an outbreak
- Response training
- How to make decisions regarding “Dangerous Research” on certain pathogens and gain of function research in general
- A joint manuscript of shared values and concerns
- Overcoming barriers to sharing strain collections and transport of pathogens
- Exchange and training of students

The audience suggested other issues including exchanging reference strains as many strains in China are interesting to researchers in other parts of the world. NAS and CAS representatives could jointly write a paper addressing how best to facilitate strain exchange. Others said that would be very useful but we must follow international guidelines like the Nagoya Protocol on Access to Genetic Resources. Also domestic property rights become an issue; if an outbreak occurs in a third country and we isolate virus, the virus belongs to country where sample is from. This makes exchange difficult.

Zhiming offered several additional suggestions.

- We could create an official agreement between institutions promoting institutional collaboration.
- The two academies could encourage scientists to create a culture of trust, safety and bioethics. NAS and CAS should provide a platform for cooperation.
- The U.S. could do more Chinese scientist training and train the trainer training for and Chinese institution staff and students.
- He also supported efforts to improve the free movement of sample material.
- He stated that the NAS and CAS will write a joint report and from that we can extract important information to provide to CAS and NAS leadership.
- CAS will set up a core group for NAS to talk to about future activities. NAS will work with CAS to bring scientist to the U.S. to continue the discussion.

In discussions after the meeting the chairs decided on the following list of near terms action

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items as priorities:

- Scientist exchange and training, particular for BSL-4 laboratories.
- Joint BSL-4 research projects that are beneficial for both US and Chinese scientists
- A memorandum between UTMB and Wuhan Institute of Virology (and other two BSL-4 laboratories) for both long-term and short-term collaboration and partnership.

Longer terms priorities:

- Enhancing our ability to share strain collections
- Joint white paper that each side could use to educate political leaders and others.
- Promote international collaboration via China-US joint projects,
- Joint training programs
- Joint manuscript between individuals and institutions
- Both academies support trust building and BS/BS at labs and by scientists.

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19 2017
Wuhan, China

Meeting Report

During the welcome session the Chair of the meeting for the Chinese Academy of Sciences (CAS) **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) thanked the assembled audience of about 100 experts and noted that the meeting would focus on the importance of good science and good policy for controlling emerging disease. Yuan said the meeting is a milestone for Sino-U.S. cooperation on emerging infections, laboratory safety and global health and security and would lead to further cooperation. **Xinwen Chen** (Director General/ Principle Investigator, Wuhan Institute of Virology, CAS) said that the Wuhan Institute of Virology, a key sponsor of the workshop, and the operator of China's first BSL-4 high containment laboratory, aims to improve fundamental research in virology in China by doing research to combat emerging infections and outbreaks in China and around the world and to ensure global health security and safety in China. **Yaping Zhang** (Vice President/ Academician, CAS) was not available due to a family emergency so **Qingquan Zhang** (Department of International Affairs, CAS) gave short opening remarks on behalf of CAS. He extended congratulations to the assembled group on behalf of the CAS Bureau of International Cooperation (who provided some of the funding for this meeting) and said that science in China is booming but groups like CAS and NAS need to look back to see how well we have done in the past and provide guidance and better advice in the future.

Linda Saif (Academician, Ohio State University) opened the meeting on behalf of the U.S. National Academy of Sciences (NAS). The institution has several thousand members and 460 foreign associates as affiliates and counts 200 noble prize winners among its members. NAS was established in 1863 to provide independent advice to the U.S. government and has done so for over 150 years including advice on building the Panama Canal, the launch of the first U.S. satellite. NAS was involved in organizing the 1975 Asilomar Conference to establish a common understanding of risk and sensible precautionary measures related to recombinant DNA research. NAS produces two types of reports, workshop proceedings and consensus reports with findings and commendations, with the majority requested by government agencies. This year NAS published reports on research guidelines for human gene editing. She noted that NAS recently reorganized its divisions to form the National Academies of Science Engineering and Medicine, (NAS, NAM, NAE).

After the introduction she explained that the current workshop is designed to help Chinese and American experts better respond to emerging infectious diseases, promote lab and global health biosecurity, and address impediments to cooperation and collaboration between the U.S. and China. She outlined the goals of the current workshop as:

- 1) Establish communication and scientific relationships within the region

- 2) Exchange knowledge and best practices
- 3) Foster China-U.S. cooperation and collaboration

She noted that CAS and NAS would produce documents summarizing the workshop.

David Relman (Academician, Stanford University) greeted the group on behalf of the U.S. National Academy of Medicine (NAM) president and foreign secretary. He described NAM as a 2000 member organization, created under the NAS charter, focusing on improving health and setting the agenda in medicine and health in the United States. As the chair of the NAM Forum on Microbial Threats he focuses on why infectious diseases occur, the microbe/host environment, and the framework for emerging infectious disease. NAM is also interested in microbial forensics and global health security and is promoting a global health risk framework. He sees three broad areas for further collaboration between the U.S. and China:

- 1) *Emerging infections*, on understanding reservoirs, emergence, disease surveillance, natural versus human origin, data sharing and building capacity for research during public health emergencies
- 2) *Anticipating Risk* in life sciences and medicine related to biotechnology innovation and identifying certain experiments that are too risky to conduct
- 3) *Governance* of science to reduce risk on issues such as centralized versus distributed, costs, learning from the past, and diminishing risk: technical versus social

At the end of the introductions the audience was curious about how NAS and NAM reports are produced and how to ensure that the government will take the advice given. Dr. Relman answered that NAS and NAM produce independent reports U.S. Government and other sponsors; it is up to the sponsor to use or implement the advice in the report. A participant noted that it is important for groups like NAS and NAM to catalyze and convene groups of the best minds to agree on a suitable path forward for others to implement use but noted that CAS is somewhat different than the NAS. CAS advises and convenes but has a basic research mission as well. Perhaps CAS can benefit from NAS experience on how to provide sound advice to the government on science.

James LeDuc (Professor, Galveston National Laboratory) then discussed the technical aspects and challenges of high-containment lab sustainability. Le Duc noted that China is on the verge of opening three BSL-4 (P4) high-containment laboratories and offered thoughts and advice from his perspective as the head of the University of Texas Medical Branch Galveston National Laboratory (GNL). He described high containment labs as valuable resources that often have the best people addressing the most difficult problems of global health. GNL is designed to handle all BSL-4 agents and has been in operation for about a decade. The lab cost 175 million USD to build and had significant ongoing operations expenses independent of the cost of research activities. These include utility costs, training and maintaining the large onsite security force. The operations costs equals about 11.5-15 million USD or about 7-9 % of the construction costs per year. Other key issues of concern are the preparation for and proper management of laboratory accidents. Some accidents are inevitable so it is import to take precaution not only to minimize their occurrence but to manage and minimize he consequences. Labs should have a preexisting plan for many

situations. This should include a communication strategy. Labs are a source of pride for the local community but when things go bad, opinion can change. It is important to build up a 'bank account' of good will by talking about important scientific contributions made at your facility and how valuable research it is to global health, and then be open and transparent if something goes wrong.

When asked how he defends and secures the large budget needed to run the lab year to year, Le Duc said that as costs go up and political leadership changes, it is important to maintain lines of communication between the lab and the community and to politicians. In the U.S. it's not possible to guarantee the budget each year, it is a constant struggle. The U.S. NIH helps offset the some of the costs operations costs, but it is not practical to recoup all of the maintenance money necessary from NIH alone. NIH just provides costs for operations of labs, but all research expenses are funded through individual competitive grants and contracts. About 2/3 of the initial construction costs were provided by NIH and the remainder by the State of Texas and the University, with some philanthropic contributions. The long-term sustainability of the laboratory requires constant vigilance regarding the cost of operations and maintenance.

Session 1 : Gain-of-function research, gene editing, targeting, and delivery and other novel biotechnology was chaired by **Yanyi Wang** (Deputy Director General/ Principle Investigator, Wuhan Institute of Virology, CAS). Participants discussed gain-of-function research, gene editing, targeting and delivery and other novel biotechnology and the recent advances in technology and their applications.

David Relman (Academician, Stanford University) spoke about genome engineering and other life sciences technologies: challenges and opportunities. He said that responding appropriately to emerging infections has not changed, what has changed is the kind of science that we do. Today, scientists have profoundly more ability to study and manipulate life at the genetic level but collectively they have given enough thought to what these new science capabilities mean. He described several process based life science technologies, such as manipulating gene sequences to make or alter viruses. Most RNA viruses can be re-synthesized in the lab so possession of a sequence allows one to make a virus. This suggests that today potential risks include possessing the sequence.

Individuals have increasing power in the life sciences due to the growing ease of joining the enterprise. When considering risk likelihood, harm has many underlying factors, from accidental, benign, unwitting infections or release to, callous or deliberate misuse, the most likely being accidental. Should any experiment not be undertaken because the risks outweigh the benefits? There is currently a vigorous discussion in the U.S. about experiments that enhance the virulence of influenza virus and genetic manipulation associated with gain-of-function research. He suggested that scientists should think about strategies to minimize risk before doing such experiments, and to factor risk into decisions about research plans. Strong scientific leadership is needed and should happen across international borders so that the entire scientific community is involved. Consider the 1975 Asilomar Conference on Recombinant DNA as an example, scientists regulated themselves through and designed

guidelines to ensure safe ways to work with recombinant DNA before an emerging era of research became a more public problem.

The audience asked about the U.S. approval process for gain-of-function research? Relman said that U.S. is in process of determining what to do about this. The audience asked how to engage the public on these issues? He said it is also a challenge. In general most people are confused about the reasons for doing experiments like these; therefore, we need to explain value of the work as well as the risks. An audience member asked if there are U.S. laws on gain-of-function research. Relman said not yet but also that law and regulation can control some research, but any evaluation system will not be able to catch everything, especially a rogue actor. An audience member suggested that we can raise awareness among the scientific community to inspire more scientists to think about the risks before they undertake an experiment to address a scientific problem.

Zhihong Hu (Principle Investigator, Wuhan Institute of Virology, CAS) discussed the construction and rescue of a functional synthetic baculovirus as an example of the capabilities of modern synthetic biology. She noted the massive uptick in reference to synthetic biology in scientific journals this century and the many advances in the field since polio virus was first synthesized in 2002. Her research focuses on baculovirus co-evolution with insect hosts, a system with a very unique lifecycle and could be used as a bio-control agent to control pest outbreaks. She noted that there is a low risk for synthesizing baculovirus because the virus has a large flexible genome that is easy to manipulate where researcher can delete genes without risk. She concluded by asking the audience if the scientific community should regulate synthetic biology and if so how?

The audience asked about reproducibility of her virus synthesis and she said that a very skilled student can synthesize baculovirus in one month; others in two months. An audience member asked her to predict when Zika virus would be synthesized. She said any flavivirus lab could do it. Another member of the audience asked if having the original virus made the process easier? She said yes, it is hard to do from a database sequence and more difficult without the original virus. An audience member asked about safety concerns noting that in the United States the NIH publishes regulations on modified genetic organisms. For example, certain labs can only possess a percentage of the genome, e.g. 30% for small pox.

Wensheng Wei (Professor, Peking University) spoke about high-throughput functional genomics: coding, non-coding and beyond. He focused on gene editing tools and gain of function research in Chinese life science. Gene editing has many applications for drug target identification. He uses gene editing systems, like CRISPR to address bacterial antibiotic resistance, a large problem in China. His research focuses on *Clostridium difficile* bacteria that is more resistant to antibiotics and how synthetic and natural systems for editing can be turned into high throughput strategy to produce better antibiotics. He is also working to produce Zika virus antivirals and is developing high throughput methods to identify non-coding elements on the chromosome to get better tools to study the whole genome. New gene editing tools are useful for addressing drug resistance but techniques still need to get through clinical trials. An audience member asked if he had found any new roles or links for RNA in the infectious disease process. Wei said not yet but that this is a promising area.

Session 2: Public health response to outbreaks and issues. The session chair **James Le Duc** (Professor, Galveston National Laboratory) noted that the panelists would present three technical talks demonstrating collaborative research concerning dengue, Zika, Ebola, and influenza, including avian influenza and host-pathogen interaction (pathogenesis).

Xia Jin (Principle Investigator, Institute Pasteur of Shanghai, CAS) spoke about observations that dengue immune sera enhances Zika virus infection in human peripheral blood monocytes. He noted that dengue antibodies enhance Zika infection and explained the mechanism and how this is being considered as researchers work to produce a Zika vaccine. Audience members asked if dengue would enhance infection in infants and toddlers and he noted that a baby born of a dengue infected mother will have more severe infection. Noted that there is no epidemiological data now that overlays dengue and Zika infections showing severe Zika in populations with dengue. He also noted that Zika vaccine would come soon and that the Zika vaccine development would be easier than a dengue vaccine.

Rui Gong (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about engineered human antibody constant domain as a candidate against Ebola virus. He mentioned that he did post doc at Frederick Maryland at USAMRIID. He discussed techniques for using therapeutic antibodies as tools for control of viral infection and updated the group on ZMapp and other current neutralizing antibody therapies against Ebola. He explained next steps in the process including animal studies, and evaluation of the “drugability” of the 7c2.

Pei-yong should check this; some missing info

Pei-Yong Shi (Professor, University of Texas) discussed antiviral drug discovery and development. He noted his diverse background in science, public health and administration and more recent work on antiviral drug discovery. His presentation outlined antiviral drug discovery strategy to target viral and host protein, stimulate immune system, and modulate molecular pathways that lead to diseases. Two antiviral approaches could be taken: target based approach and cell based approach. Next, he presented two dengue antiviral projects. One project used crystal structure to rationally design inhibitors of dengue viral polymerase. Another project used cell-based screening to identify inhibitors of dengue NS4B protein. During Q&A section, an audience member said that in clinical use, the prompt for initiating treatment would likely be a sign, like fever; then asked how he envisioned timing of use in humans? Shi noted that when patient reports to clinic viremia already starts to drop. An audience member asked if the virus will clear faster if you increase the dose? He said that the hope is to get the immune system to kick in to mitigate the disease. The session chair asked about the location of his collaborators. He said they are all over the world and including in Brazil since that is Zika ground zero; they can report progress in real time to Brazilian government to promote transparency.

JIM

James Le Duc (Professor, Galveston National Laboratory) the chair of the session then discussed improving the BSL-4 / P4 laboratory’s role in emergency health response and the

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importance of communications during a crisis. He changed the focus from technical talks to issues involved in containment labs to talk about communication issues relevant to BSL-4 labs. He noted that GNL has 6 hospital type rooms to treat infected patients while in containment. GNL is one of nine regional facilities that can treat Ebola in the U.S. He asked a broad question at the beginning of the talk, at what level and for how long should we screen people after exposure? Ebola can live in the body for months after recovery. It's important to take precaution but size the precaution to the risk. Focus should be on laboratories providing transparent, accurate and timely diagnostics of patients during an outbreak or exposure. When the community is not informed the situation tends to get out of hand. Valuable to say what is or is not an issue in advance. Much can be done to manage the perception of risk in advance of high profile situations. Proper education should happen early. Use the right people to do this, Thomas Ksiazek has experience responding to outbreaks going back to 1977. Wave two is addressing the public during the crisis. During a situation leaders should know the facts and have something to say and convey it clearly. We learned a lot about communication dealing with the Ebola case in Dallas, TX. Important to have clear leadership and manage the politicians. In the Dallas case then governor Rick Perry created a taskforce that brought everyone together. Later other problems had to be solved. The patient generated a huge amount of medical waste, eight 55 gallon drums of waste every day. The state of Texas used trucked the waste to UTMB and we disposed of it. Other issues include cleaning secondary facilities and dealing with pets. An outbreak can be a time when you demonstrate the value of your facility to your country, be prepared to help, plan a communication strategy, use a trusted spokesperson and stay on message. Anticipate and welcome involvement of political leaders. Be prepared to provide definitive diagnostics. Train lab and clinical staff on PPE and patient management before the need arises and don't forget waste management.

During the question and answer session a Chinese participant asked GNL's "official" responsibilities during a crisis about problems delegating authority when making official statements. Was it because lab is national lab? Le Duc said that he did not have the responsibility to speak on behalf of the nation did not get paid extra for any of this, it is part of our duty, to the community, state and nation. Had to reprioritize some of our basic research, like vaccine development. That said, extra investment paid off in the good will and support that we received and good statements help preserve the prestige of lab. He also said that the community was very supportive because GNL spends a lot of time communicating and maintaining a dialogue with local leaders, for example GNL did a 20 year economic forecast, noting that GNL generates more than 1 billion for the community. An audience member noted that China was also prepared to respond to Ebola. Government leaders across agencies and ministries had many meetings but the response would have been organized by the Ministry of Health and Family Planning if there was an Ebola case in China. An audience member asked for more details about how to treat clinical medical waste. Le Duc explained that the waste was initially treated with chemicals and not autoclave because Dallas did not have a large enough facility. Others noted that China does not have large a capacity to autoclave clinical waste and needs to come up with a strategy and that in china emergency response is organized by Chinese CDC. Le Duc noted that GNL played a supporting role, U.S. CDC had primary responsibility for the national response but because the case happened

in the state of Texas GNL naturally had a larger role. A Chinese participant noted that the system is different than in China but noted that if anything happens in Wuhan, then first sample would go to Hubei province CDC first.

The first day ended with a round Table Discussion chaired by **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS) and **James Le Duc** (Professor, Galveston National Laboratory). The chairs reviewed the discussion from day one. Yuan noted that excellent science is going forward in China and the United States but it is raising some policy issues at the national and international level. How do we work together to create regulations to that will not hinder the good science going on? He sees many opportunities for collaboration and international exchange. How do we educate students on technical issues but help them understand the context of global challenges going forward. He noted the BSL-4 labs about to open in China and asked about to best share virus stocks, reagents and tools necessary to do the critical scientific work the labs were designed to do?

First Yuan noted that the day one presentations combating emerging diseases control as a good basis for our future communication and collaboration; the U.S and China should find a common interest in this area. Second he noted that NAS and NAM and CAS, while different organizations, have the same objectives. Promote science for development of the world. Our communities have different ways to approach crisis; China should do a better job explaining our system and what happens when there is a problem in china. We have lots of process in place but we can learn a lot from the American side on understanding effective crisis management. Third he is concerned about how scientists can manage advances of new technology. Scientists have mostly used modern technology and science to do good work but today some research poses risks that should be acknowledged. How do we understand risks and prevent accidents or misuse while paying attention to the real benefits of the research. Fourth he noted that scientists have a duty to help the public understand the value of their work and demystify their research.

An audience member agreed with the theme of his summary, and said that the problem of controlling emerging infections is an interesting problem that we share. In important factor is how do scientists better understand natural disease reservoirs and how do we interpret sequence data from nature? Today it is easy to generate sequence but it remains hard to understand what a given means regarding phenotype. What other kinds of information do we need to collect? We should also think about the kinds of experiments that warrant further discussion or review and get ahead of this before outsiders challenge the rational to do the science.

A Chinese participant said that we know that bats and birds host potential pathogens and that the scientific research community is working across China to map reservoirs. We have generated a lot of sequence information over the past three or four years but we don't understand why diseases emerge when they do; more collaboration on reservoirs is needed. There is a lot China can learn from the GNL, but not just scientifically; transparency and trust is important. We want the world to understand what we are doing. P4 labs are huge

investments; they should be collaborating. It would be good to see institutional level collaboration between NIV and GNL we could have the CAS spend money to help support the collaboration. CAS has several mechanisms to support international engagement and collaboration including finding international exchanges and fellowships of people from abroad to come to China. Scientists in China can propose international projects to CAS and CAS can fund, also on the ecology and evolution of infectious disease. CAS is working with the U.S. NSF and NIH, the program manager will visit NIV next month. We can use all these resources.

Another Chinese participant said that the group should be most interested in pathogenic viruses and should focus on significant viral threats to human health. China CDC is working to discover unknown pathogens. It was also stated that the U.S. and China should share experience on emergency response. Scientists will have to work with the policy makers to prepare for infectious disease emergencies. This might be a topic for a joint report.

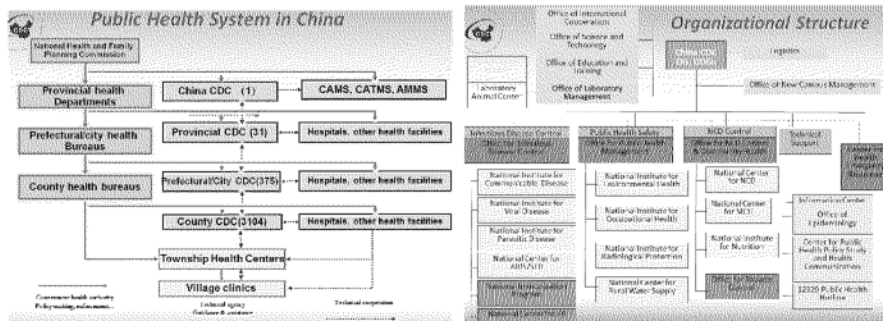
A Chinese participant noted that sharing viruses even domestically is difficult and asked how we can overcome this? They have created a consortium to share samples within China, but sharing samples across international borders is difficult. There are many issues at the policy level, for example shipping is a big problem especially live virus; however there are techniques to ship parts of the viral genomes. More science can be done to overcome the policy problems. An American participant noted that the group is focused on public health and science but should remember to engage the veterinary and the agriculture production sector in the spirit of One Health. Like long-standing influenza collaborations, we can expand this collaboration.

Yuan said that on day 2 the group would hear more about China's high level biosafety facilities and discussions about biosafety, regulation and management in both countries. These topics might also be the basis for future collaboration. To better accommodate collaboration we should come up with the right kind of linkage between our groups. After the meeting we should identify priority considerations and write remarks to our academy presidents about what our two academies can do together to provide a channel and bridge for future.

Day 2

Session 3: Emerging infectious diseases and global health security. The chair, **Pei-yong Shi** (Professor, University of Texas, GNL) noted that the session would cover anti-viral countermeasures (strategy and R&D) and improving the high containment laboratory's role in emergency health response.

George Gao (Academician, Institute of Microbiology, CAS) discussed biosafety, biorisk, and biosecurity pathogens and human behavior.



Dr. Gao has experience responding to natural outbreaks, including playing a leading role in China's response to the 2014 West African Ebola outbreak but, like all of us, less experience addressing deliberate outbreaks. He stated that the meeting was important because more U.S. Chinese collaboration can help prevent misuse. He attempted to answer the question, why do we have so many new viruses and periodic outbreaks? Gao noted that today the world is more interconnected, globalization creates interdependence. Human behavior has been a driving force for many of the changes. He spoke of the H7N9 outbreak of 2013 and the difference between low pathogenic and highly pathogenic avian influenza. He said we do not know what the will be the next HxNy flu virus that causes significant loss of human life. Flu continues to evolve and is very complex, new flu strains circulate and evolve in live poultry markets. China is a place where the mixing occurs. What is the solution; close the markets? (noted the Science article on this from 2014). He said Ebola, Nipa, and MERS, viruses also spill over from natural reservoir to humans. MERS is especially troublesome; corona virus recombination is common. Will MERS be like flu? It is a constant struggle to control the effects of virus evolution and adaption into new hosts. Looking at how virus adapt to new hosts is a key area where we can cooperate. We can exchange methods for studying adaptation and work with the international community. He has advocated for younger people to address emerging communicable disease especially in Africa and noted that China CDC is thinking and working more internationally with aid and financial support. He helped establish the Sierra Leone China Friendship Biological Safety Association.

Gao stated that the U.S. and China should have a real discussion on how to work together to consider gain of function and loss of function research, it is not in either of our countries interest to create disastrous viruses. He also said that going forward transparency among scientists and the community is critical. Gao also discussed the disease surveillance context of the announced Chinese government Belt and Road Initiative, the Chinese effort to create an economic belt through the historic Silk Road region of central Asia.

An audience member working on MERS found a very high viral presence in camels in Pakistan and also found evidence in humans, but without clinical cases? He asked Gao why this might be the case? Gao was not sure; maybe mutation? He proposed that maybe that the virus population in Pakistan has low pathogenicity? An American participant said that he has not seen the Ebola outbreak virus become more virulent during the 2014 outbreak. Gao stated

that they have no evidence but are still doing sequencing. An audience member asked if Gao was trying to say that bats carry a MERS-like virus and what might be the real host of MERS, bats or camels? Another also asked if we are likely to see a flu like MERS virus in the future. Gao said that camels are just intermediate hosts and that he thinks that MERS may evolve to be more flu-like in the future.

Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University) spoke about the Chinese One Health strategy for responding to emerging infectious diseases (EIDs). A One Health strategy that considers all related contact between humans and animals is an effective way to combat and possibly predict EIDs. Many are actively working on One Health in Guangdong province and he described several studies in which he was involved with. He explained that One Health is a particularly appropriate strategy in Guangdong. Because of the emphasis on freshness in Cantonese food, animals are kept alive until just before they are consumed. This makes Guangdong province, and especially the live animal markets a hotbed of disease outbreaks. 70% of Emerging Infectious Diseases are vector borne and zoonotic diseases. Guangdong is vulnerable to EIDs due to its location, culture and high population. The first SARS outbreak was in Guangdong. Infected bats came into contact with civet cats and then the virus evolved and jumped to humans. Another reemerging infectious disease of concern in the region is brucellosis, associated with imported sheep and contacts with humans. Lu also detailed the five waves of H7N9 outbreak in China. Live poultry markets were key to spread and 95% of human cases followed exposure to live poultry. He noted a recent novel mutation (in March 2017) that showed a high pathogenicity avian flu. China has examined the impact of closing the live poultry markets to curb future outbreaks but noted the negative impact on local economies. He cited an article that details China's response to EIDs and the need for a One Health approach in future responses.¹ An audience member said that people in Guangdong eat "everything" which poses a unique problem.

Zhengli Shi (Principle Investigator, Wuhan Institute of Virology, CAS) spoke about the evolution and pathogenesis of bat SARS like coronavirus. Shi is working on corona virus and other emerging infections and said that bat SARS-like corona virus (SL CoV) could be the next pandemic. He described the cases and countries involved in the 2003 outbreak. For bat corona virus to cause the next SL CoV outbreak many factors will have to be involved. To examine this possibility he is looking at the pathogenesis of SL CoV in transgenic mice. It replicates very well in mice and human tissue. The virus can easily enter human cells but in the animal model the virus has less pathogenesis; this is good news. His research shows that some bat SL CoV have potential interspecies transmission to other animals and humans. An audience member asked if one could clear an infected bat of this virus? Zhengli said that he tried this with Nipah virus in bats but bats could produce antibodies, clear within seven days. In nature we found that bats produce antibodies to some viruses but not all. SL CoV can exist in bats for several months. An audience member said that you cannot be sure that this pathogen can cause human disease and that more data are needed. Infections are very mild and there is no clinical syndrome. Further studies are needed.

¹ "A brief historical overview of emerging infectious disease response in China and the need for a One Health approach in future responses" Jiahai Lu, Gabriel J. Milinovich, Wenbiao Hu, One Health

Mifang Liang (Principle Investigator, National Institute for Viral Disease Control and Prevention) discussed the epidemiological characteristics of severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery to current knowledge. of SFTS in china recently emerged; it was discovered in 2009 and 2010.

Emergency of SFTS in China, 2009-2010



She said that SFTS is a new emerging infection and it has been very hard to find the virus in nature. It was only recently added to the ICTV catalog. In the catalogue it is described as a highly pathogenic phlebovirus in the family bunyaviridae. It is now listed by the WHO as a special pathogen of concern. She recently mapped the genome structure of the virus. It has been determined that it is transmitted by ticks and person to person. The number of cases are increasing every year but the case fatality rate is decreasing every year. Most patients are from the countryside about 86% are farmers over 10,000 cases in 25 provinces were reported since the first discovery of SFTSV. Peak time for exposure and infection is May to Aug due to weather.

Ticks may act as a major vector for SFTSV transmission and domestic animals are widely infected by SFTSV, but reservoirs or hosts are not known. Person to person transmission of SFTSV has occurred through direct contact with patient blood containing high virus load. An audience member asked how do people become infected? Mifang said that is unknown, so far only local endemic investigations and we have isolated virus from ticks. They have not done studies to understand how humans have become infected. She did note that most patients do not have tick bites or exposure recently to slaughtered animals. In the future they plan to do experiments to determine how humans get the virus.

Linda Saif (Academician, Ohio State University) talked about animal coronaviruses as a global threat to humans and animals. Corona viruses continue to evolve and emerge globally as a cause of fatal respiratory and enteric infections of young animals and humans. Saif's talk covered SARS and MERS corona virus. She explained the basic morphology of the virus and the diversity of avian and mammalian CoVs. Corona viruses are genetically diverse due to frequent mutation and recombination. The viruses are transmitted from wild ruminants to humans. She described how BCoV MERS CoV and SARS CoV infect their hosts and whether MERS infects camels and humans and vice versa. She provided data demonstrating that the elderly humans on statins, for hypercholesterolemia are more susceptible to Noro virus and to MERS and SARS. She is concerned that SARS will reemerge from an animal reservoir and cause another pandemic. It is important to determine how MERS CoVs is transmitted so the scientific community can better target the virus and prevent such a

pandemic. Right now the strategy is to manage and reduce contact with infected camels or camel products but there are many unresolved questions. The epidemiology of MERS CoV infections in camels and its zoonotic transmission is poorly understood, but it resembles respiratory coronavirus infections in cattle. No vaccines have been licensed for respiratory CoV infections.

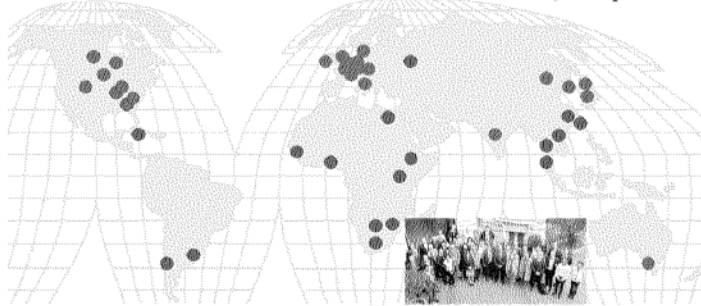
An audience member asked about the closest relative to MERS? Saif stated it is a swine virus from Hong Kong, in cat, also sparrows and other bird strains. An audience member said that they were trying to determine if all corona viruses originated from bats. What is the origin of swine corona virus? Saif said we don't know, but added that PERS died out in Europe. The theory is that it was not completely swine adapted. A Chinese participant suggested that if SARS is gone why should the government keep doing SARs research? What is your suggestion on how to prepare for another attack of SARs. Saif said that labs should keep all reagents available as the reservoir is still there. We still see many spillover events, only when virus acquires ability to go from human to human will it result in really heavy morbidity and mortality. It is important to stay vigilant. An audience member asked about farmed civet cats relationship to spread? Saif said there is evidence of interspecies transmission between civets and bats and that this is another argument for closing live animal markets; if we get rid of civets in live animal markets we could be able to stop transmission. An audience member supported this statement and said that Chinese data supports transmission between bats and civets in a farmed environment but some studies say there is no SARs CoV in farmed civets.

Chengfeng Qin (Professor, the Academy of Military Medical Sciences) described existing weapons against the emerging Zika virus. Chengfeng discussed the discovery and spread of Zika from Africa to more recent regional epidemics and detailed isolating the Chinese Zika virus strain. He published a paper in January 2016 about Zika in China and is working with Pei-yong and George Gao to do the work. He noted that there is currently no case of Zika infection reported in mainland China but there are examples of several imported cases. He is looking for further collaboration and communication on Zika with American researchers. Audience members noted that much of the population of Brazil might have dengue already and asked about the relationship between dengue and Zika. Dr Qin responded to questions related to how the antibodies interact?

David Swayne (Director, USDA Southeast Poultry Research Laboratory) discussed avian influenza at the animal-human interface: global challenges for scientific contributions to control. Swayne talked about the OIE Network of Expertise on Animal Influenza (OFFLU) and the importance of combating the influenza virus at the animal human interface. He then discussed specific epidemic cases. Swayne works to combat animal flu issues and also implements the One Health concept to prevent animal health issues from becoming human health problems. He said that animal flu continues to be a threat to humans, with 453 recorded deaths just this year. He reported a significant number of H3N2 infections at agricultural fairs in the U.S. and 534 H7N9 deaths in china this year. He explained that we know little about what will cause the next pandemic. OFFLU works with WHO and OIE to track outbreaks and prepare for epidemics and pandemics; the group helps WHO identify appropriate seasonal flu vaccine candidates by providing information seasonal and pre-pandemic animal flu strains.

1. OFFLU Network of Animal Influenza Experts

OIE (World Organization for Animal Health) and
FAO (Food and Agriculture Organization of the United Nations)
Animal InFLUenza Network: 6 continents, 26 countries, 60 experts



Swayne described several avian influenza vaccines strategies and the many different seed strains. A major function of the OFFLU is to help analyze data to make the decision on what to produce and when. An audience member asked about reasons for changes to the strains over time and if he attributed changes to vaccination or natural drift over time? Swayne did not have specific explanation for the changes, but noted that we see different types of changes in countries that are doing vaccinations. Before large fowl vaccination programs, changes were random, now they are different.

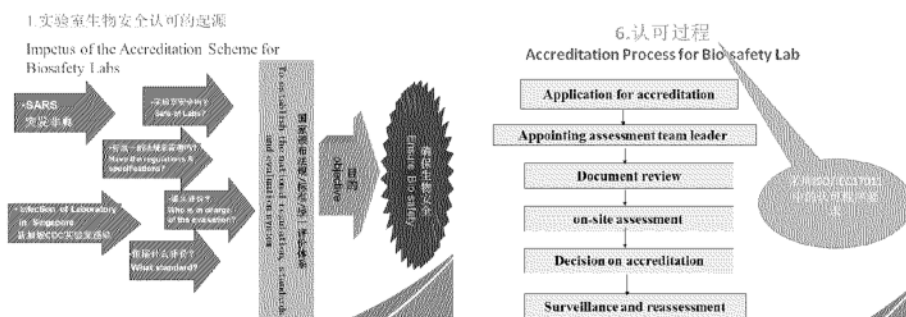
Gong Cheng (Professor, Qinghua University) presented his research on non-structural protein 1: a key for flavivirus transfer from host to vector. The discussion centered around flavivirus, particularly dengue and the dengue virus transmission process. He is studying transmission of dengue from human to mosquito, and hypothesizes that factors in human blood affect transmission. **Pei-Yong Shi** (Professor, University of Texas) discussed the rapid response to Zika virus emergence including diagnostics and the state of vaccine development. He discussed the devastating clinical outcomes of Zika virus infection: microcephaly. He noted that virus can persist in the male sexual reproductive tract well after clinical symptoms cease and that 80% of individuals are asymptomatic throughout disease. There are two way to diagnose Zika now: detect virus or detect antibodies. He added that there are two Zika vaccines in phase 1 trials and discussed platforms to manufacture inactivated Zika vaccine and experiments to test vaccines. One of the live-attenuated vaccines has been proven to protect monkeys from Zika infection but more work is needed.

Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment was chaired by **Zhiming Yuan** (Principle Investigator, Wuhan Institute of Virology, CAS). Presenters during the session discussed high containment labs in China and the U.S, community relations and public communication, biocontainment labs and the importance of clinical facilities, biocontainment maintenance and operations, outbreak response and the importance of reference collections and reagents.

Peijun Zhai (Division Director, China National Accreditation Service for Conformity

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Assessment) discussed the process of accrediting biological safety labs in China. He first detailed China National Accreditation Service (CNAS) the authorized accreditation body in China. CNAS has more than 1000 members and 4000 technical experts on call with 260 technical staff. CNAS is largest lab accreditation body in the world. The SARs outbreak provided the impetus for biosafety lab accreditation in China. He listed the laws and regulations and standards related to biosafety and for biosafety labs in China and described the accreditation process for biosafety labs. Accreditation schemes for labs for biosafety and laboratories start with the Chinese code for laboratories – General Requirements for Biosafety GB 19489². Currently 71 biosafety labs of various types are accredited by CNAS in China. The objective is to ensure biosafety of all labs. Article 20 of national accreditation says that labs at the BSL-3 and BSL-4 levels require national accreditation in China.



An audience member asked whether unannounced inspections take place during the five-year period after initial accreditation. Peijun said that during the interval from assessment to reassessment CNAS does surveillance at the facility on a regular basis. Usually, the first inspection takes place in after 1-1.5 years and then approximately every six months. Finally, he discussed the difference between certification and accreditation.

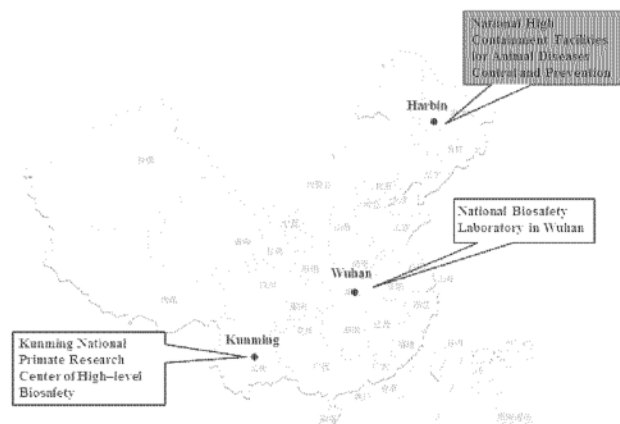
Tom can review

Thomas Ksiazek (Professor, Galveston National Laboratory) talked about biocontainment operations and maintenance and UTMB GNL and training personal at other containment facilities. Ksiazek discussed biocontainment operation and maintenance at the GNL, noting that a lot goes on behind the scenes. The cornerstone is compliance with the current version of the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) guidelines, the select agent law adds additional requirements and yearly inspections. Key concerns of BSL-4 lab operations are reoccurring expenses, like security costs, utility payment and training. GNL is unique in that it is operated by a university (the Boston University National Emerging Infectious Diseases Laboratory is not open yet). Described the unique safety, maintenance and information technology operations at the lab. GNL works with operators and researchers from many other countries, it had maintained a worldwide biosafety training center, but fund for the center has recently dried up and directors are working on options to reconstitute the program. Still have some interaction with Chinese institutes like NIV. An audience member ask how long before person can operate in the high containment space unsupervised? Ksiazek said it takes about 100 hours but it depends a lot on the individual. An audience member asked how countries with limited resources, like in Africa, undertake this

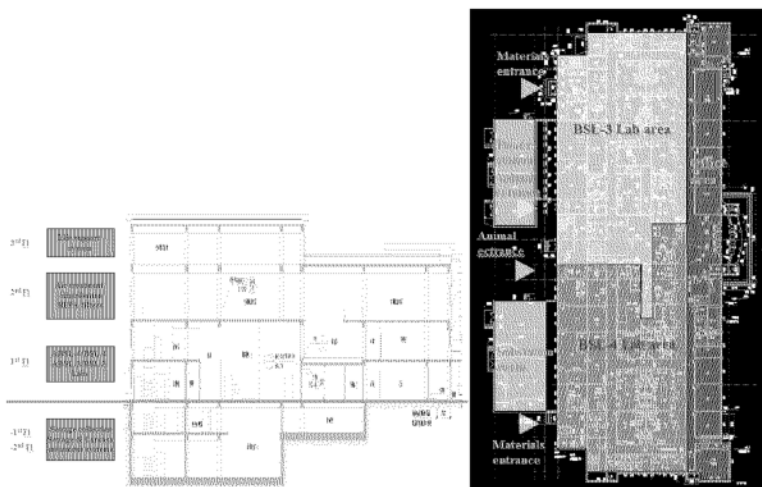
² <http://www.codeofchina.com/standard/GB19489-2008.html>

research. Ksiazek said don't set up a BSL-4 in that kind of environment set up a BSL-3 and use additional personal protective equipment (PPE). An audience member asked about GNLs precautions against flooding and severe weather and their waste management procedures and record back up? Ksiazek said that Hurricane Ike did inundate Galveston Island but that the building was not affected; GNL had power and acted as a life boat for campus. Waste stream is done as standard disposal for these facilities. Also GNL incinerates solid waste and everything is autoclaved. GNL has a reference center with emergency backup power and he is reasonably sure that the viruses would survive a problem. Some labs are in rural areas some are in population centers. High containment facilities have shown that they can operate safely in population areas.

Zhigao Bu (Director General/Principle Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences) discussed the design, construction and operation of Chinese national high containment facilities for animal diseases control and prevention. Zhigao said that Harbin Veterinary Research Institute is the most active institute for animal disease control in China. It is important to have such a facility because China has a significant percentage of the worlds livestock (50%, 800m of the worlds pigs for example), and numerous agricultural health challenges. He described SARs as a huge shock to the sector. After the outbreak In 2004 China launched plan to build three BSL-4 labs; in Harbin, Kunming and Wuhan. The Harbin lab was constructed for animal disease control and prevention.



He said that when they started, they had no idea how to construct BSL-4 lab buildings and facilities so formed lots of partnerships. They worked closely with Australian animal lab, with labs in Japan and Canada, Ames Iowa and Kansas State University in the U.S., Hamburg and Reims in Germany and the lab in Lyon, France. He showed pictures of the construction HCFAD.



Construction of the Harbin lab was completed in 2016. The lab is composed of 5 floors with two below ground. The Lab has nine working areas for BSL-4 and 10 for BSL-3. He discussed security measures for the facility, including access and monitoring of personal. They hope to have CNAS certification by the end of this year.

An audience member asked which pathogens they anticipate studying at in the BSL-4 portion of the lab? Zhigao said that is currently difficult to answer, interested in many pathogens, but need to get approved for each by Ministry of Health...and it can be difficult to get approved. They work with many pathogens at the BSL-3 portion of the lab already; Brucella, flavivirus, SARs, and avian influenza. An audience member pointed out that Zhigao's photos showed workers using two types of suits in the lab. He said that the blue suits are made in China and the white ones are made in France. He stated that there is a big difference in the price between the domestic and foreign manufactured suits. Chinese suits are not yet certified for use.

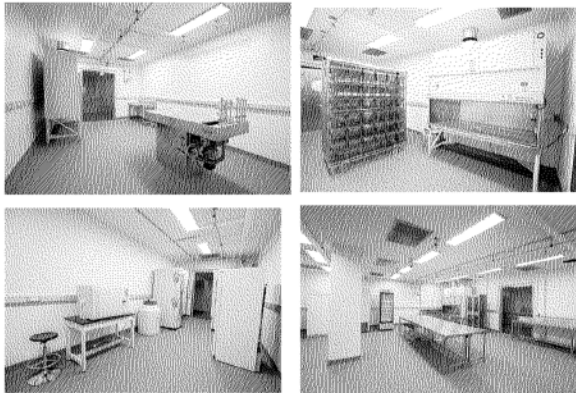
Longding Liu (Institute of Medical Biology Chinese Academy of Medical Sciences)
[represented Dr. Yunzhang Hu, the Principal Investigator and the head of the BSL-4 lab at the

Kunming Institute of Medical Biology who was unable to attend the meeting.] Longding spoke about the Kunming Institute of Medical Biology National Primate Research Center of High-level Biosafety. Like Zhigao he said that the lab was created after SARS in 2003 as an important resource for basic research on animal and human disease.



The facility was originally designed as a production facility for vaccines. He said at first they did not have any idea on how to create a BSL-4 lab. The lab cost 300m CNY and includes almost 3000 sqm of BSL-4 workspace. The campus includes a monkey breeding facility built 15km from Kunming city. Longding described the security for the facility, and showed photos of BSL2, BSL3, and 4 suites. In the 3 and 4 rooms they use secondary negative pressure cabinets for housing monkeys. Like Harbin they have an extensive staff for maintenance and engineering support, air handling and cleaning.

ABSL/BSL-4 Labs



The new Ag BSL-4 lab and existing vaccine R&D platform will make the campus a more efficient producer of vaccines for infectious disease.

An audience member asked about his thought on collaboration? He said that the facility doesn't have any experiments ongoing in BSL-3 right now but that they are seeking collaboration to facilitate work in the BSL-3 and BSL-4 spaces.

Session 5: Biosafety, biosecurity and bioethics chair **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) introduced the session on new technology for laboratory biological risk management, improving response to incidents at the lab (fire, police, environment release and paramedic), improving biosafety and biosecurity training, laboratory leadership, and culture and ethics.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) described the Wuhan Institute of Virology BSL-4 laboratory. He noted that some of the participants would visit the facility the following day. He said that he hoped to have a license for the lab soon. He stated that they had learned a lot from SARS but China still has a weak understanding of dual use capabilities. Scientists have different motivation for doing research. Most scientists around the world who do dual-use and gain-of-function research have good reason but their needs to be a balance. He asked how to make this balance and suggested several questions that might be asked when considering benefit and risk of certain experiments. Law and regulation cannot answer all these questions. We must first consider biosafety in the laboratory. China has a biosafety legislation framework which includes regulations measures and codes related to all aspects of biosafety. But not everything can be easily described, like whether to do certain experiments. He listed laws and ethical codes that could guide biomedical research and bioethics and discussed how laws and ethics overlap in biology and areas of bio ethics related to medical experiments on people. Dr Yuan further noted that CAS has its own bio science ethics committee. He suggested that we combine biosafety, biosecurity, and bioethics as a way to address bio risk more broadly. He suggested that the life science community needs to establish science code of conduct and promote joint work on ethics, and create a culture and philosophy of ethics. A Chinese participant said that in China we teach biosafety courses and therefore, students at CCDC have strong ethical concepts. They know the dangers inherent in BSL-3 and 4 labs. An audience member suggested that biosafety and biosecurity are different and asked which is most important for China today? Zhiming said that they are equally important and should be giving significant attention.

Thomas Ksiazek (Professor, Galveston National Laboratory) discussed regulatory issues affecting the operation of a functional high containment lab including obtaining, shipping, maintaining and exchanging high hazard pathogens in today's regulatory environment. Dr. Ksiazek focused on biosafety and biosecurity in the United States; he said that the U.S. was the first country that had a national standard for biosafety. The impetus for this began at the Asilomar conference in 1975. In 1981 the U.S. CDC produced the first Biosafety in Microbiological and Biomedical Laboratories (BMBL) handbook that categorized pathogens into risk groups; they are now working on the 6th addition of the BMBL. It sets the operating principles for labs. When asked he says that he "doesn't do safety for a living but does safety to keep on living". He said that there is not enough focus on how safety regulations effect the science that the labs are designed to do. One of his key concerns is shipping samples; in the U.S. it was simple until about 5 years ago. Shipping of pathogen isolates is becoming almost impossible and really expensive. Now World Courier is the only group left that still ships

agents in the U.S. He is seeking to get the USG to pressure FedEx to start shipping again. Another problem is that aircraft captains have the right to refuse dangerous goods shipments; the pilot has the final word. The regulations that have been put in place since 9/11 are mostly about security, not safety. It was really difficult, during the 2014 Ebola epidemic, to get samples from West Africa; the U.S. chartered a jet to get Ebola isolates back to U.S. and the British Government chartered a ship. It has also become difficult to get permit to operate a reference facility in the U.S. In addition we have to deal with regulators and intellectual property issues. Collectively we can make a difference; scientists need to address the trend of over securitization. A Chinese audience member said that CCDC internal movement between CCDC and CAS is really difficult as well with lots of bureaucratic hurdles. China only uses one group for international shipping.

David R. Franz (Former Commander, US Army Medical Research Institute of Infectious Diseases) spoke about laboratory leadership, responsibility and progress. He said that his goal as a institutional leader was to create a functional ethical organizational cultural so the institution could do good work. In the laboratory environment the key is to balance regulation with progress. He stated that biosafety is much easier than biosecurity, because it is difficult to define the risk or to measure success in biosecurity. The NAS “Fink committee” report *Dual-Use Research in an Age of Terrorism* was ahead of its time. The committee concluded that education and awareness are key to addressing the threat. Following that study, the U.S. the government put together the National Science Advisory Board for Biosecurity (NSABB) security advisory board. Franz discussed the evolution of biosecurity in the U.S. only one death—and not from a true select agent—in a US Select Agent program, and three deaths pre 1969 before the U.S. offensive bio program was halted. He compared that to more than 700,000 hospital acquired infections and 400,000 deaths due to medical mistakes in recent years. He pointed out that leaders and scientists in the high-containment lab community must understand that the actions by a few affect the many. A negative incident in one laboratory can impact our ability to function in many laboratories. An audience member asked how to balance security with transparency and how to build trust when accidents happen all the time? What about deep rooted mistrust due to social structure? What is your strategy to build trust with the Chinese? Franz said it is important to create “nodes of trust” globally between individuals. Building networks and nodes is the model we use at NAS is called “Track II diplomacy” between experts in the U.S. and other countries. He noted that we can do the same thing within any country by reaching out to others and forming personal connections but there is no perfect solution in to eliminating biosafety and, particularly, biosecurity incidents. A Chinese participant agreed that more enlightened leadership is key for safety and for productivity and there is a need to build trust between people, directors and workers. But, he asked, for P4 labs, how could we collaborate together to be more productive? The participant suggested that collaboration between the three new labs in China.

Zhiming Yuan (Principle Investigator, Wuhan Institute of Virology, CAS) **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) presented conclusions from the meeting and led a discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on Emerging Infections, Laboratory Safety and Global Health Security

Franz Presented summary thoughts from the meeting to the group. He identified some key topics:

- Role of scientists in balancing regulation, safety, security and productivity
- Popularizing Science (helping the non-science community understand our role)
- Emerging infections (reservoirs, natural populations and sequence data)
- The importance of transparency within and between countries
- Importance of trust within and between organizations and nations
- One Health (animal health, the economy, human health)
- Responsibility of the science community to self-police and in some cases, regulate

He also presented some possible joint project ideas which had arisen during the meeting:

- Direct cooperation between CAS and NAS
 - Institutional partnering and collaboration
- Joint Table Top Exercise detailing hypothetical response to an outbreak
- Response training
- How to make decisions regarding “Dangerous Research” on certain pathogens and gain of function research in general
- A joint manuscript of shared values and concerns
- Overcoming barriers to sharing strain collections and transport of pathogens
- Exchange and training of students

The audience suggested other issues including exchanging reference strains as many strains in China are interesting to researchers in other parts of the world. NAS and CAS representatives could jointly write a paper addressing how best to facilitate strain exchange. Others said that would be very useful but we must follow international guidelines like the Nagoya Protocol on Access to Genetic Resources. Also domestic property rights become an issue; if an outbreak occurs in a third country and we isolate virus, the virus belongs to country where sample is from. This makes exchange difficult.

Zhiming offered several additional suggestions.

- We could create an official agreement between institutions promoting institutional collaboration.
- The two academies could encourage scientists to create a culture of trust, safety and bioethics. NAS and CAS should provide a platform for cooperation.
- The U.S. could do more Chinese scientist training and train the trainer training for and Chinese institution staff and students.
- He also supported efforts to improve the free movement of sample material.
- He stated that the NAS and CAS will write a joint report and from that we can extract important information to provide to CAS and NAS leadership.
- CAS will set up a core group for NAS to talk to about future activities. NAS will work with CAS to bring scientist to the U.S. to continue the discussion.

In discussions after the meeting the chairs decided on the following list of near terms action

items as priorities:

- Scientist exchange and training, particular for BSL-4 laboratories.
- Joint BSL-4 research projects that are beneficial for both US and Chinese scientists
- A memorandum between UTMB and Wuhan Institute of Virology (and other two BSL-4 laboratories) for both long-term and short-term collaboration and partnership.

Longer terms priorities:

- Enhancing our ability to share strain collections
- Joint white paper that each side could use to educate political leaders and others.
- Promote international collaboration via China-US joint projects,
- Joint training programs
- Joint manuscript between individuals and institutions
- Both academies support trust building and BS/BS at labs and by scientists.

From: Cell Symposia <cellpress@mail.elsevier.com>
Sent: Thursday, June 15, 2017 12:12 PM
To: Sahni, Sanjeev K.
Subject: Emerging and Re-emerging Viruses abstract submission closes at midnight tomorrow!

Can't see this email properly? [Click here to view an online version](#)



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Dear Colleague,

Don't forget to submit an abstract of your work for the [Cell Symposium on Emerging and Re-emerging Viruses](#) before midnight tomorrow!



Here's a reminder of our exciting speaker line-up:

Keynote Speaker

[Anthony S. Fauci](#), *NIAID, USA*

Special Guest Speaker

[Richard Preston](#), *Author of the best seller 'The Hot Zone'*

Speakers

[Dan Barouch](#), *Ragon Institute of MGH, MIT and Harvard, USA*

[Sara Cherry](#), *University of Pennsylvania, USA*

[James Crowe](#), *Vanderbilt University School of Medicine, USA*

[Peter Daszak](#), *EcoHealth Alliance, USA*

[Michael Diamond](#), *Washington University School of Medicine at St. Louis, USA*

[George Gao](#), *Chinese Academy of Sciences, China*

[Adolfo Garcia-Sastre](#), *Mount Sinai School of Medicine, USA*

[Akiko Iwasaki](#), *Yale University, USA*

[Yoshihiro Kawaoka](#), *University of Wisconsin-Madison, USA*

[Sheemei Lok](#), *Duke-NUS Medical School, Singapore*

[Luciano Moreira](#), *Centro de Pesquisas René Rachou, Brazil*

Abstract Submission
Deadline

June 16, 2017

[Submit your
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Supporting publications



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Travel Awards



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Johan Neyts, *KU Leuven, Belgium*

Erica Ollmann Saphire, *The Scripps Research Institute, USA*

Gustavo Palacios, *USAMRIID Center for Genomic Sciences, USA*

Oliver Pybus, *University of Oxford, UK*

Zhengli Shi, *Wuhan Institute of Virology, China*

Nancy Sullivan, *NIAID, USA*

Linfa Wang, *Duke-NUS Medical School, Singapore*

Family Support Award



We look forward to hearing from you.

Yours sincerely,

The organizers:

George Fu Gao, *Chinese Academy of Sciences, China*

Akiko Iwasaki, *Yale University, USA*

Lakshmi Goyal, Editor, *Cell Host & Microbe*

Sri Devi Narasimhan, Senior Scientific Editor, *Cell*

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From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 6/23/2017 4:28:34 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]; David Franz [davidfranz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
Subject: RE: Re: Thank you!
Attachments: Draft Wuhan bio dialogue summary 2017 vf NIV.docx
Importance: High

Greetings Zhiming,

Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

1. Write a joint white paper outlining issues of mutual concern
2. Work to form an official partnership via a memorandum of understanding between the Galveston National Laboratory and the Wuhan Institute of Virology
3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Thursday, May 25, 2017 11:34 PM
To: David Franz
Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc; zhanghan; chenxw
Subject: Re: Re: Thank you!

Dear All friends

Thanks you for your contribution for the excellent 2nd China-US workshop on challenges of emerging infectious, laboratory biosafety and global health security. Without your help, we can not have this good communication chance for the scientists and we can not discuss the important public health affairs with the privileged scientists from China and USA. During the meeting, the scientists, policymakers, advisors from China and USA exchange the great achievements in science and technology in related areas, discussed the new conception and new strategy for disease control, the roles of biosafety, biosecurity and bioethics in infectious disease control, and discussed for the possibility for future cooperation between the Chinese and American, especially the official cooperation between our institute and Galveston laboratory. I hope this meeting will be a milestone for further Sino-US cooperation on infectious disease control, and I hope your stay in Wuhan will be the most precious memory in your profession.

Yes, we need to have a meeting report, indicating our activities, concerns and suggestion for further action for both academies, letting the top leaders understand the effectiveness, practicability and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and our institute, quarantining, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in next meeting in USA.

We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

Regards to all.

Zhiming

>>
>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>
>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>
>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.
>
>Best regards, Dave
>
>David R. Franz DVM, Ph.D
>
>(b)(6)
>
>
>
>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>
>> Dear Zhiming,
>>
>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>
>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
>>
>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.
>>
>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>
>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>
>> With best wishes,
>>
>> Jim
>>
>> James W. Le Duc, Ph.D.
>> Director
>> Galveston National Laboratory
>> University of Texas Medical Branch
>> Galveston, TX 77555-0610
>> (t) 409-266-6500
>> (f) 409-266-6810
>> (m) (b)(6)

**Second China-U.S. Workshop on
the Challenges of Emerging Infections, Laboratory Safety and Global Health Security**
Wuhan National Institute of Virology
May 17-19 2017
Wuhan, China

Summary

To address the interconnected life science challenges associated with emerging infectious diseases and further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity, the U.S. National Academy of Sciences (NAS), the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second¹ China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in May 2017 in Wuhan, China. Experts from China and the United States gave presentations on science behind combating emerging infections, high containment laboratories, including commissioning; construction; operation and sustainment; and the importance of conducting innovative life science research while managing the risks. Techniques like gain-of-function, gene editing, and other novel biotechnologies were discussed as was the emergence and public health response to outbreaks of new animal and human diseases of concern to China and the United States. The Chinese and American approaches to biosafety and biosecurity in laboratories, life-science ethics, laboratory leadership and organizational cultures were addressed to advance a better understanding of these issues from the perspective of experts in each country and to seek agreement on best practices in these areas. A large group of graduate students was in attendance and took part in the robust discussions which followed each presentation. Subsequent meetings will be held in the United States in 2017 and in China in 2018.

The workshop aimed to build bridges between Chinese and American scientists and use the eminence and national leadership of the convening CAS and NAS organizations to improve scientific and technical cooperation in areas of mutual concern to China and the United States. Although some presentations focused on specific research in the areas of gain of function, gene editing, targeting and delivery and other novel biotechnology, public health response to outbreaks, emerging infectious diseases, and global health security, each speaker considered issues associated with biological safety; laboratory management and maintenance; staff education and training; the efficient and sustainable operation of animal, plant, and public

¹ In September 2015, a group of experts and representatives from the NAS, CAS, Chinese Center for Disease Control and Prevention (CCDC), and other Chinese institutions held the first *Workshop on Challenges of Emerging Infections, Laboratory Safety, and Global Health Security* at the CAS Institute of Microbiology in Beijing. The workshop allowed American and Chinese experts to discuss human and animal infectious-disease challenges that transcend national borders and impact both countries. Participants at the workshop also discussed guidelines for the use of CRISPR Cas9 and other gene editing technology that led to a summit on human gene editing co-convened in the United States by NAS, CAS, and the U.K. Royal Society. The co-chairs of the workshop agreed to continue to share information on regulations, to continue dialogue on biosafety and biosecurity best practices, especially at high containment laboratories, and to explore the possibility for more U.S.-Chinese collaboration on issues related to global public health. The workshop concluded with the experts identifying promising areas for collaborative partnerships between Chinese and American scientists and institutions and an agreement to hold a second meeting in Wuhan, China.

health research laboratories; and clinical applications for improving global health security when they presented their findings and during the public question and answer period following each presentation. Of particular importance were discussions related to efforts by both countries to achieve the right balance among safety, security, regulation, and scientific progress in conducting and advancing life-science research. After the SARS outbreak of 2002 the Chinese scientific community focused on the linkage between disease and security, specifically the insecurity that a naturally occurring disease outbreak could create. The United States continues to struggle to regulate research using new techniques to edit genes and, after several high profile accidents, is considering better ways to address safety and security in high-containment laboratories without hindering the important science that takes place inside.

Participants identified three broad areas for further collaboration between the United States and China: (1) Issues related to emerging infections, understanding disease reservoirs, disease emergence, disease surveillance, natural versus human origin of disease, data sharing, and building capacity for research during public health emergencies. (2) Anticipating risk in the life sciences and medicine related to biotechnology innovation, such as identifying certain experiments that are too risky to conduct. (3) Governance of science to reduce risk, such as doing research in centralized laboratories versus distributed labs, managing research costs, learning from past technical and bureaucratic mistakes, best ways to diminish risk without hindering science and addressing technical risk for the laboratory versus social risk for the community.

A unique feature of the workshop was that it brought together the leadership of four biological safety level four (BSL-4) laboratories: The Galveston National Laboratory (GNL) in the United States, the Wuhan Institute of Virology (CAS) the Harbin Veterinary Research Institute (Chinese Academy of Agricultural Sciences), and the Kunming Institute of Medical Biology (Chinese Academy of Medical Sciences). After extensive planning, commissioning, construction, testing, and international collaboration, all three of the Chinese laboratories are close to opening their BSL-4 laboratory spaces for research. Sharing practical advice and experiences and creating ties between institutions that operate these facilities is crucial to prevent the misuse or accidental release of dangerous pathogens. The leadership of the GNL has years of experience operating a high containment laboratory, including recent experience working with authorities to respond to and mitigate the consequences of an Ebola case in the United States. The meeting laid the foundations for future exchanges, both scientific and practical, between the leaders and researchers at these laboratories.

To educate political leaders and others about the topics discussed during the workshop, the organizers agreed to write a joint white paper outlining issues of mutual concern and to work to form an official partnership via a memorandum of understanding between the Galveston National Laboratory and the Wuhan Institute of Virology (and possibly the other Chinese BSL-4 laboratories) so that these labs can more easily work together on short-term and long-term joint projects. The experts identified several general areas for promising future exchanges including creating joint BSL-4 research projects that are beneficial for both the United States and China, better ways to share samples, strains, and strain collections between laboratories,

and improving and sharing best practices for training laboratory staff, particularly staff that work at the BSL-4 level. The organizers plan to hold further face-to-face meetings in the United States at the Galveston National Laboratory late in 2017 and in China at the Kunming Institute of Medical Biology in 2018. Topics for the next workshop at the Galveston National Laboratory will likely center around specific high biocontainment “operational” issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting “well-documented” studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

.....

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Sessions and Presentations

Gain of function research, gene editing, targeting and delivery and other novel biotechnology

- Genome engineering and other life-sciences technologies: challenges and opportunities
- Construction and rescue of a functional synthetic baculovirus
- High-throughput functional genomics: coding, non-coding, and beyond

Public health response to outbreaks and issues

- Antibody dependent enhancement in Dengue and Zika virus infections
- Engineered human antibody constant domain as a candidate against Ebola virus
- Antiviral drug discovery and development
- Improving the laboratory’s role in emergency health response: communications during a crisis

Emerging infectious diseases and global health security

- Biosafety, biorisk, and biosecurity – natural spill-over: Ebola
- A One Health Strategy for responding to emerging infectious diseases
- Pathogenicity analysis of bat SARS-like coronavirus
- Severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery
- Coronaviruses: Global threats to humans and animals
- Existing weapons against the emerging Zika virus
- Avian influenza at the animal-human interface: global challenges for scientific contributions to control
- Non-structural Protein 1: A Key for Flavivirus transfer from host to vector

- Rapid response to Zika virus emergence: diagnostics and vaccine development

High-level biosafety laboratory: construction, commissioning, and sustainment

- Practical aspects of maximum biocontainment laboratory operations (in session 1)
- Brief and status quo on accreditation for biosafety laboratories in China
- Biocontainment operations and maintenance at UTMB and training for other containment facility operators
- National high containment facilities for animal diseases control and prevention in Harbin, China
- Kunming National Primate Research Center of High-level Biosafety: Future Perspective

Biosafety, biosecurity and bioethics

- Biosafety and bioethics considerations for emerging disease control research
- Regulatory issues affecting the operation of a functional high containment lab: Obtaining, shipping, maintaining, and exchanging high hazard pathogens in today's regulatory environment. Does the science matter?
- Leadership, responsibility and progress: the value of healthy organizational cultures

The role of CAS and NAS in enhancing cooperation between the U.S. and China on emerging infections, laboratory safety and global health security

Points of contact:

Zhiming Yuan, Ph.D.

Director, Wuhan Institute of Virology, CAS
[[HYPERLINK "mailto:yzm@wh.iov.cn"](mailto:yzm@wh.iov.cn)]

"mailto:davidrf Franz@gmail.com"]

David R. Franz, DVM, Ph.D.

Former Commander, USAMRIID

[[HYPERLINK](#)

James W. Le Duc, Ph.D.

Director, Galveston National Laboratory
[[HYPERLINK "mailto:jwleduc@UTMB.EDU"](mailto:jwleduc@UTMB.EDU)]

"mailto:brusek@nas.edu"] 001.202.839.0075

Benjamin J. Rusek, Senior Program Officer

U.S. National Academy of Sciences

[[HYPERLINK](#)

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 6/23/2017 4:28:34 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]; David Franz [davidfranz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
Subject: RE: Re: Thank you!
Attachments: Draft Wuhan bio dialogue summary 2017 vf NIV.docx

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Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

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Sent: Thursday, May 25, 2017 11:34 PM
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Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc; zhanghan; chenxw
Subject: Re: Re: Thank you!

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>> Galveston National Laboratory

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>> (t) 409-266-6500

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>> (m) (b)(6)

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Wuhan National Institute of Virology
May 17-19 2017
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Points of contact:

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Director, Wuhan Institute of Virology, CAS
[[HYPERLINK "mailto:yzm@wh.iov.cn"](mailto:yzm@wh.iov.cn)]

["mailto:davidrf Franz@gmail.com"](mailto:davidrf Franz@gmail.com)]

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["mailto:brusek@nas.edu"](mailto:brusek@nas.edu)] 001.202.839.0075

Benjamin J. Rusek, Senior Program Officer

U.S. National Academy of Sciences

[[HYPERLINK](#)

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 6/23/2017 4:28:34 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]; David Franz [davidfranz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
Subject: RE: Re: Thank you!
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To: David Franz
Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc; zhanghan; chenxw
Subject: Re: Re: Thank you!

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Points of contact:

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Benjamin J. Rusek, Senior Program Officer

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Sent: 6/23/2017 4:28:34 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]; David Franz [davidfranz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
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>> Jim
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>> James W. Le Duc, Ph.D.
>> Director
>> Galveston National Laboratory
>> University of Texas Medical Branch
>> Galveston, TX 77555-0610
>> (t) 409-266-6500
>> (f) 409-266-6810
>> (m) (b)(6)

**Second China-U.S. Workshop on
the Challenges of Emerging Infections, Laboratory Safety and Global Health Security**
Wuhan National Institute of Virology
May 17-19 2017
Wuhan, China

Summary

To address the interconnected life science challenges associated with emerging infectious diseases and further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity, the U.S. National Academy of Sciences (NAS), the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second¹ China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in May 2017 in Wuhan, China. Experts from China and the United States gave presentations on science behind combating emerging infections, high containment laboratories, including commissioning; construction; operation and sustainment; and the importance of conducting innovative life science research while managing the risks. Techniques like gain-of-function, gene editing, and other novel biotechnologies were discussed as was the emergence and public health response to outbreaks of new animal and human diseases of concern to China and the United States. The Chinese and American approaches to biosafety and biosecurity in laboratories, life-science ethics, laboratory leadership and organizational cultures were addressed to advance a better understanding of these issues from the perspective of experts in each country and to seek agreement on best practices in these areas. A large group of graduate students was in attendance and took part in the robust discussions which followed each presentation. Subsequent meetings will be held in the United States in 2017 and in China in 2018.

The workshop aimed to build bridges between Chinese and American scientists and use the eminence and national leadership of the convening CAS and NAS organizations to improve scientific and technical cooperation in areas of mutual concern to China and the United States. Although some presentations focused on specific research in the areas of gain of function, gene editing, targeting and delivery and other novel biotechnology, public health response to outbreaks, emerging infectious diseases, and global health security, each speaker considered issues associated with biological safety; laboratory management and maintenance; staff education and training; the efficient and sustainable operation of animal, plant, and public

¹ In September 2015, a group of experts and representatives from the NAS, CAS, Chinese Center for Disease Control and Prevention (CCDC), and other Chinese institutions held the first *Workshop on Challenges of Emerging Infections, Laboratory Safety, and Global Health Security* at the CAS Institute of Microbiology in Beijing. The workshop allowed American and Chinese experts to discuss human and animal infectious-disease challenges that transcend national borders and impact both countries. Participants at the workshop also discussed guidelines for the use of CRISPR Cas9 and other gene editing technology that led to a summit on human gene editing co-convened in the United States by NAS, CAS, and the U.K. Royal Society. The co-chairs of the workshop agreed to continue to share information on regulations, to continue dialogue on biosafety and biosecurity best practices, especially at high containment laboratories, and to explore the possibility for more U.S.-Chinese collaboration on issues related to global public health. The workshop concluded with the experts identifying promising areas for collaborative partnerships between Chinese and American scientists and institutions and an agreement to hold a second meeting in Wuhan, China.

health research laboratories; and clinical applications for improving global health security when they presented their findings and during the public question and answer period following each presentation. Of particular importance were discussions related to efforts by both countries to achieve the right balance among safety, security, regulation, and scientific progress in conducting and advancing life-science research. After the SARS outbreak of 2002 the Chinese scientific community focused on the linkage between disease and security, specifically the insecurity that a naturally occurring disease outbreak could create. The United States continues to struggle to regulate research using new techniques to edit genes and, after several high profile accidents, is considering better ways to address safety and security in high-containment laboratories without hindering the important science that takes place inside.

Participants identified three broad areas for further collaboration between the United States and China: (1) Issues related to emerging infections, understanding disease reservoirs, disease emergence, disease surveillance, natural versus human origin of disease, data sharing, and building capacity for research during public health emergencies. (2) Anticipating risk in the life sciences and medicine related to biotechnology innovation, such as identifying certain experiments that are too risky to conduct. (3) Governance of science to reduce risk, such as doing research in centralized laboratories versus distributed labs, managing research costs, learning from past technical and bureaucratic mistakes, best ways to diminish risk without hindering science and addressing technical risk for the laboratory versus social risk for the community.

A unique feature of the workshop was that it brought together the leadership of four biological safety level four (BSL-4) laboratories: The Galveston National Laboratory (GNL) in the United States, the Wuhan Institute of Virology (CAS) the Harbin Veterinary Research Institute (Chinese Academy of Agricultural Sciences), and the Kunming Institute of Medical Biology (Chinese Academy of Medical Sciences). After extensive planning, commissioning, construction, testing, and international collaboration, all three of the Chinese laboratories are close to opening their BSL-4 laboratory spaces for research. Sharing practical advice and experiences and creating ties between institutions that operate these facilities is crucial to prevent the misuse or accidental release of dangerous pathogens. The leadership of the GNL has years of experience operating a high containment laboratory, including recent experience working with authorities to respond to and mitigate the consequences of an Ebola case in the United States. The meeting laid the foundations for future exchanges, both scientific and practical, between the leaders and researchers at these laboratories.

To educate political leaders and others about the topics discussed during the workshop, the organizers agreed to write a joint white paper outlining issues of mutual concern and to work to form an official partnership via a memorandum of understanding between the Galveston National Laboratory and the Wuhan Institute of Virology (and possibly the other Chinese BSL-4 laboratories) so that these labs can more easily work together on short-term and long-term joint projects. The experts identified several general areas for promising future exchanges including creating joint BSL-4 research projects that are beneficial for both the United States and China, better ways to share samples, strains, and strain collections between laboratories,

and improving and sharing best practices for training laboratory staff, particularly staff that work at the BSL-4 level. The organizers plan to hold further face-to-face meetings in the United States at the Galveston National Laboratory late in 2017 and in China at the Kunming Institute of Medical Biology in 2018. Topics for the next workshop at the Galveston National Laboratory will likely center around specific high biocontainment “operational” issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting “well-documented” studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

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**Second China-U.S. Workshop on
the Challenges of Emerging Infections, Laboratory Safety and Global Health Security**

Sessions and Presentations

Gain of function research, gene editing, targeting and delivery and other novel biotechnology

- Genome engineering and other life-sciences technologies: challenges and opportunities
- Construction and rescue of a functional synthetic baculovirus
- High-throughput functional genomics: coding, non-coding, and beyond

Public health response to outbreaks and issues

- Antibody dependent enhancement in Dengue and Zika virus infections
- Engineered human antibody constant domain as a candidate against Ebola virus
- Antiviral drug discovery and development
- Improving the laboratory’s role in emergency health response: communications during a crisis

Emerging infectious diseases and global health security

- Biosafety, biorisk, and biosecurity – natural spill-over: Ebola
- A One Health Strategy for responding to emerging infectious diseases
- Pathogenicity analysis of bat SARS-like coronavirus
- Severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery
- Coronaviruses: Global threats to humans and animals
- Existing weapons against the emerging Zika virus
- Avian influenza at the animal-human interface: global challenges for scientific contributions to control
- Non-structural Protein 1: A Key for Flavivirus transfer from host to vector

- Rapid response to Zika virus emergence: diagnostics and vaccine development

High-level biosafety laboratory: construction, commissioning, and sustainment

- Practical aspects of maximum biocontainment laboratory operations (in session 1)
- Brief and status quo on accreditation for biosafety laboratories in China
- Biocontainment operations and maintenance at UTMB and training for other containment facility operators
- National high containment facilities for animal diseases control and prevention in Harbin, China
- Kunming National Primate Research Center of High-level Biosafety: Future Perspective

Biosafety, biosecurity and bioethics

- Biosafety and bioethics considerations for emerging disease control research
- Regulatory issues affecting the operation of a functional high containment lab: Obtaining, shipping, maintaining, and exchanging high hazard pathogens in today's regulatory environment. Does the science matter?
- Leadership, responsibility and progress: the value of healthy organizational cultures

The role of CAS and NAS in enhancing cooperation between the U.S. and China on emerging infections, laboratory safety and global health security

Points of contact:

Zhiming Yuan, Ph.D.

Director, Wuhan Institute of Virology, CAS
[[HYPERLINK "mailto:yzm@wh.iov.cn"](mailto:yzm@wh.iov.cn)]

["mailto:davidrf Franz@gmail.com"](mailto:davidrf Franz@gmail.com)]

David R. Franz, DVM, Ph.D.

Former Commander, USAMRIID

[[HYPERLINK](#)

James W. Le Duc, Ph.D.

Director, Galveston National Laboratory
[[HYPERLINK "mailto:jwleduc@UTMB.EDU"](mailto:jwleduc@UTMB.EDU)]

["mailto:brusek@nas.edu"](mailto:brusek@nas.edu)] 001.202.839.0075

Benjamin J. Rusek, Senior Program Officer

U.S. National Academy of Sciences

[[HYPERLINK](#)

From: Yuan Zhiming [yzm@wh.iov.cn]
Sent: 6/26/2017 2:19:05 AM
To: Rusek, Benjamin [BRusek@nas.edu]; David Franz [davidrf Franz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
Subject: Re: RE: Re: Thank you!
Importance: High

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Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

Regards

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>1-202-334-3975
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>Sent: Thursday, May 25, 2017 11:34 PM
>To: David Franz
>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc; zhanghan; chenxw

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From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 6/28/2017 3:15:32 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]; David Franz [davidrf Franz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; zhanghan [zhanghan@wh.iov.cn]; chenxw [chenxw@wh.iov.cn]
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We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

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Subject: Re: RE: Re: Thank you!
Importance: High

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>The U.S. National Academy of Sciences
>1-202-334-3975

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>advisors from China and USA exchange the great achievements in science
>and technology in related areas, discussed the new conception and new
>strategy for disease control, the roles of biosafety, biosecurity and
>bioethics in infectious disease control, and discussed for the
>possibility for future cooperation between the Chinese and American,
>especially the official cooperation between our institute and Galveston
>laboratory. I hope this meeting will be a milestone for further Sino-US
>cooperation on infectious disease control, and I hope your stay in
>Wuhan will be the most precious memory in your profession.

>
>Yes, we need to have a meeting report, indicating our activities, concerns and suggestion for further action for both academies, letting the top leaders understand the effectiveness, practicability and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and our institute, quarantine, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in next meeting in USA.

>
>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>
>Regards to all.

>
>Zhiming

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>>>

>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>
>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>
>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says,

there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>

>>Best regards, Dave

>>

>>David R. Franz DVM, Ph.D

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>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>

>>> Dear Zhiming,

>>>

>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>

>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>

>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>

>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>

>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>

>>> With best wishes,

>>>

>>> Jim

>>>

>>> James W. Le Duc, Ph.D.

>>> Director

>>> Galveston National Laboratory

>>> University of Texas Medical Branch

>>> Galveston, TX 77555-0610

>>> (t) 409-266-6500

>>> (f) 409-266-6810

>>> (m) (b)(6)

From: LeDuc, James W.
Sent: Tuesday, July 4, 2017 2:29 PM
To: Shi, Pei yong
Subject: FW: Long meeting summary
Attachments: NIV CAS NAS long meeting summary vf NIV.docx

Here's the longer version of the NAS-CAS meeting report. Hopefully Zhiming will be able to publish this in an appropriate format to credit both CAS and NAS and allow us to reference the meeting in the future.

Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Tuesday, July 04, 2017 2:04 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Dave Franz (davidrfranz@gmail.com) <davidrfranz@gmail.com>
Cc: Lowenthal, Micah <mlowenth@nas.edu>
Subject: Long meeting summary

Greetings,

As we discussed on the conference call I finished editing the long meeting summary. It is attached. I plan to send this version to Zhiming for review and translation.

PS happy 4th.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19, 2017

Wuhan, China

Meeting Report

During the welcome session the Chair of the meeting for the Chinese Academy of Sciences (CAS) **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS) thanked the assembled audience of about 100 experts and noted that the meeting would focus on the importance of good science and good policy for controlling emerging disease. Yuan said the meeting is a milestone for Sino-U.S. cooperation on emerging infections, laboratory safety and global health and security and would lead to further cooperation between the U.S. National Academy of Sciences (NAS) and CAS and between the United States and China. **Xinwen Chen** (Director General/ Principal Investigator, Wuhan Institute of Virology, CAS) said that the Wuhan Institute of Virology, a key sponsor of the workshop, and an operator of one of China's Biological Safety Level Four (BSL-4) high containment laboratories, aims to improve fundamental research in virology and other areas of basic science by doing fundamental research to combat emerging infections and outbreaks in China and around the world to ensure global health security and safety in China. **Yaping Zhang** (Vice President/ Academician, CAS) was not available due to a family emergency so **Qingquan Zhang** (Department of International Affairs, CAS) gave short opening remarks on behalf of CAS. He extended congratulations to the assembled group on behalf of the CAS Bureau of International Cooperation (who provided some of the funding for the meeting) and said that science in China is booming but groups like CAS and NAS need to look back to see how well we have done in the past and provide guidance and advice for the future.

Linda Saif (Professor, The Ohio State University) opened the meeting on behalf of the NAS. The institution has 2290 members, 460 foreign associates as affiliates and counts 200 noble prize winners among its members. NAS was established in 1863 to provide independent advice to the U.S. government and has done so for over 150 years including advice on building the Panama Canal and the launch of the first U.S. satellite. NAS was involved in organizing the 1975 Asilomar, California conference to establish a common understanding of risk and sensible precautionary measures related to recombinant DNA research. NAS produces two types of reports, workshop proceedings and consensus reports with findings and commendations, with the majority requested by government agencies. This year NAS published a report on [research guidelines for human gene editing](#) and posted the proceedings of an [international human gene editing summit](#). She noted that NAS recently reorganized its divisions to form the National Academies of Science, Engineering, and Medicine, (NAS, NAM, NAE).

After the introduction she explained that the current workshop is designed to help Chinese

and American experts better cooperate to respond to emerging infectious diseases, promote lab and global health biosecurity, and address impediments to cooperation and collaboration between the U.S. and China. She outlined the goals of the current workshop as:

- 1) Establish communication and scientific relationships within the region
- 2) Exchange scientific knowledge and best safety and security practices for research
- 3) Foster future China-U.S. cooperation and collaboration

She noted that CAS and NAS would produce documents summarizing the meeting and plan to organize future workshops on these topics.

David Relman (Professor, Stanford University) greeted the group on behalf of the U.S. National Academy of Medicine (NAM) president and foreign secretary. He described NAM as a 2000 member organization, created under the NAS charter in 1970, focusing on improving health and setting the agenda in medicine and health in the United States. As the chair of the NAM Forum on Microbial Threats he focuses on why infectious diseases occur, the microbe/host environment, and the framework for emerging infectious disease. NAM is also interested in microbial forensics and global health security and is promoting a global health risk framework. He sees three broad areas for further collaboration between the U.S. and China:

- 1) *Emerging infections*, understanding disease reservoirs, disease emergence, disease surveillance, natural versus human origin of disease, data sharing, and building capacity for research during public health emergencies.
- 2) *Anticipating Risk* in the life sciences and medicine related to biotechnology innovation, such as identifying certain experiments that are too risky to conduct.
- 3) *Governance of Science* to reduce risk, such as doing research in centralized laboratories versus distributed labs, managing research costs, learning from the past technical and bureaucratic mistakes, best ways to diminish risk without hindering science and address technical risk for the laboratory versus social risk for the community.

At the end of the introductions the audience was curious about how NAS and NAM reports are produced and asked how to ensure that the government will take the advice given. Dr. Relman answered that NAS and NAM produce independent reports for the U.S. Government and other sponsors; it is up to the sponsor to use or implement the advice in the report, but they are not required to do so. A participant noted that it is important for groups like NAS and NAM to catalyze and convene groups of the best minds to agree on a suitable path forward for others to implement but noted that CAS is somewhat different than the NAS. CAS advises and convenes but has a basic research mission as well. He said perhaps CAS can benefit from NAS experience on how to provide sound advice to the government on science.

James Le Duc (Professor, Galveston National Laboratory) then summarized the technical aspects and challenges associated with high-containment laboratories. Le Duc noted that China is on the verge of opening three BSL-4 high-containment laboratories and offered thoughts and advice from his perspective as the head of the University of Texas Medical Branch Galveston National Laboratory (GNL). He described high containment labs as

valuable resources that often employ the best people addressing the most difficult problems of global health. GNL is designed to handle all BSL-4 agents and has been in operation for about a decade. The lab cost 175 million USD to build and had significant ongoing operations expenses independent of the cost of research activities. These include utility costs, maintenance, and training the large onsite security force. The yearly operation costs equals about 11.5-15 million USD or about 7-9% of the construction costs. Other key issues of concern are the preparation for and proper management of laboratory accidents. Some accidents are inevitable so it is important to take precaution not only to reduce the likelihood of their occurrence but to manage and minimize the consequences. Labs should have a preexisting plan for many adverse situations. This plan should especially include a strategy for communication with the public and policy makers. Labs are a source of pride for the local community but when things go bad, opinion can change. It is important to build up a 'bank account' of good will by talking about important scientific contributions made by the researchers at the facility and how valuable research is to domestic and global health, and then be open and transparent if something goes wrong.

When asked how he defends and secures the large budget needed to run the lab year to year, Le Duc said this is a constant struggle, as costs go up and political leadership changes, the best strategy is to maintain lines of communication between the lab and the community and to politicians. In the U.S. it's not possible to guarantee the budget each year. The U.S. NIH helps offset some of the operations costs, but it is not practical to recoup all of this money from the NIH alone. NIH just provides costs for operations of labs, but all research expenses are funded through individual competitive grants and contracts. About 2/3 of the initial construction costs were provided by NIH and the remainder by the State of Texas and the University of Texas, with some philanthropic contributions. In the U.S. the long-term sustainability of a BSL-4 laboratory requires constant vigilance regarding the cost of operations and maintenance of the facility.

Session 1: Gain-of-function research, gene editing, targeting, and delivery and other novel biotechnology was chaired by **Yanyi Wang** (Deputy Director General/ Principal Investigator, Wuhan Institute of Virology, CAS). Participants discussed gain-of-function research, gene editing, targeting and delivery, other novel biotechnology and other recent advances in technology and their applications.

David Relman (Academician, Stanford University) spoke about the challenges and opportunities of genome engineering and other novel life sciences technologies. He said that responding appropriately to emerging infections has not changed, what has changed is the kind of science that is done. Today, scientists have a profoundly better ability to study and manipulate life at the genetic level but collectively, the scientific community has not given enough thought to what these new science capabilities mean. He described the process-based classification of life sciences technologies as the acquisition of novel biological or molecular diversity (e.g., DNA synthesis, DNA shuffling, combinatorial chemistry), directed design (e.g., synthetic biology, reverse genetic engineering), understanding and manipulating biological systems (e.g., "systems biology", RNAi, modulators of homeostatic systems), and production, packaging, delivery (e.g., microfluidics / microfabrication, nanotechnology, microencapsulation, gene therapy/targeting). He said that today individuals have increasing

power in the life sciences due to the low barrier of entry and the lower costs and more efficient and rapid processes described above. For example most RNA viruses can be re-synthesized using just the sequence so possession of a sequence allows an individual to make a virus.

When considering risk from the misuse of biology he asked if certain experiments should not be undertaken because the risks outweigh the benefits or because benefits will only be realized in the indefinite future? A key risk factor is the possibility of unusually large consequences if an accident were to occur (like the inability to contain a release and prevent illness and death, especially in resource-poor areas). Misuse can take many forms, from accidental or benign, to unwitting infections or release all the way to callous or deliberate (the most likely being accidental).

There is currently a vigorous discussion in the U.S. about experiments that enhance the virulence of influenza virus and genetic manipulation associated with gain-of-function research. He suggested that scientists should think carefully about strategies to minimize risk before doing such experiments, and to factor risk into decisions about research plans. Benefits almost always can be achieved with other experimental approaches. Other ways to address this problem include:

- More transparency in the scientific process
- The regulation of access to reagents and information
- Sensitizing relevant communities and establishing norms for the role of individuals, professional organizations, academia, industry, national leadership, and international organizations.
- Anticipating and preempting threats
- Response if something goes wrong (detection, reversal, attribution, etc.)

To achieve any of this strong scientific leadership is needed and should involve the entire scientific community. Consider the 1975 Asilomar Conference on Recombinant DNA as an example, scientists designed guidelines to ensure safe ways to work with recombinant DNA before an emerging era of research became a more public problem.

The audience asked about the U.S. approval process for gain-of-function research. Relman said that United States is in process of determining what to do about this. The audience asked how to engage the public on these issues. He said that this is also a challenge. In general most people are confused about the reasons for doing experiments like these in the first place therefore we need to explain the value of the work as well as the risks. An audience member asked if there are U.S. laws on gain-of-function research. Relman said no, law and regulation could control some research, but any evaluation system will not be able to catch everything, especially a rogue individual. An audience member suggested that we can raise awareness among the scientific community to inspire more scientists to think about the risks before they undertake an experiment to address a scientific problem.

Zhihong Hu (Principal Investigator, Wuhan Institute of Virology, CAS) discussed the construction and rescue of a functional synthetic baculovirus as an example of the capabilities of modern synthetic biology. She noted the massive uptick in reference to synthetic biology in scientific journals this century and the many advances in the field since polio virus was first synthesized in 2002. Her research focuses on baculovirus co-evolution with insect hosts,

a system with a very unique lifecycle and could be used as a bio-control agent to control pest outbreaks. Her research suggests that Baculovirus, a large DNA virus, can be synthesized and that it is a powerful platform for virus modification and engineering and for fundamental studies. She said that virus synthesis is a unique tool to study the viruses with only genome information or uncultured viruses. She noted that there is a low risk for synthesizing baculovirus because the virus has a large flexible genome that is easy to manipulate where researcher can delete genes without risk. She concluded by asking the audience if the scientific community should regulate synthetic biology and if so how?

The audience asked about reproducibility of her baculovirus virus synthesis and she said that a very skilled student can synthesize baculovirus in one month; others in two months. An audience member asked her to predict when Zika virus would be synthesized. She said any flavivirus lab could do it right now. Another member of the audience asked if having the original virus made the process easier? She said yes, it is harder to do from a database sequence and more difficult without the original virus. An audience member mentioned safety concerns noting that in the United States the NIH publishes regulations on modified genetic organisms. Hu said that she participated in the discussions to destroy small pox stocks; labs now can only possess 30% of the small pox genome but asked how can you control and regulate that in an era of synthetic biology? She said she knows that she will face public questions about her research and wants to make sure her viruses stay safe and secure.

Wensheng Wei (Professor, Peking University) spoke about high-throughput functional genomics: coding, non-coding and beyond. He described his research as using bio technology to address anthrax toxicity, *Clostridium difficile* bacterial infections (CDIs) and viral infection. He also discussed the use of gene editing tools and gain of function research. He uses gene editing systems, like CRISPR to address bacterial antibiotic resistance, a large problem in China because gene editing has many applications for drug target identification. His current research focuses on CDIs that are more resistant to antibiotics and how synthetic and natural systems for editing can be turned into a high throughput strategy to produce better antibiotics. He is also working to produce Zika virus antivirals and is developing high throughput methods to identify non-coding elements on the chromosome to get better tools to study the whole genome. The new gene editing tools are useful for addressing drug resistance but new techniques still needed to get the drugs through clinical trials. An audience member asked if he had found any new roles for RNA in the infectious disease process. Wei said not yet but that this is a promising area.

Session 2: Public health response to outbreaks and issues. The session chair **James Le Duc** (Professor, Galveston National Laboratory) noted that the panelists would present three technical talks demonstrating collaborative research concerning Dengue, Zika, Ebola, and influenza, including Avian Influenza, and host-pathogen interaction (pathogenesis).

Xia Jin (Principal Investigator, Institute Pasteur of Shanghai, CAS) spoke about observations that Dengue immune sera enhances Zika virus infection in human peripheral blood monocytes. He noted that dengue antibodies enhance Zika infection and explained the mechanism and how this is being considered as researchers work to produce a Zika vaccine. Audience members asked if Dengue would enhance infection in infants and toddlers and he

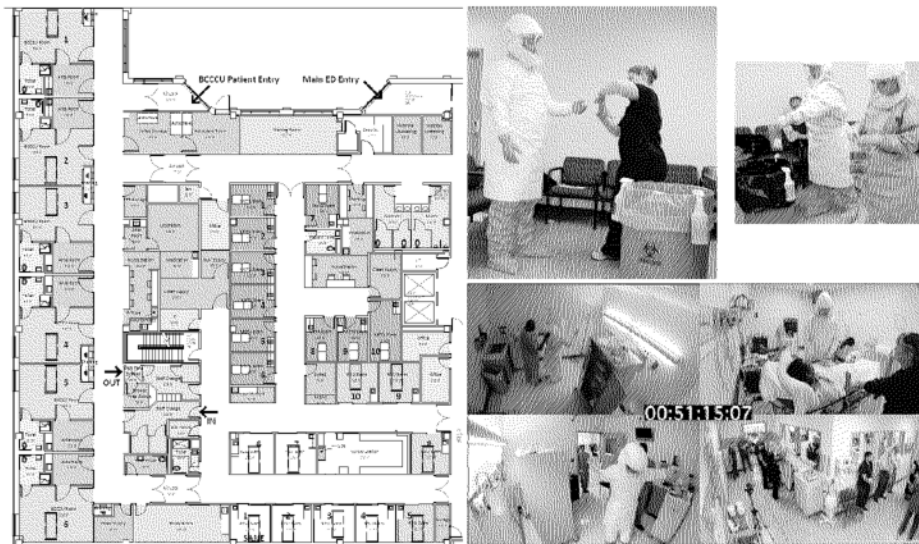
noted that a baby born of a Dengue infected mother will have more severe infection. However he said that there is no epidemiological data that overlays Dengue and Zika infections showing severe Zika in populations with Dengue. He also noted that Zika vaccine would be ready soon and that Zika vaccine development would be easier than a Dengue vaccine.

Rui Gong (Principal Investigator, Wuhan Institute of Virology, CAS) spoke about engineered human antibody constant domain as a candidate against Ebola virus. He said that therapeutic antibodies are invaluable tools for control of viral infection, they are the most effective tools for prevention of pathogen infection after exposure. He discussed techniques for using therapeutic antibodies and updated the group on “ZMapp” and other current neutralizing antibody therapies against Ebola. Monoclonal antibodies ZMapp were used for therapy in infected patients during the Ebola epidemic in West Africa. The sera from convalescent patients were used for therapy in MERS-CoV infected patients in Korea. He said that the therapeutic antibody market remains one of the fastest-growing segments in the pharmaceutical industry, with a growth rate of approximately 30% per year. He explained his research focus and the possible next steps in the therapeutic antibodies research process including, the further optimization on 7c2M antibodies, animal studies, understanding the neutralization mechanism in antibodies, neutralization experiment in protection from Ebola virus infection at the cell level, and the evaluation of the “drugability” of the 7c2 antibody.

Pei-Yong Shi (Professor, University of Texas) discussed antiviral drug discovery and development. He noted his diverse background in science, public health and administration and more recent work on antiviral drug discovery. His presentation outlined antiviral drug discovery strategy to target viral and host proteins, stimulate immune systems, and modulate molecular pathways that lead to diseases. Two antiviral approaches could be taken: a target based approach and a cell based approach. Next, he presented two dengue antiviral projects. One project used crystal structure to rationally design inhibitors of dengue viral polymerase. Another project used cell-based screening to identify inhibitors of dengue NS4B protein. He said that future research would determine the mechanism of NS4B inhibitors and develop compound with pan-serotype activity. An audience member asked if in clinical use, the prompt for initiating treatment would likely be a sign, like fever then asked how he envisioned timing of use in humans? Shi noted that by the time the patient reports to a clinic viremia already starts to drop. An audience member asked if the virus will clear faster if you increase the dose? He said that the hope is to get the immune system to kick in to mitigate the disease. The session chair asked about the location of his collaborators. He said they are all over the world and in Brazil since that is Zika ground zero; they report progress in real time to the Brazilian government to promote transparency.

James Le Duc (Professor, Galveston National Laboratory) the chair of the session, then discussed improving the BSL-4 laboratory’s role in emergency health response and the importance of communications during a crisis. He changed the focus of the session from technical talks on research to discussing the labs where some of the research takes place and how best to respond and communicate during and after an outbreak.

At the beginning of the talk he noted that every aspect of outbreak response can be complicated, for example, at what level and for how long should we screen people after exposure? Ebola can live in the body for months after recovery. It's important to take precaution but size the precaution to the risk. The time to think about question like this is before the outbreak. He noted that GNL is one of nine regional facilities that can treat Ebola in the U.S. and has 6 hospital type rooms to treat infected patients while in containment.



During a crisis the focus should be on laboratories providing transparent, accurate and timely diagnostics of patients during an outbreak or exposure. When the community is not informed the situation tends to get out of hand. Much can be done to manage the perception of risk in advance. Proper education should happen early. During a crisis leaders should know the facts and have something to say and convey it clearly. We learned that it is important to have clear leadership and manage communication with the public and with politicians while responding to the recent Ebola case in Dallas, Texas. During the crisis in Dallas then Governor Rick Perry created a taskforce that brought everyone together to respond. Later other problems had to be solved. The patient generated a huge amount of medical waste, treatment generated eight 55 gallon drums of waste every day. The state of Texas trucked the waste to GNL and we disposed of it properly. Other issues include cleaning secondary facilities and dealing with pets. An outbreak can be a time when you demonstrate the value of your facility to your country, be prepared to help, plan a communication strategy, use a trusted spokesperson and stay on message. Use the right people to do this, for example, Thomas Ksiazek, senior leader at GNL has experience responding to outbreaks going back to 1977. Anticipate and welcome involvement of political leaders. Be prepared to provide definitive diagnostics. Train lab and clinical staff on PPE and patient management before the need arises and don't forget waste management.

During the question and answer session a Chinese participant asked about GNL's "official" responsibilities during the crisis, where there problems delegating authority when making

official statements? Le Duc said that he did not have the responsibility to speak on behalf of the U.S. Government (even though the lab is a “national” lab) and also that he did not get paid extra for any of this, he said that it was part of our duty, to the community, state and nation. During the response GNL had to reprioritize some of its basic research, like vaccine development. That said, extra investment paid off in the good will and support that GNL received. Good statements by public officials help preserve the prestige of lab. He also said that the community was very supportive from the beginning because GNL leaders spend a lot of time communicating and maintaining a dialogue with local leaders and frequently notes the economic value that the facility creates. For example GNL did a 20 year economic forecast, noting that GNL generates more than 1 billion for the community. An audience member noted that China was also prepared to respond to Ebola. Government leaders across agencies and ministries have had many meetings but the response would have been organized by the Ministry of Health and Family Planning if there was an Ebola case in China. An audience member asked for more details about how to treat clinical medical waste. Le Duc explained that the waste generated by the Ebola patient was initially treated with chemicals and not autoclave because Dallas did not have a large enough facility. Chinese audience members noted that China does not have a large autoclave clinical waste capability and needs to come up with a strategy. In China the emergency response is organized by the Chinese CDC. Le Duc noted that GNL played a supporting role in the Ebola patient response, the U.S. CDC had primary responsibility for the national response but because the case happened in the state of Texas GNL naturally had a larger role. A Chinese participant noted that the U.S. system is different than in China but noted that if anything happens in Wuhan, the first sample would go to Hubei province CDC first and that the local facilities would also have a larger role.

The first day ended with a round table discussion chaired by **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS) and **James Le Duc** (Professor, Galveston National Laboratory). The chairs reviewed the discussion from day one. Yuan noted that excellent science is going forward in China and in the United States but that new research techniques and risks associated with certain research are raising some policy issues at the national and international level. How do we work together to create regulations that will not hinder the good science going on? He say many opportunities for collaboration and exchange between China and the United States but looked to the future by asking how do we educate students on technical issues but help them understand the context of global challenges going forward? He noted that several BSL-4 labs are about to open in China and asked about how to best share virus stocks, reagents and the tools and techniques necessary to do the critical scientific work the labs were designed to do?

Yuan first noted that the day one presentations on combating emerging disease control are good basis for future communication and collaboration; the United States and China can find common interests in these areas. He noted that NAS and NAM and CAS, while different types of organizations, have the same basic objectives to promote science for the development of the world. However our communities have different ways to approach crisis; China should do a better job explaining our system and what happens when there is a

problem in China and how it is addressed. We have lots of processes in place but we can learn a lot from the American side on understanding how to effectively manage crisis. He said he was concerned about how scientists can manage advances of new technology. Scientists have mostly used modern technology and science to do good work but today some research poses risks that should be acknowledged and addressed. He asked how our communities can better understand risks to prevent accidents or misuse not blocking research pathways that can produce real benefit. Finally he noted that scientists have a duty to help the public understand the value of scientific research and demystify their work.

An audience member agreed with the theme of his summary, and said that the problem of controlling emerging infections is a difficult problem that we share. One important problem to consider is how scientists can better understand natural disease reservoirs and interpret sequence data from nature? Today it is easy to generate sequences but it remains hard to understand what a given sequence means regarding phenotype. What other kinds of information do we need to collect to solve this problem? Regarding research that carries some risk, we should also think about the kinds of experiments that warrant further discussion or review and address the problem before outsiders challenge the rationale to do the science.

A Chinese participant said that we know that bats and birds host potential pathogens and that the scientific research community is working across China to map reservoirs. We have generated a lot of sequence information over the past several years but we don't understand why diseases emerge when they do; more collaboration on reservoirs is needed. They said that there is a lot China can learn from the GNL, but not just scientifically. When managing a laboratory transparency and trust are important. BSL-4 labs are huge investments and require millions of dollars to run, we want the world to understand what we are doing so they will support what we do. The participant said that it would be good to see institutional level collaboration between The Wuhan National Institute of Virology (NIV) and GNL and that CAS could spend money to help support the collaboration. CAS has several mechanisms to support international engagement and collaboration including funding international exchanges and fellowships for people from abroad to come to China and do research. Also scientists in China can propose international projects that CAS can fund, something could be done jointly on the ecology and evolution of infectious disease. CAS is already working with the U.S. NSF and NIH, the program manager will visit NIV next month. We can use all these resources.

Another Chinese participant said that the group should be most interested in collaborating on pathogenic viruses and should focus on significant viral threats to human health. China CDC is working to discover unknown pathogens. He also stated that the U.S. and China should share their experience responding to emergencies. Scientists will have to work with the policy makers to prepare for infectious disease emergencies. This could be a topic for a joint report.

A Chinese participant noted that sharing viruses even domestically is difficult and asked how the scientific community can overcome this logistical problem? They have created a consortium to share samples within China, but sharing samples across international borders is

more difficult. Another participant said that there are many issues to solve at the policy level, for example shipping live virus is an especially big problem; however there are techniques to ship parts of the viral genomes. More science can be done to overcome the policy problems. An American participant noted that the group is focused on public health and science but should remember to engage the veterinary and the agriculture production sector (in the spirit of One Health). The U.S. and China can expand this collaboration like they have with the long-standing collaboration on influenza.

Yuan said that on the second day the group would hear more about China's new BSL-4 facilities, biosafety, biosecurity and regulation and management of research in both China and the United States. These topics might also be the basis for future collaboration. Also to better accommodate collaboration we should consider a more formal linkage between our groups, like a memorandum of understanding. After the meeting we should identify priorities and write joint remarks to our academy presidents about the meeting and what our two academies can do together on these issues to provide a channel and bridge for future.

Day 2

Session 3: Emerging infectious diseases and global health security. The chair, **Pei-yong Shi** (Professor, University of Texas, GNL) noted that the session would cover anti-viral countermeasures (strategy and R&D) and improving the high containment laboratory's role in emergency health response.

George Gao (Academician, Institute of Microbiology, CAS) discussed biosafety, biorisk, and biosecurity pathogens and human behavior. Gao said he has experience responding to natural outbreaks all over the world, and played a leading role in China's response to the 2014 West African Ebola outbreak but has less experience addressing or thinking about deliberate misuse of biology. He stated that the meetings between Chinese and American experts are important because more and better collaboration can help prevent accidents and has the potential to prevent misuse. He started his presentation by asking two questions, why do we have so many new viruses and why do we have periodic disease outbreaks? Gao noted that today the world is more interconnected, human behavior has been a driving force for many of the changes. He spoke of the H7N9 outbreak of 2013 and the difference between low pathogenic and highly pathogenic avian influenza. He said we do not know what HxNy flu virus will cause the next significant loss of human life but we do know that it will come eventually. China is a place where the mixing occurs. Influenza continues to evolve and is very complex, in China new flu strains circulate and evolve in live poultry markets. What is the solution; close the markets? He said Ebola, Nipa, and MERS, viruses also spill over from natural reservoir to humans. MERS is especially troublesome; coronavirus recombination is common. Will MERS become like flu? It is a constant struggle to control the effects of virus evolution and adaption into new hosts. Looking at how viruses adapt to new hosts is a key area where we can cooperate. We can exchange methods for studying adaptation and work with the international community. He has advocated for younger people to address emerging communicable disease especially in Africa and noted that China CDC is thinking and

working more internationally and providing aid and financial support to efforts in other countries. He helped establish the Sierra Leone China Friendship Biological Safety Association. Gao also discussed the disease surveillance context of the announced Chinese government Belt and Road Initiative, the Chinese effort to create an economic zone through the historic Silk Road region of central Asia.

Gao stated that the U.S. and China should have a real discussion on how to work together to consider the risks from gain of function and loss of function research, it is not in either of our countries interest to create disastrous viruses. Going forward, to maintain and increase public trust transparency by scientists is critical.

An audience member working on MERS said he found a very high viral presence in camels in Pakistan and also found evidence of the virus in humans, but did not see clinical cases. He asked Gao why this might be the case? Gao was not sure; he suggested maybe virus mutation? He proposed that maybe the virus population in Pakistan has low pathogenicity? An American participant said that he did not see the Ebola outbreak virus become more virulent during the 2014 outbreak. Gao stated that they have no evidence one way or the other but are still doing sequencing. An audience member asked if Gao was trying to say that bats carry a MERS-like virus and what might be the real host of MERS, bats or camels? Another also asked if we are likely to see an influenza like MERS virus in the future? Gao said that camels are just intermediate hosts and that he thinks that MERS may evolve to be more flu-like in the future.

Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University) spoke about China's use of the One Health strategy to respond to emerging infectious diseases (EIDs). Lu described One Health as a strategy that considers all related contact between humans and animals to combat and possibly predict EIDs. He explained that One Health is a particularly appropriate strategy in Guangdong province. Guangdong is vulnerable to EIDs due to its location, culture and high population. Because of the emphasis on freshness in Cantonese food, animals are kept alive until just before they are consumed. This makes Guangdong province, and especially the live animal markets a hotbed of vector borne zoonotic disease outbreaks. Many are actively working to implement One Health in Guangdong. The first SARS outbreak was in Guangdong. Infected bats came into contact with civet cats and then the virus evolved and jumped to humans. Another reemerging infectious disease of concern in the region is brucellosis, associated with imported sheep. Lu also detailed the five waves of H7N9 outbreak in China. 95% of human cases followed exposure to live poultry. He noted a recent novel mutation (in March 2017) that showed a new high pathogenicity avian flu. China has examined the impact of closing the live poultry markets to curb future outbreaks but noted the negative impact on the local economy. He cited [an article](#) that details China's response to EIDs and the need for a One Health approach in future responses. An audience member agreed that people in Guangdong eat "everything" which poses a unique disease control problem.

Zhengli Shi (Principal Investigator, Wuhan Institute of Virology, CAS) spoke about the

evolution and pathogenesis of bat SARS like coronavirus (SL CoV). Shi is working on corona virus and other emerging infections and said that bat SL CoV could be the next pandemic. He described the cases and countries involved in the 2003 SARS outbreak. For bat corona virus to cause the next SL CoV outbreak many factors will have to be involved. His research looks at the pathogenesis of SL CoV in transgenic mice. It replicates very well in mice and human tissue. The virus can easily enter human cells but in the animal model the virus has less pathogenesis; this is good news. His research shows that some bat SL CoVs have potential interspecies transmission to other animals and humans. An audience member asked if one could clear an infected bat of this virus? Zhengli said that he tried this with Nipah virus in bats and bats could produce antibodies, clear within seven days. In nature we found that bats produce antibodies to some viruses but not all. SL CoV can exist in bats for several months. An audience member said that you cannot be sure that this pathogen will cause human disease and that more data are needed. Right now infections are very mild and there is no clinical syndrome. Further studies are needed.

Mifang Liang (Principal Investigator, National Institute for Viral Disease Control and Prevention) discussed the epidemiological characteristics of severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery to current knowledge. SFTS in china recently emerged; it was discovered in 2009 and 2010.

Emergency of SFTS in China, 2009-2010



She said that it has been very hard to find the virus in nature. It was only recently added to the International Committee on Taxonomy of Viruses (ICTV) catalog. In the catalogue it is described as a highly pathogenic phlebovirus in the family bunyaviridae. It is now listed by the World Health Organization as a special pathogen of concern. She recently mapped the genome structure of the virus. The number of cases are increasing every year but the case fatality rate is decreasing every year. Most patients are from the Chinese countryside, about 86% are farmers. Over 10,000 cases in 25 provinces were reported since the first discovery of SFTS virus. Peak time for exposure and infection is May to Aug due to weather.

An audience member asked how do people become infected? Mifang said that is unknown, so far only local endemic investigations and we have isolated virus from ticks. It has been determined that it is transmitted by ticks and person to person. Ticks may act as a major vector for SFTSV transmission and domestic animals are widely infected by SFTSV, but reservoirs or hosts are not known. Person to person transmission of SFTSV has occurred through direct contact with patient blood containing high virus load. They have not done studies to understand how humans have become infected. She did note that most patients do

not have tick bites or exposure recently to slaughtered animals. In the future they plan to do experiments to determine how humans get the virus.

Linda Saif (Professor, The Ohio State University) talked about animal coronaviruses as a global threat to humans and animals. Coronaviruses (CoV) continue to evolve and emerge globally as a cause of fatal respiratory and enteric infections of young animals and humans. Saif's talk covered SARS and MERS coronaviruses. She explained the basic morphology of the virus and the diversity of avian and mammalian CoVs. Coronaviruses are genetically diverse due to frequent mutation and recombination. The viruses can be transmitted among wild ruminants and to domestic ruminants or vice versa. She cited two historical examples for the predicted transmission of bovine CoV to humans and described how bovine CoVs, MERS CoV and SARS CoV infect their hosts and whether camels are the host or intermediate reservoir for MERS infection of humans. She provided data documenting that humans on statins (for hypercholesterolemia) are more susceptible to Norovirus as an example of how co-morbidities or drugs to treat them could affect the high susceptibility of the elderly to MERS and SARS. Because SARS CoVs are documented in bat reservoir hosts, she expressed a concern that SARS could reemerge from an animal reservoir and cause another pandemic. It is also important to determine how MERS CoV is transmitted (camel to human or human to human) so that the scientific community can better target the virus, design preventive measures and prevent such a pandemic. Right now the strategy is to manage and reduce contact with infected camels or camel products, but there are many unresolved questions. The epidemiology of MERS CoV infections in camels and its zoonotic transmission is poorly understood, but it resembles respiratory coronavirus infections in cattle. To date no vaccines have been licensed for any respiratory CoV infection.

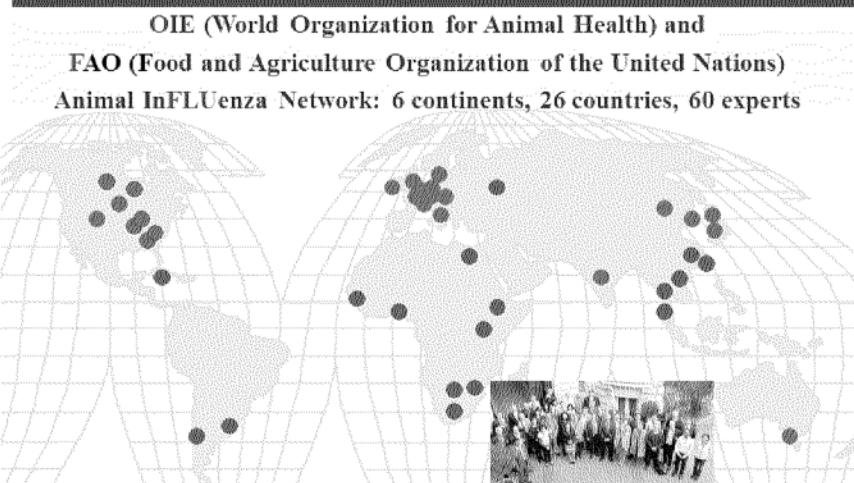
An audience member asked about the closest relative to MERS? Saif stated it is bat and camel genogroup C betacoronaviruses. An audience member said that they were trying to determine if all coronaviruses originated from bats. What is the origin of swine porcine epidemic diarrhea (PEDV) coronavirus? Saif said we don't know, but added that PEDV died out after its initial discovery in Europe in the late 1970's, until it re-emerged there recently. One theory is that it was originally not completely swine adapted. A Chinese participant suggested that if SARS is gone why should the government keep doing SARS research? What is your suggestion on how to prepare for another attack of SARS? Saif said that labs should keep all reagents available and continue to research CoV vaccines and antivirals as the bat reservoir is still there. We still may see isolated spillover events, but only when the virus acquires the ability to transmit efficiently from human to human and persist will it result in further pandemics and high morbidity and mortality as was the initial case for SARS and continues for MERS. It is important to stay vigilant. An audience member asked about farmed civet cats relationship to spread? Saif said there was genetic evidence of SARS interspecies transmission between civet cats and humans and that this is another argument for closing live animal markets; when the Chinese government got rid of civets in live animal markets, this appeared to aid in stopping SARS transmission and the epidemic in China. An audience member supported this statement and said that Chinese data supports transmission between bats and civets in a market environment but studies indicate that there is no SARS CoV in wild civets.

Chengfeng Qin (Professor, the Academy of Military Medical Sciences) described existing weapons against the emerging Zika virus. Chengfeng discussed the original discovery and spread of Zika from Africa to more recent regional epidemics and detailed isolating the

Chinese Zika virus strain. He published a paper in January 2016 about Zika in China and is working with Pei-yong and George Gao to do further work on the virus. He noted that there is currently no case of Zika infection reported in mainland China but there are examples of several imported cases. He is looking for further collaboration and communication on Zika with American researchers. Audience members noted that much of the population of Brazil might have Dengue already and asked about the relationship between Dengue and Zika. Chengfeng suggested that the answer is related to how the antibodies interact.

David Swayne (Director, USDA Southeast Poultry Research Laboratory) discussed avian influenza at the animal-human interface and global challenges for scientific contributions to control. Swayne works to combat animal flu issues and also implements the One Health concept to prevent animal health issues from becoming human health problems. He introduced the World Organization for Animal Health and Food and Agriculture Organization for the United Nations (OIE/FAO) Network of Expertise on Animal Influenza (OFFLU) and discussed the importance of combating the influenza virus at the animal-human interface. He then discussed the 42 specific highly pathogenic avian influenza (HPAI) epidemic cases. He said that animal flu continues to be a threat to humans, with 453 recorded deaths since 2003 for H5N1 bird flu. He reported a significant number of H3N2 infections at agricultural fairs in the United States and 534 H7N9 HPAI deaths in China since 2013. He explained that we know little about what virus may cause the next pandemic. OFFLU works with WHO and OIE to track outbreaks and prepare for epidemics and pandemics; the group helps WHO identify appropriate prepandemic vaccine candidates by providing genetic and antigenic data, and epidemiological information on circulating animal flu strains.

1. OFFLU Network of Animal Influenza Experts



Swayne described several avian influenza poultry vaccines strategies and the many different seed strains licensed around the world. A major function of the OFFLU is to help collect and analyze influenza virus data to assist countries and companies in the decision process on what to produce and when.

An audience member asked about reasons for changes to the strains over time and if he attributed changes to vaccination or natural drift over time? Swayne did not have a single

explanation for the changes as the drifting of field viruses is different for HPAI versus low pathogenic avian influenza (LPAI) viruses, but noted that we see different types of changes in countries that are doing vaccinations compared to countries with endemic infection with LPAI viruses. Before large poultry vaccination programs, changes in the hemagglutinin antigenic sites were random, now they are driven at specific sites on the surface of the hemagglutinin protein.

Gong Cheng (Professor, Qinghua University) presented his research on non-structural protein 1 a key for flavivirus transfer from host to vector. The discussion centered around flavivirus, particularly Dengue and the Dengue virus transmission process and the prevalence of Zika infected mosquitoes via a "mosquito-host-mosquito" transmission cycle. He is studying transmission of Dengue from human to mosquito, and hypothesizes that factors in human blood affect transmission.

Pei-Yong Shi (Professor, University of Texas) discussed the rapid response to Zika virus emergence including diagnostics and the state of vaccine development. He addressed the devastating clinical outcomes of Zika virus infection: microcephaly. He noted that virus can persist in the male sexual reproductive tract well after clinical symptoms cease and that 80% of individuals are asymptomatic throughout disease. There are two way to diagnose Zika now: detect virus or detect antibodies. He added that there are two Zika vaccines in phase 1 trials and discussed platforms to manufacture inactivated Zika vaccine and experiments to test vaccines. One of the live-attenuated vaccines has been proven to protect monkeys from Zika infection but more work is needed.

Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment was chaired by **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS). Presenters discussed some of the BSL-4 high containment labs in China and the United States, the importance of community relations and public communication between the laboratories and the surrounding community, the importance of clinical facilities in biocontainment labs, special maintenance and operational issues associated with BSL-4 labs, the role of BSL-4 labs in outbreak response and the importance of maintaining reference collections and reagents.

Peijun Zhai (Division Director, China National Accreditation Service for Conformity Assessment) discussed the process of accrediting biological safety labs in China. He first detailed China National Accreditation Service (CNAS) the authorized accreditation body in China. CNAS has more than 1000 members and 4000 technical experts on call with 260 technical staff, it is the largest national laboratory accreditation body in the world. The SARs outbreak provided the impetus for biosafety lab accreditation in China. He listed the laws and regulations and standards related to biosafety and for biosafety labs in China and described the accreditation process CNAS runs for biosafety labs. Accreditation schemes for labs for biosafety and laboratories start with the Chinese code for laboratories – General Requirements for Biosafety GB 19489. The objective is to ensure biosafety of all labs. Currently 71 biosafety labs of various types are accredited by CNAS in China. Article 20 of

national accreditation says that labs at the BSL-3 and BSL-4 levels require national accreditation in China. He also discussed the difference between certification and accreditation in China.



An audience member asked whether unannounced inspections take place during the five-year period after initial laboratory accreditation. Peijun said that during the interval from assessment to reassessment CNAS does surveillance at the facility on a regular basis. Usually, the first inspection takes place after 1-1.5 years and then approximately every six months.

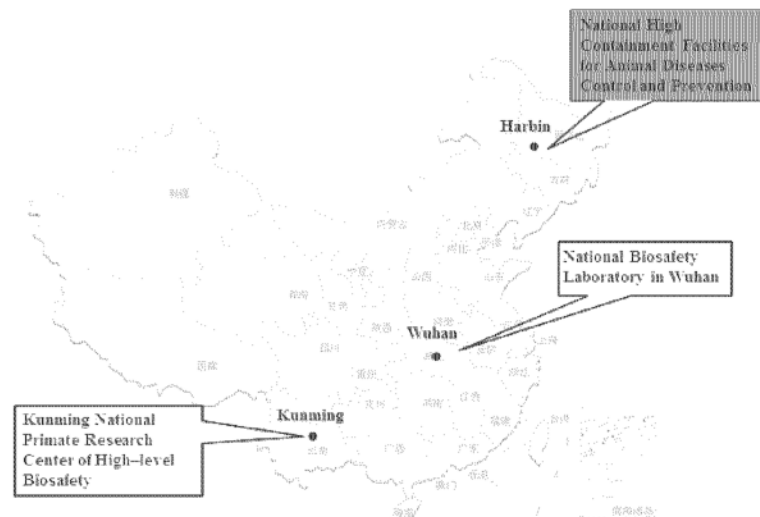
Thomas Ksiazek (Professor, Galveston National Laboratory) talked about biocontainment operations and maintenance and UTMB GNL and training personnel to work at other containment facilities. Ksiazek discussed BSL-4 biocontainment operation and maintenance at the GNL, noting that a lot goes on behind the scenes. The cornerstone is compliance with the current version of the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) guidelines, the select agent law adds additional requirements and yearly inspections in order to maintain certification. Key concerns of BSL-4 lab operations are reoccurring expenses, like security costs, utility payment and training. GNL is unique in the United States in that it is operated by a university (the Boston University National Emerging Infectious Diseases Laboratory is not operating yet).

Ksiazek described the unique safety, maintenance and information technology operations at the lab. GNL works with operators and researchers from many other countries, it had maintained a worldwide biosafety training center, but funds for the center have recently dried up and directors are working on options to sustain the program. Still have some interaction with Chinese institutes like NIV.

An audience member ask how long before a person can operate in the high containment space unsupervised? Ksiazek said it takes about 100 hours of mentored training per person but it depends a lot on the individual in getting to the mentored training tier of the overall BSL-4 training regimen. An audience member asked how countries with limited resources, like in Africa, should undertake diagnostic lab response to support outbreak control. Ksiazek said don't establish a BSL-4 in that kind of environment but rather set up a field laboratory in which personal protective equipment (PPE) is used to protect the individuals handling the clinical materials from patients, who are being cared for in the same environment. An audience member asked about GNLs precautions against flooding and severe weather and their waste management procedures and record back up. Ksiazek said that Hurricane Ike did inundate Galveston Island in 2008 but that the GNL building was not affected; GNL had power and actually acted as a life boat for the remainder of campus. Waste stream is done as

standard disposal for these facilities. Also GNL incinerates solid waste and everything coming from the laboratory is autoclaved prior to going to the incinerator. When asked about potential for losing the viruses stored in the lab, the GNL serves as a reference center with emergency backup power and the viruses in the reference center collection are lyophilized and he said he is reasonably sure that the viruses would survive a problem. In conclusion he said that some labs are in rural areas some are in population centers. High containment facilities have shown that they can operate safely in populated areas.

Zhigao Bu (Director General/Principal Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences) discussed the design, construction and operation of Chinese National High Containment Facilities for Animal Diseases Control and Prevention (NHCFADCP) at the Harbin Veterinary Research Institute. Zhigao said that his institute, the Harbin Veterinary Research Institute is the most active institute for animal disease control in China. It is important to have such a facility because China has a significant percentage of the worlds livestock (fifty percent [800m] of the worlds pigs for example), and numerous agricultural health challenges due to its diverse and large population. He described SARs as a huge shock to the agricultural sector. After the SARS outbreak in 2004 China launched a plan to build three ABSL/BSL-4 facilities; in Harbin, Kunming and Wuhan. The Harbin lab was designated to focus on animal disease control and prevention.



He said that when they started, they had no idea how to construct BSL-4 lab buildings and facilities so formed lots of partnerships. They worked closely with labs in Australia, Japan and Canada, the USDA National Animal Disease Center and Kansas State University in the U.S., labs in Hamburg and Reims in Germany and the Jean Mérieux BSL-4 Laboratory in Lyon, France. He showed pictures of the construction of the NHCFADCP.



Construction of the Harbin lab was completed in 2016. The lab is composed of 5 floors with two below ground. The Lab has nine working areas for BSL-4 and 10 for BSL-3. He discussed security measures for the facility, including access and monitoring of personal. They hope to have CNAS certification by the end of this year.

An audience member asked which pathogens they anticipate studying at in the BSL-4 portion of the lab? Zhigao said that is currently difficult to answer, interested in many pathogens, but need to get approved for each by Ministry of Health and Family Planning and it can be difficult to get approved. They work with many pathogens at the BSL-3 portion of the lab already; Brucella, flavivirus, SARs, and avian influenza. An audience member pointed out that Zhigao's photos showed workers using two types of suits in the lab. He said that the blue suits are made in China and the white ones are made in France. He stated that there is a big difference in the price between the domestic and foreign manufactured suits. Chinese suits are not yet certified for use in BSL-4 space.

Longding Liu (Institute of Medical Biology Chinese Academy of Medical Sciences) [represented Dr. Yunzhang Hu, the Principal Investigator and the head of the BSL-4 lab at the Kunming Institute of Medical Biology who was unable to attend the meeting.] Longding spoke about the Kunming Institute of Medical Biology National Primate Research Center of High-level Biosafety. Like the NHCADCP he said that the lab was created after SARS in 2004 to focus on basic research to combat animal and human disease.



The facility was originally designed as a production facility for vaccines. He said at first they did not have any idea on how to create a BSL-4 lab but worked closely with other countries and institutes to complete the construction. The lab cost 300m CNY and includes almost 3000 sqm of BSL-4 workspace. The campus includes a monkey breeding facility built 15km from Kunming city. Longding described the security for the facility, and showed photos of BSL-2, BSL-3, and BSL-4 suites. In the 3 and 4 rooms they use secondary negative pressure cabinets for housing monkeys. Like Harbin and at other BSL-4 facilities they have an extensive staff for maintenance and engineering support, air handling and cleaning.

ABSL/BSL-4 Labs



He said that the new BSL-4 lab and existing vaccine R&D platform will make the campus a more efficient producer of vaccines for infectious disease control.

An audience member asked about his thought on collaboration? He said that the facility doesn't have any experiments ongoing in BSL-3 right now but that they are seeking collaboration to facilitate work in the BSL-3 and BSL-4 spaces.

Session 5: Biosafety, biosecurity and bioethics chair **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) introduced the session on new technology for laboratory biological risk management, improving response to incidents at the lab, improving biosafety and biosecurity training, laboratory leadership, and culture and ethics.

Zhiming Yuan (Principal Investigator, Wuhan Institute of Virology, CAS) described the Wuhan Institute of Virology BSL-4 laboratory. He noted that some of the participants would visit the facility the following day. He said that he hoped to have a license soon so the lab could begin research in the BSL-4 areas. He stated that they had learned a lot from SARS and naturally occurring disease outbreaks but China still has a weak understanding of intentional misuse and how to deal with the dual use dilemma. Scientists have different motivation for doing research. Most scientists around the world who do gain-of-function research have good reasons to do the research but their needs to be a risk benefit balance. He asked how to make this balance and suggested several questions that might be asked when considering the benefit and risk of certain experiments. Law and regulation cannot answer all these questions. We must first consider biosafety in the laboratory. China has a biosafety legislation framework which includes regulation measures and codes related to all aspects of biosafety. But not everything can be easily regulated, like whether to do certain new experiments. He listed existing laws and ethical codes that could guide biomedical research and bioethics and discussed how laws and ethics overlap in biology and areas of bio ethics related to medical experiments on people. Zhiming further noted that CAS has its own bio ethics committee. He suggested that we combine biosafety, biosecurity, and bioethics as a way to address the spectrum of bio risk more broadly. He said that the life science community needs to establish science code of conduct and promote joint work on ethics, and create a culture and philosophy of ethics.

A Chinese participant said that some institutes already teach biosafety courses and therefore, some students already have a strong ethical understanding. They know the dangers inherent in the pathogens that are contained in the BSL-3 and 4 labs. An audience member suggested that biosafety and biosecurity are different and asked which is most important for China today? Zhiming said that they are equally important and should be giving significant attention.

Thomas Ksiazek (Professor, Galveston National Laboratory) discussed regulatory issues affecting the operation of a functional high containment lab including obtaining, shipping, maintaining and exchanging high hazard pathogens. Ksiazek focused on biosafety and biosecurity and the regulatory environment in the United States; he said that the U.S. was the first country that had a national standard for biosafety. The impetus for this began at the Asilomar conference in 1975. In 1984 the U.S. CDC produced the first Biosafety in Microbiological and Biomedical Laboratories (BMBL) handbook that categorized pathogens into risk groups; they are now working on the 6th addition of the BMBL. It sets the operating principles for biocontainment labs. When asked he often says that he “doesn’t do safety for a living but does safety to keep on living.” However he said that there is not enough focus on how safety regulations effect the science that the labs are designed to do. In the United States, the regulations that have been put in place since the 9/11 terrorist attack are mostly about

security, not safety. One of his key concerns is shipping samples; in the U.S. it was simple until about 5 years ago. Shipping of pathogen isolates is becoming prohibitively expensive. Now World Courier is the only group left that routinely ships select and BSL-4 agents in the U.S. He is seeking to get the United States Government to pressure the FedEx company to start shipping again. Another problem is that aircraft captains have the right to refuse dangerous goods shipments; the pilot has the final word on what goes on the plane. This has prevented shipping samples out of outbreak areas in the past. For example it was really difficult during the 2014 Ebola epidemic to get samples from West Africa; the U.S. chartered a jet to get Ebola isolates back to U.S. and the British Government utilized a ship. It has also become difficult to get necessary permits (through the U.S. department of Agriculture and the U.S. Public Health Service) to allow the efficient operation of a reference facility in the U.S. In addition we have to deal with regulators who have responsibility for laboratory certification and necessary permits; they usually have no practical experience working with high containment pathogens. Intellectual property issues are also becoming increasingly difficult; institutional lawyers are delaying exchange of viruses and reagents and not abiding by older principles of scientific cooperation between investigators doing non-commercial research. Collectively we can make a difference; scientists need to address the trend of over securitization. A Chinese audience member said that in China internal movement of samples between CCDC and CAS is really difficult as well with lots of bureaucratic hurdles. China only uses one group for international shipping.

David R. Franz (Former Commander, U.S. Army Medical Research Institute of Infectious Diseases) spoke about laboratory leadership, responsibility and progress. He said that his goal as an institutional leader was to create a functional ethical organizational cultural so the institution could do good work. In the laboratory environment the key is to balance regulation with progress. He stated that biosafety is much easier than biosecurity, because it is difficult to define the risk or to measure success in biosecurity. The NAS “Fink committee” report *Biotechnology Research in an Age of Terrorism* that discussed dual use research was ahead of its time. The committee ultimately concluded that education and awareness are key to addressing the threat. Following that study, the U.S. Government put together the National Science Advisory Board for Biosecurity (NSABB) to address dual use research. Franz discussed the evolution of biosecurity thinking in the U.S. noting only one accidental death—and not from a true select agent—is associated with the U.S. Select Agent program (and three deaths before 1969 when the U.S. offensive biological program was halted). He compared that to the more than 700,000 hospital acquired infections and 400,000 deaths due to medical mistakes in recent years.

He pointed out that leaders and scientists in the high-containment lab community must understand that the actions by a few affect the many. A negative incident in one laboratory can impact the ability of many laboratories to function. An audience member asked how best to balance security with transparency and how to build trust when accidents happen all the time? What about deep rooted mistrust due to social structure? What is your strategy to build trust with the Chinese and with other countries? Franz said it is important to create “nodes of trust” globally between individuals. Building networks and nodes is the model we use at NAS, the strategy is called “Track II diplomacy,” (with Track I being formal government meetings between officials) interaction and meetings between nongovernmental technical experts in the U.S. and in other countries. He noted that we can do the same thing within any country by

reaching out to others and forming personal connections to share advice and best practices in areas of mutual concern and interest, but there is no perfect solution to eliminating biosafety and, particularly, biosecurity incidents, we can only minimize the risk. A Chinese participant agreed that more enlightened leadership is key for safety and without sacrificing productivity and there is a need to build trust between people, directors and workers at these facilities. But, he asked, for BSL-4 labs, how could we collaborate together to be more productive? The participant suggested that collaboration occur between the three new labs in China.

Zhiming Yuan (Principal Investigator, Wuhan Institute of Virology, CAS) and **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) presented conclusions from the meeting and led a discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on emerging infections, laboratory safety and global health security and other topics discussed at the meeting.

Franz presented summary thoughts from the meeting to the group. He first identified some key topics that came up during the presentations and discussions:

- Role of scientists in balancing regulation, safety, security and productivity
- Popularizing Science (helping the non-science community understand science)
- Emerging infections (reservoirs, natural populations and sequence data)
- The importance of transparency within and between countries
- The importance of trust within and between organizations and nations
- The One Health (animal health, the economy, human health) concept
- Responsibility of the science community to self-police and in some cases, regulate

He also presented some possible joint project ideas which had arisen during the meeting:

- Direct cooperation between CAS and NAS like formal institutional partnering and scientific collaboration
- Joint “Table Top Exercise” detailing hypothetical response to an outbreak
- Outbreak and incident response training
- How to make decisions regarding “Dangerous Research” on certain pathogens and gain of function research in general
- A joint manuscript of shared values and concerns
- Overcoming barriers to sharing strain collections and transport of pathogens
- Exchange and training of students

The audience suggested other issues including exchanging reference strains as many strains in China are interesting to researchers in other parts of the world. NAS and CAS representatives could jointly write a paper addressing how best to facilitate strain exchange. Others said that would be very useful but we must follow international guidelines like the Nagoya Protocol on Access to Genetic Resources. Also domestic property rights become an issue; if an outbreak occurs in a third country and we isolate virus, the virus belongs to country where sample is from. This makes exchange difficult.

Zhiming offered several additional suggestions:

- Create an official agreement between BSL-4 operating institutions to promote institutional collaboration.
- Chinese and American groups could work together to encourage scientists to create a culture of trust, safety and bioethics. NAS and CAS should provide a platform for cooperation.
- The U.S. could do more scientist training and train the trainer training for Chinese institution staff and students.
- Support efforts to improve the free movement of sample material.
- NAS and CAS could write a joint report and from that we can extract important information to provide to CAS and NAS leadership.
- CAS can form a core group for NAS to talk to about future activities. NAS will work with CAS to bring scientist to the U.S. to continue the discussion.

In discussions after the meeting the chairs decided on the following list of near term action items as priorities:

- Scientist exchange and training, particular for BSL-4 laboratories.
- Identifying joint BSL-4 research projects that are beneficial for both the U.S. and China.
- A memorandum between UTMB GNL and the Wuhan Institute of Virology (and also the other two Chinese BSL-4 laboratories) for both long-term and short-term collaboration and partnership.
- Hold further face-to-face meetings in the United States at the Galveston National Laboratory. Topics for the workshop will likely center around specific high biocontainment “operational” issues such as:
 - An overall strategy and creating centers for effective high containment laboratory staff training.
 - Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff.
 - Conducting “well-documented” studies under BSL-4 conditions. including practical aspects of non-human primate experimentation in the BSL-4 space.
 - Development and maintenance of best practices for long-term safe and productive BSL-4 operations.
 - Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
 - Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities.

Longer terms priorities:

- Enhancing our ability to share strain collections.
- Joint white paper that each side could use to educate political leaders and others.

- Promote international collaboration via China-US joint projects.
- Joint training programs between labs.
- Joint manuscript between individuals and institutions.
- Support improving biosafety and biosecurity at labs and trust building between scientists.



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as "**WIV**")

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as "**UTMB**")

WIV and UTMB hereinafter also individually referred to as a "**Party**" or collectively as the "**Parties**"

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as "**Memorandum**") their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other's rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) Notices

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

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In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name:

Title:

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Signature of UTMB Coordinator



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as “**WIV**”)

AND

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iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which

cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. CONTEXT

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

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i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name:

Title:

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Signature of UTMB Coordinator



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as “**WIV**”)

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as “**UTMB**”)

WIV and UTMB hereinafter also individually referred to as a “**Party**” or collectively as the “**Parties**”

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as “**Memorandum**”) their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other’s rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

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undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) Notices

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes,.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

- i) Title rights, copy rights, patent rights or any other intellectual rights generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.
- ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.
- iii) Once WIV and UTMB are satisfied that a given discovery arising from a joint project under the MoU is worth protecting by a patent, the inventors from both parties will be required to sign assignment contracts transferring patent rights jointly to WIV and UTMB; and a joint WIV/UTMB patent will be filed in countries to be determined by the two parties.
- iv) WIV and UTMB will assume equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor.
- v) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.
- vi) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own

[PAGE]

expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

- a. This MoU shall be identified as the parent document of any program agreement executed between the parties.
- b. Further agreements concerning any program shall provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.
- c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.
- d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.
- e. To advise either party on available areas of collaboration and advise the Chief Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.
- ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

- i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.

ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.

iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.

ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

i) Either party may terminate the MoU if the other party is in breach of terms and conditions of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU by giving six months written notice.

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

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ii) Any dispute, difference or question which may arise at any time between the parties, which

cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. CONTEXT

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

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In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name:

Title:

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Signature of UTMB Coordinator

From: LeDuc, James W. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=JWLEDUC]
Sent: 7/5/2017 10:19:45 AM
To: Liu Longding (b)(6) Hu Yunzhang (b)(6)
CC: Shi, Pei yong [peshi@UTMB.EDU]; Benjamin Rusek (BRusek@nas.edu) [BRusek@nas.edu]; Dave Franz (davidrf Franz@gmail.com) [davidrf Franz@gmail.com]
Subject: RE: Collaborations on training and research
Attachments: 20170705-MoU between WIV and UTMB.DOC

Dear Longding and Yunzhang,

You will recall that one of the action items from our recent meeting in Wuhan was to establish more formal agreements between our research organizations to facilitate greater collaborations and personnel exchanges. The goal was to have these agreements in place by the time of our next joint meeting to be held here at the GNL later this year or early in 2018. Towards that end, the Wuhan Institute of Virology has drafted the attached MOU that is now being reviewed by my colleagues here at UTMB. We hope to have a final document ready for signing in the very near future. I'm wondering if a similar agreement might be established between your Institute and UTMB? Could you please review the attached draft MOU and see if it meets your institutional requirements. If it does, perhaps we could move forward with the goal of having an agreed upon document that can be announced at our next meeting.

Thank you very much. With best wishes,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as “**WIV**”)

AND

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undertaking by both parties and each other's operations without the consent of the other party.

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The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

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- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
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V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own

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XIV. CONTEXT

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

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In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name:

Title:

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Signature of UTMB Coordinator

From: LeDuc, James W. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=JWLEDUC]
Sent: 7/5/2017 10:19:45 AM
To: Liu Longding (b)(6); Hu Yunzhang (b)(6).com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Benjamin Rusek (BRusek@nas.edu) [BRusek@nas.edu]; Dave Franz (davidrf Franz@gmail.com) [davidrf Franz@gmail.com]
Subject: RE: Collaborations on training and research
Attachments: 20170705-MoU between WIV and UTMB.DOC

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Thank you very much. With best wishes,

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James W. Le Duc, Ph.D.
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University of Texas Medical Branch
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The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as “**Memorandum**”) their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other’s rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

[PAGE]

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) Notices

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes,.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

- i) Title rights, copy rights, patent rights or any other intellectual rights generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.
- ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.
- iii) Once WIV and UTMB are satisfied that a given discovery arising from a joint project under the MoU is worth protecting by a patent, the inventors from both parties will be required to sign assignment contracts transferring patent rights jointly to WIV and UTMB; and a joint WIV/UTMB patent will be filed in countries to be determined by the two parties.
- iv) WIV and UTMB will assume equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor.
- v) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.
- vi) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own

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expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

- a. This MoU shall be identified as the parent document of any program agreement executed between the parties.
- b. Further agreements concerning any program shall provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.
- c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.
- d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.
- e. To advise either party on available areas of collaboration and advise the Chief Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.
- ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

- i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.

ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.

iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.

ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

i) Either party may terminate the MoU if the other party is in breach of terms and conditions of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU by giving six months written notice.

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which

cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. CONTEXT

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name:

Title:

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Signature of UTMB Coordinator

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Wednesday, July 5, 2017 1:09 PM
To: LeDuc, James W.; 张晗
Cc: 'Yuan Zhiming'; David Franz; Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: MoU draft of cooperation between WIV and UTMB
Attachments: NIV CAS NAS long meeting summary vf NIV.docx

Greetings Zhiming (and Han),

And here is the long summary of the meeting for your review. I included some slides when I thought they added clarification. I am sure that I missed some of the information but I think that this draft can form a document detailing the presentations and discussions that you could eventually post on your website. Please let me know what you think. I am also still interested in your thoughts on (or additions to) the short summary document I sent earlier.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, July 05, 2017 9:43 AM
To: 张晗
Cc: 'Yuan Zhiming'; David Franz; Shi, Pei yong; Rusek, Benjamin; Ksiazek, Thomas G.
Subject: RE: MoU draft of cooperation between WIV and UTMB

Thank you Han. We will review as soon as possible and get back to you.

Thanks, Jim

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Wednesday, July 05, 2017 3:41 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 'Yuan Zhiming' <yzm@wh.iov.cn>; David Franz <davidrf Franz@gmail.com>; Shi, Pei yong <peshi@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: MoU draft of cooperation between WIV and UTMB

Dear Prof. LeDuc,

Please see attached the MoU draft of cooperation between WIV and UTMB.

All your revisions and suggestions are welcome, and please help to arrange the review and approval from your side and send us the revised version as soon as possible.

With many thanks,

Han

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

May 17-19, 2017

Wuhan, China

Meeting Report

During the welcome session the Chair of the meeting for the Chinese Academy of Sciences (CAS) **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS) thanked the assembled audience of about 100 experts and noted that the meeting would focus on the importance of good science and good policy for controlling emerging disease. Yuan said the meeting is a milestone for Sino-U.S. cooperation on emerging infections, laboratory safety and global health and security and would lead to further cooperation between the U.S. National Academy of Sciences (NAS) and CAS and between the United States and China. **Xinwen Chen** (Director General/ Principal Investigator, Wuhan Institute of Virology, CAS) said that the Wuhan Institute of Virology, a key sponsor of the workshop, and an operator of one of China's Biological Safety Level Four (BSL-4) high containment laboratories, aims to improve fundamental research in virology and other areas of basic science by doing fundamental research to combat emerging infections and outbreaks in China and around the world to ensure global health security and safety in China. **Yaping Zhang** (Vice President/ Academician, CAS) was not available due to a family emergency so **Qingquan Zhang** (Department of International Affairs, CAS) gave short opening remarks on behalf of CAS. He extended congratulations to the assembled group on behalf of the CAS Bureau of International Cooperation (who provided some of the funding for the meeting) and said that science in China is booming but groups like CAS and NAS need to look back to see how well we have done in the past and provide guidance and advice for the future.

Linda Saif (Professor, The Ohio State University) opened the meeting on behalf of the NAS. The institution has 2290 members, 460 foreign associates as affiliates and counts 200 noble prize winners among its members. NAS was established in 1863 to provide independent advice to the U.S. government and has done so for over 150 years including advice on building the Panama Canal and the launch of the first U.S. satellite. NAS was involved in organizing the 1975 Asilomar, California conference to establish a common understanding of risk and sensible precautionary measures related to recombinant DNA research. NAS produces two types of reports, workshop proceedings and consensus reports with findings and commendations, with the majority requested by government agencies. This year NAS published a report on [research guidelines for human gene editing](#) and posted the proceedings of an [international human gene editing summit](#). She noted that NAS recently reorganized its divisions to form the National Academies of Science, Engineering, and Medicine, (NAS, NAM, NAE).

After the introduction she explained that the current workshop is designed to help Chinese

and American experts better cooperate to respond to emerging infectious diseases, promote lab and global health biosecurity, and address impediments to cooperation and collaboration between the U.S. and China. She outlined the goals of the current workshop as:

- 1) Establish communication and scientific relationships within the region
- 2) Exchange scientific knowledge and best safety and security practices for research
- 3) Foster future China-U.S. cooperation and collaboration

She noted that CAS and NAS would produce documents summarizing the meeting and plan to organize future workshops on these topics.

David Relman (Professor, Stanford University) greeted the group on behalf of the U.S. National Academy of Medicine (NAM) president and foreign secretary. He described NAM as a 2000 member organization, created under the NAS charter in 1970, focusing on improving health and setting the agenda in medicine and health in the United States. As the chair of the NAM Forum on Microbial Threats he focuses on why infectious diseases occur, the microbe/host environment, and the framework for emerging infectious disease. NAM is also interested in microbial forensics and global health security and is promoting a global health risk framework. He sees three broad areas for further collaboration between the U.S. and China:

- 1) *Emerging infections*, understanding disease reservoirs, disease emergence, disease surveillance, natural versus human origin of disease, data sharing, and building capacity for research during public health emergencies.
- 2) *Anticipating Risk* in the life sciences and medicine related to biotechnology innovation, such as identifying certain experiments that are too risky to conduct.
- 3) *Governance of Science* to reduce risk, such as doing research in centralized laboratories versus distributed labs, managing research costs, learning from the past technical and bureaucratic mistakes, best ways to diminish risk without hindering science and address technical risk for the laboratory versus social risk for the community.

At the end of the introductions the audience was curious about how NAS and NAM reports are produced and asked how to ensure that the government will take the advice given. Dr. Relman answered that NAS and NAM produce independent reports for the U.S. Government and other sponsors; it is up to the sponsor to use or implement the advice in the report, but they are not required to do so. A participant noted that it is important for groups like NAS and NAM to catalyze and convene groups of the best minds to agree on a suitable path forward for others to implement but noted that CAS is somewhat different than the NAS. CAS advises and convenes but has a basic research mission as well. He said perhaps CAS can benefit from NAS experience on how to provide sound advice to the government on science.

James Le Duc (Professor, Galveston National Laboratory) then summarized the technical aspects and challenges associated with high-containment laboratories. Le Duc noted that China is on the verge of opening three BSL-4 high-containment laboratories and offered thoughts and advice from his perspective as the head of the University of Texas Medical Branch Galveston National Laboratory (GNL). He described high containment labs as

valuable resources that often employ the best people addressing the most difficult problems of global health. GNL is designed to handle all BSL-4 agents and has been in operation for about a decade. The lab cost 175 million USD to build and had significant ongoing operations expenses independent of the cost of research activities. These include utility costs, maintenance, and training the large onsite security force. The yearly operation costs equals about 11.5-15 million USD or about 7-9% of the construction costs. Other key issues of concern are the preparation for and proper management of laboratory accidents. Some accidents are inevitable so it is important to take precaution not only to reduce the likelihood of their occurrence but to manage and minimize the consequences. Labs should have a preexisting plan for many adverse situations. This plan should especially include a strategy for communication with the public and policy makers. Labs are a source of pride for the local community but when things go bad, opinion can change. It is important to build up a 'bank account' of good will by talking about important scientific contributions made by the researchers at the facility and how valuable research is to domestic and global health, and then be open and transparent if something goes wrong.

When asked how he defends and secures the large budget needed to run the lab year to year, Le Duc said this is a constant struggle, as costs go up and political leadership changes, the best strategy is to maintain lines of communication between the lab and the community and to politicians. In the U.S. it's not possible to guarantee the budget each year. The U.S. NIH helps offset some of the operations costs, but it is not practical to recoup all of this money from the NIH alone. NIH just provides costs for operations of labs, but all research expenses are funded through individual competitive grants and contracts. About 2/3 of the initial construction costs were provided by NIH and the remainder by the State of Texas and the University of Texas, with some philanthropic contributions. In the U.S. the long-term sustainability of a BSL-4 laboratory requires constant vigilance regarding the cost of operations and maintenance of the facility.

Session 1: Gain-of-function research, gene editing, targeting, and delivery and other novel biotechnology was chaired by **Yanyi Wang** (Deputy Director General/ Principal Investigator, Wuhan Institute of Virology, CAS). Participants discussed gain-of-function research, gene editing, targeting and delivery, other novel biotechnology and other recent advances in technology and their applications.

David Relman (Academician, Stanford University) spoke about the challenges and opportunities of genome engineering and other novel life sciences technologies. He said that responding appropriately to emerging infections has not changed, what has changed is the kind of science that is done. Today, scientists have a profoundly better ability to study and manipulate life at the genetic level but collectively, the scientific community has not given enough thought to what these new science capabilities mean. He described the process-based classification of life sciences technologies as the acquisition of novel biological or molecular diversity (e.g., DNA synthesis, DNA shuffling, combinatorial chemistry), directed design (e.g., synthetic biology, reverse genetic engineering), understanding and manipulating biological systems (e.g., "systems biology", RNAi, modulators of homeostatic systems), and production, packaging, delivery (e.g., microfluidics / microfabrication, nanotechnology, microencapsulation, gene therapy/targeting). He said that today individuals have increasing

power in the life sciences due to the low barrier of entry and the lower costs and more efficient and rapid processes described above. For example most RNA viruses can be re-synthesized using just the sequence so possession of a sequence allows an individual to make a virus.

When considering risk from the misuse of biology he asked if certain experiments should not be undertaken because the risks outweigh the benefits or because benefits will only be realized in the indefinite future? A key risk factor is the possibility of unusually large consequences if an accident were to occur (like the inability to contain a release and prevent illness and death, especially in resource-poor areas). Misuse can take many forms, from accidental or benign, to unwitting infections or release all the way to callous or deliberate (the most likely being accidental).

There is currently a vigorous discussion in the U.S. about experiments that enhance the virulence of influenza virus and genetic manipulation associated with gain-of-function research. He suggested that scientists should think carefully about strategies to minimize risk before doing such experiments, and to factor risk into decisions about research plans. Benefits almost always can be achieved with other experimental approaches. Other ways to address this problem include:

- More transparency in the scientific process
- The regulation of access to reagents and information
- Sensitizing relevant communities and establishing norms for the role of individuals, professional organizations, academia, industry, national leadership, and international organizations.
- Anticipating and preempting threats
- Response if something goes wrong (detection, reversal, attribution, etc.)

To achieve any of this strong scientific leadership is needed and should involve the entire scientific community. Consider the 1975 Asilomar Conference on Recombinant DNA as an example, scientists designed guidelines to ensure safe ways to work with recombinant DNA before an emerging era of research became a more public problem.

The audience asked about the U.S. approval process for gain-of-function research. Relman said that United States is in process of determining what to do about this. The audience asked how to engage the public on these issues. He said that this is also a challenge. In general most people are confused about the reasons for doing experiments like these in the first place therefore we need to explain the value of the work as well as the risks. An audience member asked if there are U.S. laws on gain-of-function research. Relman said no, law and regulation could control some research, but any evaluation system will not be able to catch everything, especially a rogue individual. An audience member suggested that we can raise awareness among the scientific community to inspire more scientists to think about the risks before they undertake an experiment to address a scientific problem.

Zhihong Hu (Principal Investigator, Wuhan Institute of Virology, CAS) discussed the construction and rescue of a functional synthetic baculovirus as an example of the capabilities of modern synthetic biology. She noted the massive uptick in reference to synthetic biology in scientific journals this century and the many advances in the field since polio virus was first synthesized in 2002. Her research focuses on baculovirus co-evolution with insect hosts,

a system with a very unique lifecycle and could be used as a bio-control agent to control pest outbreaks. Her research suggests that Baculovirus, a large DNA virus, can be synthesized and that it is a powerful platform for virus modification and engineering and for fundamental studies. She said that virus synthesis is a unique tool to study the viruses with only genome information or uncultured viruses. She noted that there is a low risk for synthesizing baculovirus because the virus has a large flexible genome that is easy to manipulate where researcher can delete genes without risk. She concluded by asking the audience if the scientific community should regulate synthetic biology and if so how?

The audience asked about reproducibility of her baculovirus virus synthesis and she said that a very skilled student can synthesize baculovirus in one month; others in two months. An audience member asked her to predict when Zika virus would be synthesized. She said any flavivirus lab could do it right now. Another member of the audience asked if having the original virus made the process easier? She said yes, it is harder to do from a database sequence and more difficult without the original virus. An audience member mentioned safety concerns noting that in the United States the NIH publishes regulations on modified genetic organisms. Hu said that she participated in the discussions to destroy small pox stocks; labs now can only possess 30% of the small pox genome but asked how can you control and regulate that in an era of synthetic biology? She said she knows that she will face public questions about her research and wants to make sure her viruses stay safe and secure.

Wensheng Wei (Professor, Peking University) spoke about high-throughput functional genomics: coding, non-coding and beyond. He described his research as using bio technology to address anthrax toxicity, *Clostridium difficile* bacterial infections (CDIs) and viral infection. He also discussed the use of gene editing tools and gain of function research. He uses gene editing systems, like CRISPR to address bacterial antibiotic resistance, a large problem in China because gene editing has many applications for drug target identification. His current research focuses on CDIs that are more resistant to antibiotics and how synthetic and natural systems for editing can be turned into a high throughput strategy to produce better antibiotics. He is also working to produce Zika virus antivirals and is developing high throughput methods to identify non-coding elements on the chromosome to get better tools to study the whole genome. The new gene editing tools are useful for addressing drug resistance but new techniques still needed to get the drugs through clinical trials. An audience member asked if he had found any new roles for RNA in the infectious disease process. Wei said not yet but that this is a promising area.

Session 2: Public health response to outbreaks and issues. The session chair **James Le Duc** (Professor, Galveston National Laboratory) noted that the panelists would present three technical talks demonstrating collaborative research concerning Dengue, Zika, Ebola, and influenza, including Avian Influenza, and host-pathogen interaction (pathogenesis).

Xia Jin (Principal Investigator, Institute Pasteur of Shanghai, CAS) spoke about observations that Dengue immune sera enhances Zika virus infection in human peripheral blood monocytes. He noted that dengue antibodies enhance Zika infection and explained the mechanism and how this is being considered as researchers work to produce a Zika vaccine. Audience members asked if Dengue would enhance infection in infants and toddlers and he

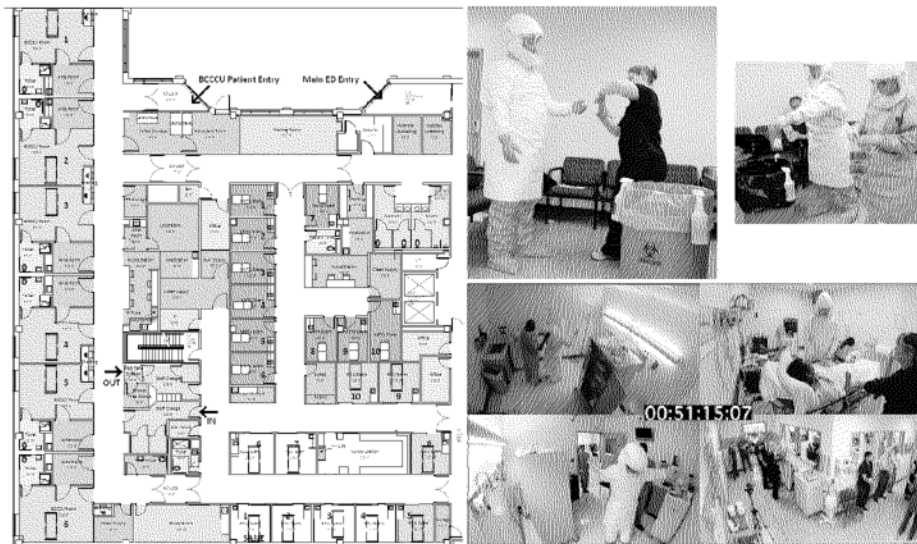
noted that a baby born of a Dengue infected mother will have more severe infection. However he said that there is no epidemiological data that overlays Dengue and Zika infections showing severe Zika in populations with Dengue. He also noted that Zika vaccine would be ready soon and that Zika vaccine development would be easier than a Dengue vaccine.

Rui Gong (Principal Investigator, Wuhan Institute of Virology, CAS) spoke about engineered human antibody constant domain as a candidate against Ebola virus. He said that therapeutic antibodies are invaluable tools for control of viral infection, they are the most effective tools for prevention of pathogen infection after exposure. He discussed techniques for using therapeutic antibodies and updated the group on “ZMapp” and other current neutralizing antibody therapies against Ebola. Monoclonal antibodies ZMapp were used for therapy in infected patients during the Ebola epidemic in West Africa. The sera from convalescent patients were used for therapy in MERS-CoV infected patients in Korea. He said that the therapeutic antibody market remains one of the fastest-growing segments in the pharmaceutical industry, with a growth rate of approximately 30% per year. He explained his research focus and the possible next steps in the therapeutic antibodies research process including, the further optimization on 7c2M antibodies, animal studies, understanding the neutralization mechanism in antibodies, neutralization experiment in protection from Ebola virus infection at the cell level, and the evaluation of the “drugability” of the 7c2 antibody.

Pei-Yong Shi (Professor, University of Texas) discussed antiviral drug discovery and development. He noted his diverse background in science, public health and administration and more recent work on antiviral drug discovery. His presentation outlined antiviral drug discovery strategy to target viral and host proteins, stimulate immune systems, and modulate molecular pathways that lead to diseases. Two antiviral approaches could be taken: a target based approach and a cell based approach. Next, he presented two dengue antiviral projects. One project used crystal structure to rationally design inhibitors of dengue viral polymerase. Another project used cell-based screening to identify inhibitors of dengue NS4B protein. He said that future research would determine the mechanism of NS4B inhibitors and develop compound with pan-serotype activity. An audience member asked if in clinical use, the prompt for initiating treatment would likely be a sign, like fever then asked how he envisioned timing of use in humans? Shi noted that by the time the patient reports to a clinic viremia already starts to drop. An audience member asked if the virus will clear faster if you increase the dose? He said that the hope is to get the immune system to kick in to mitigate the disease. The session chair asked about the location of his collaborators. He said they are all over the world and in Brazil since that is Zika ground zero; they report progress in real time to the Brazilian government to promote transparency.

James Le Duc (Professor, Galveston National Laboratory) the chair of the session, then discussed improving the BSL-4 laboratory’s role in emergency health response and the importance of communications during a crisis. He changed the focus of the session from technical talks on research to discussing the labs where some of the research takes place and how best to respond and communicate during and after an outbreak.

At the beginning of the talk he noted that every aspect of outbreak response can be complicated, for example, at what level and for how long should we screen people after exposure? Ebola can live in the body for months after recovery. It's important to take precaution but size the precaution to the risk. The time to think about question like this is before the outbreak. He noted that GNL is one of nine regional facilities that can treat Ebola in the U.S. and has 6 hospital type rooms to treat infected patients while in containment.



During a crisis the focus should be on laboratories providing transparent, accurate and timely diagnostics of patients during an outbreak or exposure. When the community is not informed the situation tends to get out of hand. Much can be done to manage the perception of risk in advance. Proper education should happen early. During a crisis leaders should know the facts and have something to say and convey it clearly. We learned that it is important to have clear leadership and manage communication with the public and with politicians while responding to the recent Ebola case in Dallas, Texas. During the crisis in Dallas then Governor Rick Perry created a taskforce that brought everyone together to respond. Later other problems had to be solved. The patient generated a huge amount of medical waste, treatment generated eight 55 gallon drums of waste every day. The state of Texas trucked the waste to GNL and we disposed of it properly. Other issues include cleaning secondary facilities and dealing with pets. An outbreak can be a time when you demonstrate the value of your facility to your country, be prepared to help, plan a communication strategy, use a trusted spokesperson and stay on message. Use the right people to do this, for example, Thomas Ksiazek, senior leader at GNL has experience responding to outbreaks going back to 1977. Anticipate and welcome involvement of political leaders. Be prepared to provide definitive diagnostics. Train lab and clinical staff on PPE and patient management before the need arises and don't forget waste management.

During the question and answer session a Chinese participant asked about GNL's "official" responsibilities during the crisis, where there problems delegating authority when making

official statements? Le Duc said that he did not have the responsibility to speak on behalf of the U.S. Government (even though the lab is a “national” lab) and also that he did not get paid extra for any of this, he said that it was part of our duty, to the community, state and nation. During the response GNL had to reprioritize some of its basic research, like vaccine development. That said, extra investment paid off in the good will and support that GNL received. Good statements by public officials help preserve the prestige of lab. He also said that the community was very supportive from the beginning because GNL leaders spend a lot of time communicating and maintaining a dialogue with local leaders and frequently notes the economic value that the facility creates. For example GNL did a 20 year economic forecast, noting that GNL generates more than 1 billion for the community. An audience member noted that China was also prepared to respond to Ebola. Government leaders across agencies and ministries have had many meetings but the response would have been organized by the Ministry of Health and Family Planning if there was an Ebola case in China. An audience member asked for more details about how to treat clinical medical waste. Le Duc explained that the waste generated by the Ebola patient was initially treated with chemicals and not autoclave because Dallas did not have a large enough facility. Chinese audience members noted that China does not have a large autoclave clinical waste capability and needs to come up with a strategy. In China the emergency response is organized by the Chinese CDC. Le Duc noted that GNL played a supporting role in the Ebola patient response, the U.S. CDC had primary responsibility for the national response but because the case happened in the state of Texas GNL naturally had a larger role. A Chinese participant noted that the U.S. system is different than in China but noted that if anything happens in Wuhan, the first sample would go to Hubei province CDC first and that the local facilities would also have a larger role.

The first day ended with a round table discussion chaired by **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS) and **James Le Duc** (Professor, Galveston National Laboratory). The chairs reviewed the discussion from day one. Yuan noted that excellent science is going forward in China and in the United States but that new research techniques and risks associated with certain research are raising some policy issues at the national and international level. How do we work together to create regulations that will not hinder the good science going on? He say many opportunities for collaboration and exchange between China and the United States but looked to the future by asking how do we educate students on technical issues but help them understand the context of global challenges going forward? He noted that several BSL-4 labs are about to open in China and asked about how to best share virus stocks, reagents and the tools and techniques necessary to do the critical scientific work the labs were designed to do?

Yuan first noted that the day one presentations on combating emerging disease control are good basis for future communication and collaboration; the United States and China can find common interests in these areas. He noted that NAS and NAM and CAS, while different types of organizations, have the same basic objectives to promote science for the development of the world. However our communities have different ways to approach crisis; China should do a better job explaining our system and what happens when there is a

problem in China and how it is addressed. We have lots of processes in place but we can learn a lot from the American side on understanding how to effectively manage crisis. He said he was concerned about how scientists can manage advances of new technology. Scientists have mostly used modern technology and science to do good work but today some research poses risks that should be acknowledged and addressed. He asked how our communities can better understand risks to prevent accidents or misuse not blocking research pathways that can produce real benefit. Finally he noted that scientists have a duty to help the public understand the value of scientific research and demystify their work.

An audience member agreed with the theme of his summary, and said that the problem of controlling emerging infections is a difficult problem that we share. One important problem to consider is how scientists can better understand natural disease reservoirs and interpret sequence data from nature? Today it is easy to generate sequences but it remains hard to understand what a given sequence means regarding phenotype. What other kinds of information do we need to collect to solve this problem? Regarding research that carries some risk, we should also think about the kinds of experiments that warrant further discussion or review and address the problem before outsiders challenge the rationale to do the science.

A Chinese participant said that we know that bats and birds host potential pathogens and that the scientific research community is working across China to map reservoirs. We have generated a lot of sequence information over the past several years but we don't understand why diseases emerge when they do; more collaboration on reservoirs is needed. They said that there is a lot China can learn from the GNL, but not just scientifically. When managing a laboratory transparency and trust are important. BSL-4 labs are huge investments and require millions of dollars to run, we want the world to understand what we are doing so they will support what we do. The participant said that it would be good to see institutional level collaboration between The Wuhan National Institute of Virology (NIV) and GNL and that CAS could spend money to help support the collaboration. CAS has several mechanisms to support international engagement and collaboration including funding international exchanges and fellowships for people from abroad to come to China and do research. Also scientists in China can propose international projects that CAS can fund, something could be done jointly on the ecology and evolution of infectious disease. CAS is already working with the U.S. NSF and NIH, the program manager will visit NIV next month. We can use all these resources.

Another Chinese participant said that the group should be most interested in collaborating on pathogenic viruses and should focus on significant viral threats to human health. China CDC is working to discover unknown pathogens. He also stated that the U.S. and China should share their experience responding to emergencies. Scientists will have to work with the policy makers to prepare for infectious disease emergencies. This could be a topic for a joint report.

A Chinese participant noted that sharing viruses even domestically is difficult and asked how the scientific community can overcome this logistical problem? They have created a consortium to share samples within China, but sharing samples across international borders is

more difficult. Another participant said that there are many issues to solve at the policy level, for example shipping live virus is an especially big problem; however there are techniques to ship parts of the viral genomes. More science can be done to overcome the policy problems. An American participant noted that the group is focused on public health and science but should remember to engage the veterinary and the agriculture production sector (in the spirit of One Health). The U.S. and China can expand this collaboration like they have with the long-standing collaboration on influenza.

Yuan said that on the second day the group would hear more about China's new BSL-4 facilities, biosafety, biosecurity and regulation and management of research in both China and the United States. These topics might also be the basis for future collaboration. Also to better accommodate collaboration we should consider a more formal linkage between our groups, like a memorandum of understanding. After the meeting we should identify priorities and write joint remarks to our academy presidents about the meeting and what our two academies can do together on these issues to provide a channel and bridge for future.

Day 2

Session 3: Emerging infectious diseases and global health security. The chair, **Pei-yong Shi** (Professor, University of Texas, GNL) noted that the session would cover anti-viral countermeasures (strategy and R&D) and improving the high containment laboratory's role in emergency health response.

George Gao (Academician, Institute of Microbiology, CAS) discussed biosafety, biorisk, and biosecurity pathogens and human behavior. Gao said he has experience responding to natural outbreaks all over the world, and played a leading role in China's response to the 2014 West African Ebola outbreak but has less experience addressing or thinking about deliberate misuse of biology. He stated that the meetings between Chinese and American experts are important because more and better collaboration can help prevent accidents and has the potential to prevent misuse. He started his presentation by asking two questions, why do we have so many new viruses and why do we have periodic disease outbreaks? Gao noted that today the world is more interconnected, human behavior has been a driving force for many of the changes. He spoke of the H7N9 outbreak of 2013 and the difference between low pathogenic and highly pathogenic avian influenza. He said we do not know what HxNy flu virus will cause the next significant loss of human life but we do know that it will come eventually. China is a place where the mixing occurs. Influenza continues to evolve and is very complex, in China new flu strains circulate and evolve in live poultry markets. What is the solution; close the markets? He said Ebola, Nipa, and MERS, viruses also spill over from natural reservoir to humans. MERS is especially troublesome; coronavirus recombination is common. Will MERS become like flu? It is a constant struggle to control the effects of virus evolution and adaption into new hosts. Looking at how viruses adapt to new hosts is a key area where we can cooperate. We can exchange methods for studying adaptation and work with the international community. He has advocated for younger people to address emerging communicable disease especially in Africa and noted that China CDC is thinking and

working more internationally and providing aid and financial support to efforts in other countries. He helped establish the Sierra Leone China Friendship Biological Safety Association. Gao also discussed the disease surveillance context of the announced Chinese government Belt and Road Initiative, the Chinese effort to create an economic zone through the historic Silk Road region of central Asia.

Gao stated that the U.S. and China should have a real discussion on how to work together to consider the risks from gain of function and loss of function research, it is not in either of our countries interest to create disastrous viruses. Going forward, to maintain and increase public trust transparency by scientists is critical.

An audience member working on MERS said he found a very high viral presence in camels in Pakistan and also found evidence of the virus in humans, but did not see clinical cases. He asked Gao why this might be the case? Gao was not sure; he suggested maybe virus mutation? He proposed that maybe the virus population in Pakistan has low pathogenicity? An American participant said that he did not see the Ebola outbreak virus become more virulent during the 2014 outbreak. Gao stated that they have no evidence one way or the other but are still doing sequencing. An audience member asked if Gao was trying to say that bats carry a MERS-like virus and what might be the real host of MERS, bats or camels? Another also asked if we are likely to see an influenza like MERS virus in the future? Gao said that camels are just intermediate hosts and that he thinks that MERS may evolve to be more flu-like in the future.

Jiahai Lu (Professor, Zhongshan School of Medicine, Sun Yat-Sen University) spoke about China's use of the One Health strategy to respond to emerging infectious diseases (EIDs). Lu described One Health as a strategy that considers all related contact between humans and animals to combat and possibly predict EIDs. He explained that One Health is a particularly appropriate strategy in Guangdong province. Guangdong is vulnerable to EIDs due to its location, culture and high population. Because of the emphasis on freshness in Cantonese food, animals are kept alive until just before they are consumed. This makes Guangdong province, and especially the live animal markets a hotbed of vector borne zoonotic disease outbreaks. Many are actively working to implement One Health in Guangdong. The first SARS outbreak was in Guangdong. Infected bats came into contact with civet cats and then the virus evolved and jumped to humans. Another reemerging infectious disease of concern in the region is brucellosis, associated with imported sheep. Lu also detailed the five waves of H7N9 outbreak in China. 95% of human cases followed exposure to live poultry. He noted a recent novel mutation (in March 2017) that showed a new high pathogenicity avian flu. China has examined the impact of closing the live poultry markets to curb future outbreaks but noted the negative impact on the local economy. He cited [an article](#) that details China's response to EIDs and the need for a One Health approach in future responses. An audience member agreed that people in Guangdong eat "everything" which poses a unique disease control problem.

Zhengli Shi (Principal Investigator, Wuhan Institute of Virology, CAS) spoke about the

evolution and pathogenesis of bat SARS like coronavirus (SL CoV). Shi is working on corona virus and other emerging infections and said that bat SL CoV could be the next pandemic. He described the cases and countries involved in the 2003 SARS outbreak. For bat corona virus to cause the next SL CoV outbreak many factors will have to be involved. His research looks at the pathogenesis of SL CoV in transgenic mice. It replicates very well in mice and human tissue. The virus can easily enter human cells but in the animal model the virus has less pathogenesis; this is good news. His research shows that some bat SL CoVs have potential interspecies transmission to other animals and humans. An audience member asked if one could clear an infected bat of this virus? Zhengli said that he tried this with Nipah virus in bats and bats could produce antibodies, clear within seven days. In nature we found that bats produce antibodies to some viruses but not all. SL CoV can exist in bats for several months. An audience member said that you cannot be sure that this pathogen will cause human disease and that more data are needed. Right now infections are very mild and there is no clinical syndrome. Further studies are needed.

Mifang Liang (Principal Investigator, National Institute for Viral Disease Control and Prevention) discussed the epidemiological characteristics of severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery to current knowledge. SFTS in china recently emerged; it was discovered in 2009 and 2010.

Emergency of SFTS in China, 2009-2010



She said that it has been very hard to find the virus in nature. It was only recently added to the International Committee on Taxonomy of Viruses (ICTV) catalog. In the catalogue it is described as a highly pathogenic phlebovirus in the family bunyaviridae. It is now listed by the World Health Organization as a special pathogen of concern. She recently mapped the genome structure of the virus. The number of cases are increasing every year but the case fatality rate is decreasing every year. Most patients are from the Chinese countryside, about 86% are farmers. Over 10,000 cases in 25 provinces were reported since the first discovery of SFTS virus. Peak time for exposure and infection is May to Aug due to weather.

An audience member asked how do people become infected? Mifang said that is unknown, so far only local endemic investigations and we have isolated virus from ticks. It has been determined that it is transmitted by ticks and person to person. Ticks may act as a major vector for SFTSV transmission and domestic animals are widely infected by SFTSV, but reservoirs or hosts are not known. Person to person transmission of SFTSV has occurred through direct contact with patient blood containing high virus load. They have not done studies to understand how humans have become infected. She did note that most patients do

not have tick bites or exposure recently to slaughtered animals. In the future they plan to do experiments to determine how humans get the virus.

Linda Saif (Professor, The Ohio State University) talked about animal coronaviruses as a global threat to humans and animals. Coronaviruses (CoV) continue to evolve and emerge globally as a cause of fatal respiratory and enteric infections of young animals and humans. Saif's talk covered SARS and MERS coronaviruses. She explained the basic morphology of the virus and the diversity of avian and mammalian CoVs. Coronaviruses are genetically diverse due to frequent mutation and recombination. The viruses can be transmitted among wild ruminants and to domestic ruminants or vice versa. She cited two historical examples for the predicted transmission of bovine CoV to humans and described how bovine CoVs, MERS CoV and SARS CoV infect their hosts and whether camels are the host or intermediate reservoir for MERS infection of humans. She provided data documenting that humans on statins (for hypercholesterolemia) are more susceptible to Norovirus as an example of how co-morbidities or drugs to treat them could affect the high susceptibility of the elderly to MERS and SARS. Because SARS CoVs are documented in bat reservoir hosts, she expressed a concern that SARS could reemerge from an animal reservoir and cause another pandemic. It is also important to determine how MERS CoV is transmitted (camel to human or human to human) so that the scientific community can better target the virus, design preventive measures and prevent such a pandemic. Right now the strategy is to manage and reduce contact with infected camels or camel products, but there are many unresolved questions. The epidemiology of MERS CoV infections in camels and its zoonotic transmission is poorly understood, but it resembles respiratory coronavirus infections in cattle. To date no vaccines have been licensed for any respiratory CoV infection.

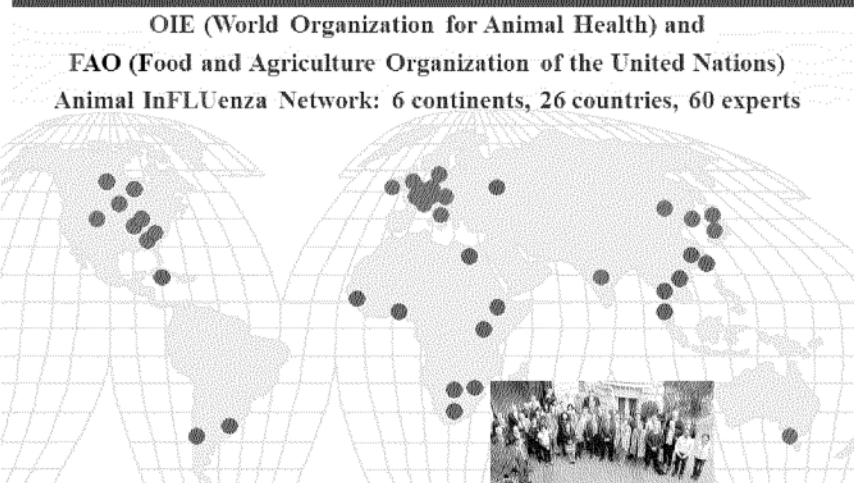
An audience member asked about the closest relative to MERS? Saif stated it is bat and camel genogroup C betacoronaviruses. An audience member said that they were trying to determine if all coronaviruses originated from bats. What is the origin of swine porcine epidemic diarrhea (PEDV) coronavirus? Saif said we don't know, but added that PEDV died out after its initial discovery in Europe in the late 1970's, until it re-emerged there recently. One theory is that it was originally not completely swine adapted. A Chinese participant suggested that if SARS is gone why should the government keep doing SARS research? What is your suggestion on how to prepare for another attack of SARS? Saif said that labs should keep all reagents available and continue to research CoV vaccines and antivirals as the bat reservoir is still there. We still may see isolated spillover events, but only when the virus acquires the ability to transmit efficiently from human to human and persist will it result in further pandemics and high morbidity and mortality as was the initial case for SARS and continues for MERS. It is important to stay vigilant. An audience member asked about farmed civet cats relationship to spread? Saif said there was genetic evidence of SARS interspecies transmission between civet cats and humans and that this is another argument for closing live animal markets; when the Chinese government got rid of civets in live animal markets, this appeared to aid in stopping SARS transmission and the epidemic in China. An audience member supported this statement and said that Chinese data supports transmission between bats and civets in a market environment but studies indicate that there is no SARS CoV in wild civets.

Chengfeng Qin (Professor, the Academy of Military Medical Sciences) described existing weapons against the emerging Zika virus. Chengfeng discussed the original discovery and spread of Zika from Africa to more recent regional epidemics and detailed isolating the

Chinese Zika virus strain. He published a paper in January 2016 about Zika in China and is working with Pei-yong and George Gao to do further work on the virus. He noted that there is currently no case of Zika infection reported in mainland China but there are examples of several imported cases. He is looking for further collaboration and communication on Zika with American researchers. Audience members noted that much of the population of Brazil might have Dengue already and asked about the relationship between Dengue and Zika. Chengfeng suggested that the answer is related to how the antibodies interact.

David Swayne (Director, USDA Southeast Poultry Research Laboratory) discussed avian influenza at the animal-human interface and global challenges for scientific contributions to control. Swayne works to combat animal flu issues and also implements the One Health concept to prevent animal health issues from becoming human health problems. He introduced the World Organization for Animal Health and Food and Agriculture Organization for the United Nations (OIE/FAO) Network of Expertise on Animal Influenza (OFFLU) and discussed the importance of combating the influenza virus at the animal-human interface. He then discussed the 42 specific highly pathogenic avian influenza (HPAI) epidemic cases. He said that animal flu continues to be a threat to humans, with 453 recorded deaths since 2003 for H5N1 bird flu. He reported a significant number of H3N2 infections at agricultural fairs in the United States and 534 H7N9 HPAI deaths in China since 2013. He explained that we know little about what virus may cause the next pandemic. OFFLU works with WHO and OIE to track outbreaks and prepare for epidemics and pandemics; the group helps WHO identify appropriate prepandemic vaccine candidates by providing genetic and antigenic data, and epidemiological information on circulating animal flu strains.

1. OFFLU Network of Animal Influenza Experts



Swayne described several avian influenza poultry vaccines strategies and the many different seed strains licensed around the world. A major function of the OFFLU is to help collect and analyze influenza virus data to assist countries and companies in the decision process on what to produce and when.

An audience member asked about reasons for changes to the strains over time and if he attributed changes to vaccination or natural drift over time? Swayne did not have a single

explanation for the changes as the drifting of field viruses is different for HPAI versus low pathogenic avian influenza (LPAI) viruses, but noted that we see different types of changes in countries that are doing vaccinations compared to countries with endemic infection with LPAI viruses. Before large poultry vaccination programs, changes in the hemagglutinin antigenic sites were random, now they are driven at specific sites on the surface of the hemagglutinin protein.

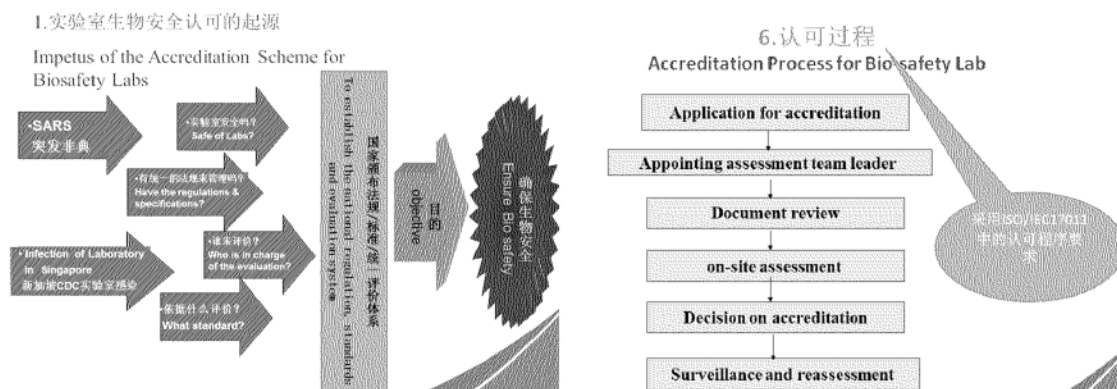
Gong Cheng (Professor, Qinghua University) presented his research on non-structural protein 1 a key for flavivirus transfer from host to vector. The discussion centered around flavivirus, particularly Dengue and the Dengue virus transmission process and the prevalence of Zika infected mosquitoes via a "mosquito-host-mosquito" transmission cycle. He is studying transmission of Dengue from human to mosquito, and hypothesizes that factors in human blood affect transmission.

Pei-Yong Shi (Professor, University of Texas) discussed the rapid response to Zika virus emergence including diagnostics and the state of vaccine development. He addressed the devastating clinical outcomes of Zika virus infection: microcephaly. He noted that virus can persist in the male sexual reproductive tract well after clinical symptoms cease and that 80% of individuals are asymptomatic throughout disease. There are two way to diagnose Zika now: detect virus or detect antibodies. He added that there are two Zika vaccines in phase 1 trials and discussed platforms to manufacture inactivated Zika vaccine and experiments to test vaccines. One of the live-attenuated vaccines has been proven to protect monkeys from Zika infection but more work is needed.

Session 4: High-level biosafety Laboratory: construction, commissioning, and sustainment was chaired by **Zhiming Yuan** (Principal Investigator, Wuhan Institute of Virology, CAS). Presenters discussed some of the BSL-4 high containment labs in China and the United States, the importance of community relations and public communication between the laboratories and the surrounding community, the importance of clinical facilities in biocontainment labs, special maintenance and operational issues associated with BSL-4 labs, the role of BSL-4 labs in outbreak response and the importance of maintaining reference collections and reagents.

Peijun Zhai (Division Director, China National Accreditation Service for Conformity Assessment) discussed the process of accrediting biological safety labs in China. He first detailed China National Accreditation Service (CNAS) the authorized accreditation body in China. CNAS has more than 1000 members and 4000 technical experts on call with 260 technical staff, it is the largest national laboratory accreditation body in the world. The SARs outbreak provided the impetus for biosafety lab accreditation in China. He listed the laws and regulations and standards related to biosafety and for biosafety labs in China and described the accreditation process CNAS runs for biosafety labs. Accreditation schemes for labs for biosafety and laboratories start with the Chinese code for laboratories – General Requirements for Biosafety GB 19489. The objective is to ensure biosafety of all labs. Currently 71 biosafety labs of various types are accredited by CNAS in China. Article 20 of

national accreditation says that labs at the BSL-3 and BSL-4 levels require national accreditation in China. He also discussed the difference between certification and accreditation in China.



An audience member asked whether unannounced inspections take place during the five-year period after initial laboratory accreditation. Peijun said that during the interval from assessment to reassessment CNAS does surveillance at the facility on a regular basis. Usually, the first inspection takes place after 1-1.5 years and then approximately every six months.

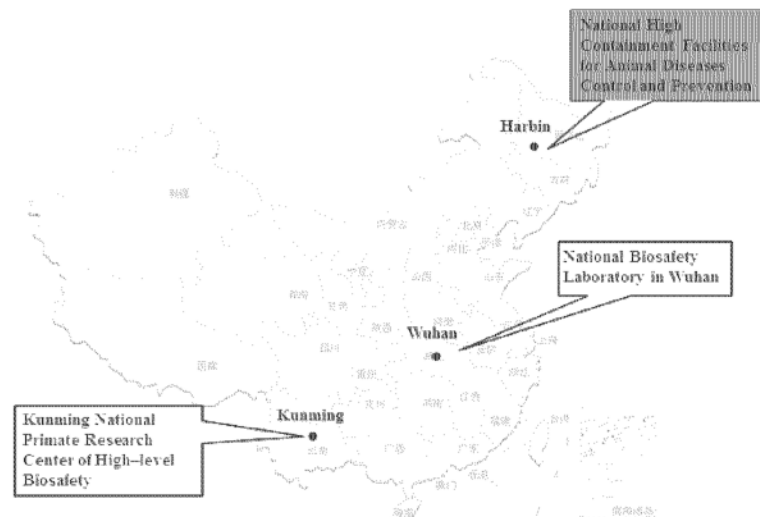
Thomas Ksiazek (Professor, Galveston National Laboratory) talked about biocontainment operations and maintenance and UTMB GNL and training personnel to work at other containment facilities. Ksiazek discussed BSL-4 biocontainment operation and maintenance at the GNL, noting that a lot goes on behind the scenes. The cornerstone is compliance with the current version of the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) guidelines, the select agent law adds additional requirements and yearly inspections in order to maintain certification. Key concerns of BSL-4 lab operations are reoccurring expenses, like security costs, utility payment and training. GNL is unique in the United States in that it is operated by a university (the Boston University National Emerging Infectious Diseases Laboratory is not operating yet).

Ksiazek described the unique safety, maintenance and information technology operations at the lab. GNL works with operators and researchers from many other countries, it had maintained a worldwide biosafety training center, but funds for the center have recently dried up and directors are working on options to sustain the program. Still have some interaction with Chinese institutes like NIV.

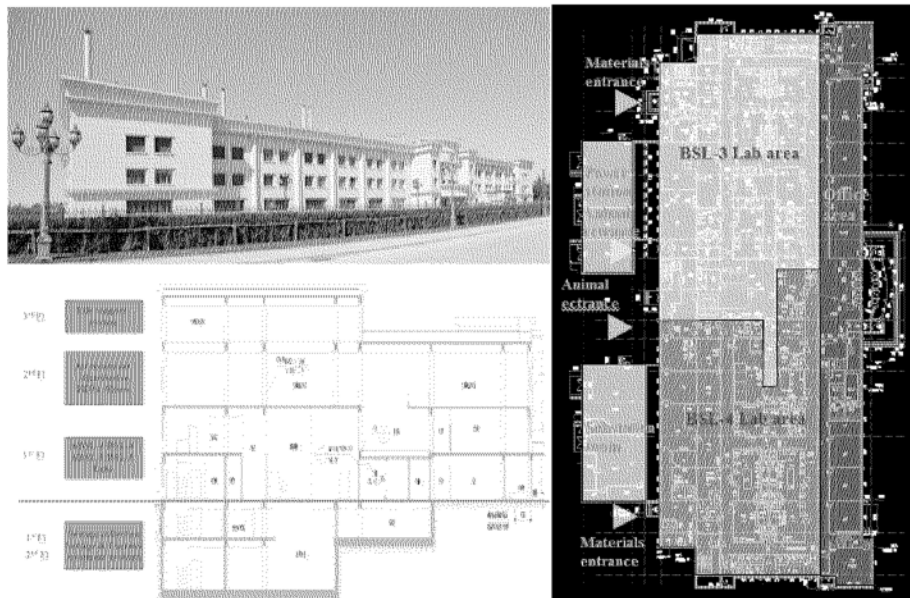
An audience member ask how long before a person can operate in the high containment space unsupervised? Ksiazek said it takes about 100 hours of mentored training per person but it depends a lot on the individual in getting to the mentored training tier of the overall BSL-4 training regimen. An audience member asked how countries with limited resources, like in Africa, should undertake diagnostic lab response to support outbreak control. Ksiazek said don't establish a BSL-4 in that kind of environment but rather set up a field laboratory in which personal protective equipment (PPE) is used to protect the individuals handling the clinical materials from patients, who are being cared for in the same environment. An audience member asked about GNLs precautions against flooding and severe weather and their waste management procedures and record back up. Ksiazek said that Hurricane Ike did inundate Galveston Island in 2008 but that the GNL building was not affected; GNL had power and actually acted as a life boat for the remainder of campus. Waste stream is done as

standard disposal for these facilities. Also GNL incinerates solid waste and everything coming from the laboratory is autoclaved prior to going to the incinerator. When asked about potential for losing the viruses stored in the lab, the GNL serves as a reference center with emergency backup power and the viruses in the reference center collection are lyophilized and he said he is reasonably sure that the viruses would survive a problem. In conclusion he said that some labs are in rural areas some are in population centers. High containment facilities have shown that they can operate safely in populated areas.

Zhigao Bu (Director General/Principal Investigator, Harbin Veterinary Research Institute, the Chinese Academy of Agricultural Sciences) discussed the design, construction and operation of Chinese National High Containment Facilities for Animal Diseases Control and Prevention (NHCFADCP) at the Harbin Veterinary Research Institute. Zhigao said that his institute, the Harbin Veterinary Research Institute is the most active institute for animal disease control in China. It is important to have such a facility because China has a significant percentage of the worlds livestock (fifty percent [800m] of the worlds pigs for example), and numerous agricultural health challenges due to its diverse and large population. He described SARs as a huge shock to the agricultural sector. After the SARS outbreak in 2004 China launched a plan to build three ABSL/BSL-4 facilities; in Harbin, Kunming and Wuhan. The Harbin lab was designated to focus on animal disease control and prevention.



He said that when they started, they had no idea how to construct BSL-4 lab buildings and facilities so formed lots of partnerships. They worked closely with labs in Australia, Japan and Canada, the USDA National Animal Disease Center and Kansas State University in the U.S., labs in Hamburg and Reims in Germany and the Jean Mérieux BSL-4 Laboratory in Lyon, France. He showed pictures of the construction of the NHCFADCP.



Construction of the Harbin lab was completed in 2016. The lab is composed of 5 floors with two below ground. The Lab has nine working areas for BSL-4 and 10 for BSL-3. He discussed security measures for the facility, including access and monitoring of personal. They hope to have CNAS certification by the end of this year.

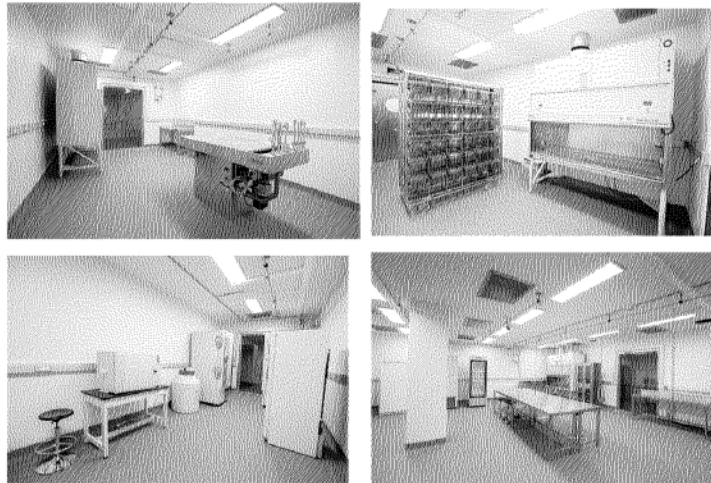
An audience member asked which pathogens they anticipate studying at in the BSL-4 portion of the lab? Zhigao said that is currently difficult to answer, interested in many pathogens, but need to get approved for each by Ministry of Health and Family Planning and it can be difficult to get approved. They work with many pathogens at the BSL-3 portion of the lab already; Brucella, flavivirus, SARs, and avian influenza. An audience member pointed out that Zhigao's photos showed workers using two types of suits in the lab. He said that the blue suits are made in China and the white ones are made in France. He stated that there is a big difference in the price between the domestic and foreign manufactured suits. Chinese suits are not yet certified for use in BSL-4 space.

Longding Liu (Institute of Medical Biology Chinese Academy of Medical Sciences) [represented Dr. Yunzhang Hu, the Principal Investigator and the head of the BSL-4 lab at the Kunming Institute of Medical Biology who was unable to attend the meeting.] Longding spoke about the Kunming Institute of Medical Biology National Primate Research Center of High-level Biosafety. Like the NHCADCP he said that the lab was created after SARS in 2004 to focus on basic research to combat animal and human disease.



The facility was originally designed as a production facility for vaccines. He said at first they did not have any idea on how to create a BSL-4 lab but worked closely with other countries and institutes to complete the construction. The lab cost 300m CNY and includes almost 3000 sqm of BSL-4 workspace. The campus includes a monkey breeding facility built 15km from Kunming city. Longding described the security for the facility, and showed photos of BSL-2, BSL-3, and BSL-4 suites. In the 3 and 4 rooms they use secondary negative pressure cabinets for housing monkeys. Like Harbin and at other BSL-4 facilities they have an extensive staff for maintenance and engineering support, air handling and cleaning.

ABSL/BSL-4 Labs



He said that the new BSL-4 lab and existing vaccine R&D platform will make the campus a more efficient producer of vaccines for infectious disease control.

An audience member asked about his thought on collaboration? He said that the facility doesn't have any experiments ongoing in BSL-3 right now but that they are seeking collaboration to facilitate work in the BSL-3 and BSL-4 spaces.

Session 5: Biosafety, biosecurity and bioethics chair **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) introduced the session on new technology for laboratory biological risk management, improving response to incidents at the lab, improving biosafety and biosecurity training, laboratory leadership, and culture and ethics.

Zhiming Yuan (Principal Investigator, Wuhan Institute of Virology, CAS) described the Wuhan Institute of Virology BSL-4 laboratory. He noted that some of the participants would visit the facility the following day. He said that he hoped to have a license soon so the lab could begin research in the BSL-4 areas. He stated that they had learned a lot from SARS and naturally occurring disease outbreaks but China still has a weak understanding of intentional misuse and how to deal with the dual use dilemma. Scientists have different motivation for doing research. Most scientists around the world who do gain-of-function research have good reasons to do the research but their needs to be a risk benefit balance. He asked how to make this balance and suggested several questions that might be asked when considering the benefit and risk of certain experiments. Law and regulation cannot answer all these questions. We must first consider biosafety in the laboratory. China has a biosafety legislation framework which includes regulation measures and codes related to all aspects of biosafety. But not everything can be easily regulated, like whether to do certain new experiments. He listed existing laws and ethical codes that could guide biomedical research and bioethics and discussed how laws and ethics overlap in biology and areas of bio ethics related to medical experiments on people. Zhiming further noted that CAS has its own bio ethics committee. He suggested that we combine biosafety, biosecurity, and bioethics as a way to address the spectrum of bio risk more broadly. He said that the life science community needs to establish science code of conduct and promote joint work on ethics, and create a culture and philosophy of ethics.

A Chinese participant said that some institutes already teach biosafety courses and therefore, some students already have a strong ethical understanding. They know the dangers inherent in the pathogens that are contained in the BSL-3 and 4 labs. An audience member suggested that biosafety and biosecurity are different and asked which is most important for China today? Zhiming said that they are equally important and should be giving significant attention.

Thomas Ksiazek (Professor, Galveston National Laboratory) discussed regulatory issues affecting the operation of a functional high containment lab including obtaining, shipping, maintaining and exchanging high hazard pathogens. Ksiazek focused on biosafety and biosecurity and the regulatory environment in the United States; he said that the U.S. was the first country that had a national standard for biosafety. The impetus for this began at the Asilomar conference in 1975. In 1984 the U.S. CDC produced the first Biosafety in Microbiological and Biomedical Laboratories (BMBL) handbook that categorized pathogens into risk groups; they are now working on the 6th addition of the BMBL. It sets the operating principles for biocontainment labs. When asked he often says that he “doesn’t do safety for a living but does safety to keep on living.” However he said that there is not enough focus on how safety regulations effect the science that the labs are designed to do. In the United States, the regulations that have been put in place since the 9/11 terrorist attack are mostly about

security, not safety. One of his key concerns is shipping samples; in the U.S. it was simple until about 5 years ago. Shipping of pathogen isolates is becoming prohibitively expensive. Now World Courier is the only group left that routinely ships select and BSL-4 agents in the U.S. He is seeking to get the United States Government to pressure the FedEx company to start shipping again. Another problem is that aircraft captains have the right to refuse dangerous goods shipments; the pilot has the final word on what goes on the plane. This has prevented shipping samples out of outbreak areas in the past. For example it was really difficult during the 2014 Ebola epidemic to get samples from West Africa; the U.S. chartered a jet to get Ebola isolates back to U.S. and the British Government utilized a ship. It has also become difficult to get necessary permits (through the U.S. department of Agriculture and the U.S. Public Health Service) to allow the efficient operation of a reference facility in the U.S. In addition we have to deal with regulators who have responsibility for laboratory certification and necessary permits; they usually have no practical experience working with high containment pathogens. Intellectual property issues are also becoming increasingly difficult; institutional lawyers are delaying exchange of viruses and reagents and not abiding by older principles of scientific cooperation between investigators doing non-commercial research. Collectively we can make a difference; scientists need to address the trend of over securitization. A Chinese audience member said that in China internal movement of samples between CCDC and CAS is really difficult as well with lots of bureaucratic hurdles. China only uses one group for international shipping.

David R. Franz (Former Commander, U.S. Army Medical Research Institute of Infectious Diseases) spoke about laboratory leadership, responsibility and progress. He said that his goal as an institutional leader was to create a functional ethical organizational cultural so the institution could do good work. In the laboratory environment the key is to balance regulation with progress. He stated that biosafety is much easier than biosecurity, because it is difficult to define the risk or to measure success in biosecurity. The NAS “Fink committee” report *Biotechnology Research in an Age of Terrorism* that discussed dual use research was ahead of its time. The committee ultimately concluded that education and awareness are key to addressing the threat. Following that study, the U.S. Government put together the National Science Advisory Board for Biosecurity (NSABB) to address dual use research. Franz discussed the evolution of biosecurity thinking in the U.S. noting only one accidental death—and not from a true select agent—is associated with the U.S. Select Agent program (and three deaths before 1969 when the U.S. offensive biological program was halted). He compared that to the more than 700,000 hospital acquired infections and 400,000 deaths due to medical mistakes in recent years.

He pointed out that leaders and scientists in the high-containment lab community must understand that the actions by a few affect the many. A negative incident in one laboratory can impact the ability of many laboratories to function. An audience member asked how best to balance security with transparency and how to build trust when accidents happen all the time? What about deep rooted mistrust due to social structure? What is your strategy to build trust with the Chinese and with other countries? Franz said it is important to create “nodes of trust” globally between individuals. Building networks and nodes is the model we use at NAS, the strategy is called “Track II diplomacy,” (with Track I being formal government meetings between officials) interaction and meetings between nongovernmental technical experts in the U.S. and in other countries. He noted that we can do the same thing within any country by

reaching out to others and forming personal connections to share advice and best practices in areas of mutual concern and interest, but there is no perfect solution to eliminating biosafety and, particularly, biosecurity incidents, we can only minimize the risk. A Chinese participant agreed that more enlightened leadership is key for safety and without sacrificing productivity and there is a need to build trust between people, directors and workers at these facilities. But, he asked, for BSL-4 labs, how could we collaborate together to be more productive? The participant suggested that collaboration occur between the three new labs in China.

Zhiming Yuan (Principal Investigator, Wuhan Institute of Virology, CAS) and **David R. Franz** (Former Commander, US Army Medical Research Institute of Infectious Diseases) presented conclusions from the meeting and led a discussion on possible roles of CAS and NAS to enhance cooperation between the U.S. and China on emerging infections, laboratory safety and global health security and other topics discussed at the meeting.

Franz presented summary thoughts from the meeting to the group. He first identified some key topics that came up during the presentations and discussions:

- Role of scientists in balancing regulation, safety, security and productivity
- Popularizing Science (helping the non-science community understand science)
- Emerging infections (reservoirs, natural populations and sequence data)
- The importance of transparency within and between countries
- The importance of trust within and between organizations and nations
- The One Health (animal health, the economy, human health) concept
- Responsibility of the science community to self-police and in some cases, regulate

He also presented some possible joint project ideas which had arisen during the meeting:

- Direct cooperation between CAS and NAS like formal institutional partnering and scientific collaboration
- Joint “Table Top Exercise” detailing hypothetical response to an outbreak
- Outbreak and incident response training
- How to make decisions regarding “Dangerous Research” on certain pathogens and gain of function research in general
- A joint manuscript of shared values and concerns
- Overcoming barriers to sharing strain collections and transport of pathogens
- Exchange and training of students

The audience suggested other issues including exchanging reference strains as many strains in China are interesting to researchers in other parts of the world. NAS and CAS representatives could jointly write a paper addressing how best to facilitate strain exchange. Others said that would be very useful but we must follow international guidelines like the Nagoya Protocol on Access to Genetic Resources. Also domestic property rights become an issue; if an outbreak occurs in a third country and we isolate virus, the virus belongs to country where sample is from. This makes exchange difficult.

Zhiming offered several additional suggestions:

- Create an official agreement between BSL-4 operating institutions to promote institutional collaboration.
- Chinese and American groups could work together to encourage scientists to create a culture of trust, safety and bioethics. NAS and CAS should provide a platform for cooperation.
- The U.S. could do more scientist training and train the trainer training for Chinese institution staff and students.
- Support efforts to improve the free movement of sample material.
- NAS and CAS could write a joint report and from that we can extract important information to provide to CAS and NAS leadership.
- CAS can form a core group for NAS to talk to about future activities. NAS will work with CAS to bring scientist to the U.S. to continue the discussion.

In discussions after the meeting the chairs decided on the following list of near term action items as priorities:

- Scientist exchange and training, particular for BSL-4 laboratories.
- Identifying joint BSL-4 research projects that are beneficial for both the U.S. and China.
- A memorandum between UTMB GNL and the Wuhan Institute of Virology (and also the other two Chinese BSL-4 laboratories) for both long-term and short-term collaboration and partnership.
- Hold further face-to-face meetings in the United States at the Galveston National Laboratory. Topics for the workshop will likely center around specific high biocontainment “operational” issues such as:
 - An overall strategy and creating centers for effective high containment laboratory staff training.
 - Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff.
 - Conducting “well-documented” studies under BSL-4 conditions. including practical aspects of non-human primate experimentation in the BSL-4 space.
 - Development and maintenance of best practices for long-term safe and productive BSL-4 operations.
 - Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
 - Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities.

Longer terms priorities:

- Enhancing our ability to share strain collections.
- Joint white paper that each side could use to educate political leaders and others.

- Promote international collaboration via China-US joint projects.
- Joint training programs between labs.
- Joint manuscript between individuals and institutions.
- Support improving biosafety and biosecurity at labs and trust building between scientists.

From: LeDuc, James W. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=JWLEDUC]
Sent: 7/6/2017 2:47:55 PM
To: 夏鹁 [hanxia@wh.iov.cn]; Yuan Zhiming [yzm@wh.iov.cn]
CC: Lawal, Adeola [adlawal@UTMB.EDU]; Shi, Pei yong [peshi@UTMB.EDU]
Subject: FW: Collaborations on training and research
Attachments: 20170705-MoU between WIV and UTMB.doc

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Thanks, Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

From: Lawal, Adeola
Sent: Thursday, July 06, 2017 12:45 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Subject: RE: Collaborations on training and research
Importance: High

Dr. LeDuc,

Please see attached redline. Please circulate to your colleagues with copy to me so that I have a direct contact for my files.

Best wishes,

Ade Lawal, JD
Associate Legal Officer
Office of Technology Transfer

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To: Lawal, Adeola
Subject: FW: Collaborations on training and research

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I sent the draft MOU to a lab in Harbin as well, but so far no response from them.

Thanks, Jim

From: Liu Longding (b)(6)
Sent: Thursday, July 06, 2017 3:36 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Subject: 答复: Collaborations on training and research

Hi,Jim

Many thanks for your consideration about the collaboration with our institute. Yes, we think the draft agreement is also suitable for us, and we look forward to the establishing this relationship.

Best regards.

Longding

发件人: LeDuc, James W. <jwleduc@UTMB.EDU>
发送时间: 2017年7月5日 15:19
收件人: Liu Longding; Hu Yunzhang (b)(6)
抄送: Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu); Dave Franz (davidrf Franz@gmail.com)
主题: RE: Collaborations on training and research

Dear Longding and Yunzhang,

You will recall that one of the action items from our recent meeting in Wuhan was to establish more formal agreements between our research organizations to facilitate greater collaborations and personnel exchanges. The goal was to have these agreements in place by the time of our next joint meeting to be held here at the GNL later this year or early in 2018. Towards that end, the Wuhan Institute of Virology has drafted the attached MOU that is now being reviewed by my colleagues here at UTMB. We hope to have a final document ready for signing in the very near future. I'm wondering if a similar agreement might be established between your Institute and UTMB? Could you please review the attached draft MOU and see if it meets your institutional requirements. If it does, perhaps we could move forward with the goal of having an agreed upon document that can be announced at our next meeting.

Thank you very much. With best wishes,

Jim

James W. Le Duc, Ph.D.
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Galveston, TX 77555-0610
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(m) (b)(6)



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as "**WIV**")

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as "**UTMB**")

WIV and UTMB hereinafter also individually referred to as a "**Party**" or collectively as the "**Parties**"

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as "**Memorandum**") their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other's rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

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undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) **Notices**

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

[PAGE]

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes,.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

[PAGE]

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.

ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.

iii) Once WIV and UTMB are satisfied that a given discovery ("Invention") arising from a joint project under the MoU is worth protecting by a patent, the inventors from both parties will be Parties will negotiate in good faith to establish the terms of an "Inter-Institutional Agreement," or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties' agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party's assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.

~~required to sign assignment contracts transferring patent rights jointly to WIV and UTMB; and a joint WIV/UTMB patent will be filed in countries to be determined by the two parties.~~

~~iv) WIV and UTMB will assume equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration~~

[PAGE]

~~and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor.~~

iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

vi) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

a. This MoU shall be identified ~~only as the current wish and intent of the Parties regarding the potential for developing parent document of any a program agreement executed between the parties.~~

b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.

c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.

d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.

e. To advise either party on available areas of collaboration and advise the Chief

[PAGE]

Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.
- ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

- i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.
- ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.
- iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

- i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.
- ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

- i) Either party may terminate the MoU if the other party is in breach of terms and conditions

[PAGE]

of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months six months written notice to the other Party.

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. EXPORT CONTROL CONTEXT

Intentionally Omitted

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed

Comment [UTMB1]: In the interest of avoiding confusion with competing law, we should remain silent in this regard.

Export Controlled, received under this Agreement to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By: _____

Name:

Title:

Date:

Place:

By: _____

Name: Carolee A. King, JD

Title: Senior VP and General Counsel

Date:

Place:

Read and understood:

Read and understood:

[PAGE]

Signature of WIV Coordinator

Signature of UTMB Investigator (-Coordinator)
Dr. James W. LeDuc

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发送时间: 2017年7月5日 15:19
收件人: Liu Longding; Hu Yunzhang (b)(6)
抄送: Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu); Dave Franz (davidrf Franz@gmail.com)
主题: RE: Collaborations on training and research

Dear Longding and Yunzhang,

You will recall that one of the action items from our recent meeting in Wuhan was to establish more formal agreements between our research organizations to facilitate greater collaborations and personnel exchanges. The goal was to have these agreements in place by the time of our next joint meeting to be held here at the GNL later this year or early in 2018. Towards that end, the Wuhan Institute of Virology has drafted the attached MOU that is now being reviewed by my colleagues here at UTMB. We hope to have a final document ready for signing in the very near future. I'm wondering if a similar agreement might be established between your Institute and UTMB? Could you please review the attached draft MOU and see if it meets your institutional requirements. If it does, perhaps we could move forward with the goal of having an agreed upon document that can be announced at our next meeting.

Thank you very much. With best wishes,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as "**WIV**")

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as "**UTMB**")

WIV and UTMB hereinafter also individually referred to as a "**Party**" or collectively as the "**Parties**"

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as "**Memorandum**") their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other's rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

[PAGE]

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) **Notices**

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

[PAGE]

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes,.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

[PAGE]

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.

ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.

iii) Once WIV and UTMB are satisfied that a given discovery ("Invention") arising from a joint project under the MoU is worth protecting by a patent, the inventors from both parties will be Parties will negotiate in good faith to establish the terms of an "Inter-Institutional Agreement," or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties' agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party's assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.

~~required to sign assignment contracts transferring patent rights jointly to WIV and UTMB; and a joint WIV/UTMB patent will be filed in countries to be determined by the two parties.~~

~~iv) WIV and UTMB will assume equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration~~

[PAGE]

~~and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor.~~

iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

vi) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

a. This MoU shall be identified ~~only as the current wish and intent of the Parties regarding the potential for developing parent document of any a program agreement executed between the parties.~~

b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.

c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.

d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.

e. To advise either party on available areas of collaboration and advise the Chief

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Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.
- ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

- i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.
- ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.
- iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

- i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.
- ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

- i) Either party may terminate the MoU if the other party is in breach of terms and conditions

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of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months six months written notice to the other Party.

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. EXPORT CONTROL CONTEXT

Intentionally Omitted

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed

Comment [UTMB1]: In the interest of avoiding confusion with competing law, we should remain silent in this regard.

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Export Controlled, received under this Agreement to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By: _____

Name:

Title:

Date:

Place:

By: _____

Name: Carolee A. King, JD

Title: Senior VP and General Counsel

Date:

Place:

Read and understood:

Read and understood:

[PAGE]

Signature of WIV Coordinator

Signature of UTMB Investigator (-Coordinator)
Dr. James W. LeDuc

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 7/14/2017 7:08:53 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'zhanghan' [zhanghan@wh.iov.cn]; 'chenxw' [chenxw@wh.iov.cn]; 'David Franz' [davidrf Franz@gmail.com]
Subject: RE: RE: Re: Thank you!
Importance: High

Greetings Zhiming,

For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

What do you think about holding a 2-3 day meeting during one of the following weeks:

November 13 (this week may be too early to get the MOU finalized and for the Chinese group to obtain their visas, what do you think?)
December 11 (meeting would have to take place later in the week as Jim is traveling the week before)
January 8, 2018
January 15, 2018
January 22, 2018

NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Rusek, Benjamin
Sent: Wednesday, June 28, 2017 4:16 PM
To: 'Yuan Zhiming'; David Franz
Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
Subject: RE: RE: Re: Thank you!

Greetings Zhiming,

Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

Kind regards,

Ben

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Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and bioethics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the

common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprisers.

Thanks for your invitation of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

- 1) Sign a memo between the UTMB and WIV (we are preparing the memo)
- 2) Set up a scientific cooperation working group and identify the main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
- 3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurity and bioethics, the responsibility of two academies.
- 4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

Regards

Yuan Zhiming

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>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

- >1. Write a joint white paper outlining issues of mutual concern
- >2. Work to form an official partnership via a memorandum of understanding
- >between the Galveston National Laboratory and the Wuhan Institute of Virology
- >3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

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>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

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>Benjamin Rusek
>The U.S. National Academy of Sciences
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>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Thursday, May 25, 2017 11:34 PM
>To: David Franz
>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>Zhanghan; chenxw
>Subject: Re: Re: Thank you!

>
>Dear All friends

>
>Thanks you for your contribution for the excellent 2nd China-US
>workshop on challenges of emerging infectious, laboratory biosafety and
>global health security. Without your help, we can not have this good
>communication chance for the scientists and we can not discuss the
>important public health affairs with the privileged scientists from
>China and USA. During the meeting, the scientists, policymakers,
>advisors from China and USA exchange the great achievements in science
>and technology in related areas, discussed the new conception and new
>strategy for disease control, the roles of biosafety, biosecurity and
>bioethics in infectious disease control, and discussed for the
>possibility for future cooperation between the Chinese and American,
>especially the official cooperation between our institute and Galveston
>laboratory. I hope this meeting will be a milestone for further Sino-US
>cooperation on infectious disease control, and I hope your stay in

>wuhan will be the most precious memory i
n your profession.
>
>Yes, we need to have a meeting report, indicating our activities, concerns and suggestion for further
action for both academies, letting the top leaders understand the effectiveness, practicability and
perspective of this meeting. And we need to have a draft memorandum of understanding on collaborations
between UTMB and the our institute, quarentteeing, ensuring the good start has a productive results.
Hopefully we can sign this kind of memorandum in next meeting in USA.
>
>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>
>Regards to all.
>
>Zhiming
>
>
>
>
>
>>>
>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We
would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to
the States.
>>>
>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the
workshop an outstanding success.
>>
>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week.
I believe each of us came away with a similar very positive perspective regarding the meeting, the venue,
the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you
invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says,
there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your
additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's
draft notes.] I believe, together, our participants from both sides have planted seeds for joint future
scientific work and policy discussions, important to all our citizens. We look forward to a meeting in
Galveston and continued opportunities to work together.
>>
>>Best regards, Dave
>>
>>David R. Franz DVM, Ph.D
>>(b)(6)
>>
>>
>>
>>
>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>
>>> Dear Zhiming,
>>>
>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together
such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful
meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant
evening stroll. I thought the talks were especially enlightening and I appreciated very much having the
opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists
who joined us are doing some remarkable research. I look forward to hearing more from them in the
future. There are obvious opportunities for collaborations and I trust that in the coming months we will
succeed in building new partnerships.
>>>
>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this
beautiful facility and we all look forward to it becoming fully operational very soon. I know that this
has been a long and arduous process for you and your team!
>>>
>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and
the Wuhan Institute of Virology and to building similar partnerships between other centers in China and
the USA. As you know, we have a good start on scientific collaborations between our two organizations
with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne
viruses. We look forward to building on these efforts and expanding to new partnerships.
>>>
>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We
would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to
the States.

>>>
>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>>
>>> With best wishes,
>>>
>>> Jim
>>>
>>> James W. Le Duc, Ph.D.
>>> Director
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>>> Galveston, TX 77555-0610
>>> (t) 409-266-6500
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>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>Zhanghan; chenxw
>Subject: Re: Re: Thank you!

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>workshop on challenges of emerging infectious, laboratory biosafety and
>global health security. Without your help, we can not have this good
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>(b)(6)
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>>> Director
>>> Galveston National Laboratory
>>> University of Texas Medical Branch
>>> Galveston, TX 77555-0610
>>> (t) 409-266-6500
>>> (f) 409-266-6810
>>> (m) 409-266-6810

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 7/14/2017 7:08:53 PM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'zhanghan' [zhanghan@wh.iov.cn]; 'chenxw' [chenxw@wh.iov.cn]; 'David Franz' [davidrf Franz@gmail.com]
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NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

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Sent: Wednesday, June 28, 2017 4:16 PM
To: 'Yuan Zhiming'; David Franz
Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
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We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

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The U.S. National Academy of Sciences
1-202-334-3975

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To: Rusek, Benjamin; David Franz
Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
Subject: Re: RE: Re: Thank you!
Importance: High

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>>> (m) (b)(6)

From: LeDuc, James W. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=JWLEDUC]
Sent: 7/17/2017 8:33:40 AM
To: 张晗 [zhanghan@wh.iov.cn]
Subject: RE: Re: Re: FW: Collaborations on training and research
Attachments: 20170705-MoU between WIV and UTMB.DOC

Hi Han,

I hope you (b)(6) are doing well! (b)(6)

Attached is the MOU with suggested edits from our legal office. Please let me know if you do not receive the attachment and we'll send again. Please feel free to comment or question some of the edits and we will work to identify appropriate replacement language.

With best wishes,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Monday, July 17, 2017 3:08 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Subject: Fw: Re: Re: FW: Collaborations on training and research

Dear Prof. LeDuc,

Hope this email finds you well.

Could you please send me the revised MoU from UTMB? In the previous email I did not find the attached MoU that you reviewed and I wrote an email to Adeola Lawal but there was no response.

With many thanks,

Han

-----原始邮件-----

发件人: "张晗" <zhanghan@wh.iov.cn>

发送时间: 2017年7月11日 星期二

收件人: "Lawal, Adeola" <adlawal@UTMB.EDU>

抄送:

主题: Re: Re: FW: Collaborations on training and research

Dear Adeola Lawal,

Sorry to inform that in the previous email I did not find the attached MoUs that you reviewed . Could you please send me again?

With many thanks,

Han Zhang

> -----原始邮件-----

> 发件人: "Yuan Zhiming" <yzm@wh.iov.cn>

> 发送时间: 2017年7月10日 星期一

> 收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "夏菡" <hanxia@wh.iov.cn>

> 抄

送: "Lawal, Adeola" <adlawal@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, zhanghan <zhanghan@wh.iov.cn>

> 主题: Re: FW: Collaborations on training and research

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> Dear James,

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> Thanks for your reply and will contact directedly Aswola Lawal for the revising of MOUs.
> Hopefully we could sign this document while we are in Galveston later this year.

>

> Regards,

>

> Zhiming

>

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>

> >Han, Zhiming,

> >

> >Adeola ("Ade") Lawal from our UTMB office that reviews MOUs has made suggested edits on the attached draft agreement. Please review and let us know if these are acceptable and if they are not, please suggest alternative language. Feel free to work directly with Ade who is copied here. Once we finalize the language we will seek signatures from officials.

> >

> >Thanks, Jim

> >

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> >From: Lawal, Adeola

> >Sent: Thursday, July 06, 2017 12:45 PM

> >To: LeDuc, James W. <jwleduc@UTMB.EDU>

> >Subject: RE: Collaborations on training and research

> >Importance: High

> >

> >Dr. LeDuc,

> >

> >Please see attached redline. Please circulate to your colleagues with copy to me so that I have a direct contact for my files.

> >

> >Best wishes,

> >

> >Ade Lawal, JD

> >Associate Legal Officer

> >Office of Technology Transfer

> >

> >

> >

> >From: LeDuc, James W.

> >Sent: Thursday, July 06, 2017 9:16 AM

> >To: Lawal, Adeola

> >Subject: FW: Collaborations on training and research

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> >Ade,

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> >I shared the draft MOU with colleagues at other institutions in China where BSL4 labs are also nearing opening. (They both participated in our recent meeting in Wuhan and thus this should not come as a surprise.) Please see note below from my colleague in Kunming indicating support for the concept. After you have made any comments/suggestions on the draft you are reviewing, I will send it to both Kunming and Wuhan for their concurrence. I will insert the appropriate Kunming references for the one going to them.

> >

> >I sent the draft MOU to a lab in Harbin as well, but so far no response from them.

> >

> >Thanks, Jim

> >

> >From: Liu Longding (b)(6)

> >Sent: Thursday, July 06, 2017 3:36 AM

> >To: LeDuc, James W. <jwleduc@UTMB.EDU<mailto:jwleduc@UTMB.EDU>>

> >Subject: 答复: Collaborations on training and research

> >

> >

> >Hi, Jim

> >

> >Many thanks for your consideration about the collaboration with our institute. Yes, we think the draft agreement is also suitable for us, and we look forward to the establishing this relationship.

> >

> >

> >

> >Best regards.

> >

> >

> >

> >Longding

> >

> >

> >

> >

> >发件人: LeDuc, James W. <jwleduc@UTMB.EDU<mailto:jwleduc@UTMB.EDU>>

> >发送时间: 2017年7月5日 15:19

> >收件人: Liu Longding; Hu Yunzhang (b)(6)

> >抄

送: Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu<mailto:BRusek@nas.edu>); Dave Franz (davidrfranz@gmail.com<mailto:davidrfranz@gmail.com>)

> >主题: RE: Collaborations on training and research

> >

> >

> >Dear Longding and Yunzhang,

> >

> >

> >

> >You will recall that one of the action items from our recent meeting in Wuhan was to establish more formal agreements between our research organizations to facilitate greater collaborations and personnel exchanges. The goal was to have these agreements in place by the time of our next joint meeting to be held here at the GNL later this year or early in 2018. Towards that end, the Wuhan Institute of Virology has drafted the attached MOU that is now being reviewed by my colleagues here at UTMB. We hope to have a final document ready for signing in the very near future. I'

am wondering if a similar agreement might be established between your Institute and UTMB? Could you please review the attached draft MOU and see if it meets your institutional requirements. If it does, perhaps we could move forward with the goal of having an agreed upon document that can be announced at our next meeting.

> >

> >

> >
> >Thank you very much. With best wishes,
> >
> >
> >
> >Jim
> >
> >
> >
> >James W. Le Duc, Ph.D.
> >
> >Director
> >
> >Galveston National Laboratory
> >
> >University of Texas Medical Branch
> >
> >Galveston, TX 77555-0610
> >
> >(t) 409-266-6500
> >
> >(f) 409-266-6810
> >
> >(m) (b)(6)
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> >
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> >



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as "**WIV**")

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as "**UTMB**")

WIV and UTMB hereinafter also individually referred to as a "**Party**" or collectively as the "**Parties**"

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as "**Memorandum**") their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other's rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

[PAGE]

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) **Notices**

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

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[PAGE]

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- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

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- receive researchers, technicians and students of both parties for periods of training, study and/or research;
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- carry out joint research programs and apply for international grants with joint efforts;
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all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.

ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.

iii) Once WIV and UTMB are satisfied that a given discovery ("Invention") arising from a joint project under the MoU is worth protecting by a patent, ~~the inventors from both parties will be Parties~~ will negotiate in good faith to establish the terms of an "Inter-Institutional Agreement," or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties' agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party's assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.

~~required to sign assignment contracts transferring patent rights jointly to WIV and UTMB; and a joint WIV/UTMB patent will be filed in countries to be determined by the two parties.~~

iv) ~~WIV and UTMB will assume equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration~~

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~~and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor.~~

iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

vi) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

a. This MoU shall be identified only as the current wish and intent of the Parties regarding the potential for developing parent document of any a program agreement executed between the parties.

b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.

c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.

d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.

e. To advice either party on available areas of collaboration and advice the Chief

[PAGE]

Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.
- ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

- i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.
- ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.
- iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

- i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.
- ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

- i) Either party may terminate the MoU if the other party is in breach of terms and conditions

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of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months ~~six~~ months written notice to the other Party.

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. EXPORT CONTROL CONTEXT

Intentionally Omitted

~~This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.~~

The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed

Comment [UTMB1]: In the interest of avoiding confusion with competing law, we should remain silent in this regard.

Export Controlled, received under this Agreement to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name: Carolee A. King, JD

Title: Senior VP and General Counsel

Date:

Place:

Read and understood:

Read and understood:

[PAGE]

Signature of WIV Coordinator

Signature of UTMB Investigator (-Coordinator)
Dr. James W. LeDuc

From: LeDuc, James W. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=JWLEDUC]
Sent: 7/17/2017 8:33:40 AM
To: 张晗 [zhanghan@wh.iov.cn]
Subject: RE: Re: Re: FW: Collaborations on training and research
Attachments: 20170705-MoU between WIV and UTMB.DOC

Hi Han,

I hope you (b)(6) are doing well! (b)(6)

Attached is the MOU with suggested edits from our legal office. Please let me know if you do not receive the attachment and we'll send again. Please feel free to comment or question some of the edits and we will work to identify appropriate replacement language.

With best wishes,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Monday, July 17, 2017 3:08 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Subject: Fw: Re: Re: FW: Collaborations on training and research

Dear Prof. LeDuc,

Hope this email finds you well.

Could you please send me the revised MoU from UTMB? In the previous email I did not find the attached MoU that you reviewed and I wrote an email to Adeola Lawal but there was no response.

With many thanks,

Han

-----原始邮件-----

发件人: "张晗" <zhanghan@wh.iov.cn>

发送时间: 2017年7月11日 星期二

收件人: "Lawal, Adeola" <adlawal@UTMB.EDU>

抄送:

主题: Re: Re: FW: Collaborations on training and research

Dear Adeola Lawal,

Sorry to inform that in the previous email I did not find the attached MoUs that you reviewed . Could you please send me again?

With many thanks,

Han Zhang

> -----原始邮件-----

> 发件人: "Yuan Zhiming" <yzm@wh.iov.cn>

> 发送时间: 2017年7月10日 星期一

> 收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "夏菡" <hanxia@wh.iov.cn>

> 抄

> 送: "Lawal, Adeola" <adlawal@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, zhanghan <zhanghan@wh.iov.cn>

> 主题: Re: FW: Collaborations on training and research

>

> Dear James,

>

> Thanks for your reply and will contact directedly Aswola Lawal for the revising of MOUs.
> Hopefully we could sign this document while we are in Galveston later this year.

>

> Regards,

>

> Zhiming

>

>

>

>

> >Han, Zhiming,

> >

> >Adeola ("Ade") Lawal from our UTMB office that reviews MOUs has made suggested edits on the attached draft agreement. Please review and let us know if these are acceptable and if they are not, please suggest alternative language. Feel free to work directly with Ade who is copied here. Once we finalize the language we will seek signatures from officials.

> >

> >Thanks, Jim

> >

> >James W. Le Duc, Ph.D.

> >Director

> >Galveston National Laboratory

> >University of Texas Medical Branch

> >Galveston, TX 77555-0610

> >(t) 409-266-6500

> >(f) 409-266-6810

> >(m) (b)(6)

> >

> >

> >

> >

> >

> >From: Lawal, Adeola

> >Sent: Thursday, July 06, 2017 12:45 PM

> >To: LeDuc, James W. <jwleduc@UTMB.EDU>

> >Subject: RE: Collaborations on training and research

> >Importance: High

> >

> >Dr. LeDuc,

> >

> >Please see attached redline. Please circulate to your colleagues with copy to me so that I have a direct contact for my files.

> >

> >Best wishes,

> >

> >Ade Lawal, JD

> >Associate Legal Officer

> >Office of Technology Transfer

> >

> >

> >

> >From: LeDuc, James W.

> >Sent: Thursday, July 06, 2017 9:16 AM

> >To: Lawal, Adeola

> >Subject: FW: Collaborations on training and research

> >

> >Ade,

> >

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> >Sent: Thursday, July 06, 2017 3:36 AM

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> >Subject: 答复: Collaborations on training and research

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> >

> >Longding

> >

> >

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> >发送时间: 2017年7月5日 15:19

> >收件人: Liu Longding; Hu Yunzhang (b)(6)

> >抄

送: Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu<<mailto:BRusek@nas.edu>>); Dave Franz (davidrfranz@gmail.com<<mailto:davidrfranz@gmail.com>>)

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PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

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i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.

ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.

iii) Once WIV and UTMB are satisfied that a given discovery ("Invention") arising from a joint project under the MoU is worth protecting by a patent, the inventors from both parties will be Parties will negotiate in good faith to establish the terms of an "Inter-Institutional Agreement," or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties' agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party's assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.

~~required to sign assignment contracts transferring patent rights jointly to WIV and UTMB; and a joint WIV/UTMB patent will be filed in countries to be determined by the two parties.~~

~~iv) WIV and UTMB will assume equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration~~

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iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

vi) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

a. This MoU shall be identified ~~only as the current wish and intent of the Parties regarding the potential for developing parent document of any a program agreement executed between the parties.~~

b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.

c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.

d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.

e. To advice either party on available areas of collaboration and advice the Chief

[PAGE]

Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.
- ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

- i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.
- ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.
- iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

- i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.
- ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

- i) Either party may terminate the MoU if the other party is in breach of terms and conditions

[PAGE]

of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months six months written notice to the other Party.

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. EXPORT CONTROL CONTEXT

Intentionally Omitted

This MoU shall be read and construed in accordance with the Laws of United States of America and the Laws of the People's Republic of China.

The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed

Comment [UTMB1]: In the interest of avoiding confusion with competing law, we should remain silent in this regard.

Export Controlled, received under this Agreement to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By: _____

Name:

Title:

Date:

Place:

By: _____

Name: Carolee A. King, JD

Title: Senior VP and General Counsel

Date:

Place:

Read and understood:

Read and understood:

[PAGE]

Signature of WIV Coordinator

Signature of UTMB Investigator (-Coordinator)
Dr. James W. LeDuc

From: Yuan Zhiming <yzm@wh.iov.cn>
Sent: Sunday, July 23, 2017 8:50 PM
To: Rusek, Benjamin
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
Subject: Re: RE: RE: Thank you!

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Regards

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>The U.S. National Academy of Sciences

>1-202-334-3975

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>Sent: Wednesday, June 28, 2017 4:16 PM

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 >The U.S. National Academy of Sciences
 >1-202-334-3975
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 >Sent: Monday, June 26, 2017 3:19 AM
 >To: Rusek, Benjamin; David Franz
 >Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
 >Subject: Re: RE: Re: Thank you!
 >Importance: High
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>>Work to form an official partnership via a memorandum of understanding
>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

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>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

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>>Sent: Thursday, May 25, 2017 11:34 PM
>>To: David Franz
>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>zhanghan; chenxw
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>>Regards to all.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

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>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

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>>>Best regards, Dave

>>>

>>>David R. Franz DVM, Ph.D

>>>

>>>(b)(6)

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>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6/b7C

From: Yuan Zhiming [yzm@wh.iov.cn]
Sent: 7/23/2017 8:49:55 PM
To: Rusek, Benjamin [BRusek@nas.edu]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'zhanghan' [zhanghan@wh.iov.cn]; 'chenxw' [chenxw@wh.iov.cn]; 'David Franz' [davidrf Franz@gmail.com]
Subject: Re: RE: RE: Thank you!
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>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) (b)(6)

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Sent: Friday, July 28, 2017 4:19 PM
To: LeDuc, James W.; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Thank you!

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The U.S. National Academy of Sciences
1-202-334-3975

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>>Kind regards,
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>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
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>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Thursday, May 25, 2017 11:34 PM
>>To: David Franz
>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>zhanghan; chenxw
>>Subject: Re: Re: Thank you!
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>>Dear All friends
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>>workshop on challenges of emerging infectious, laboratory biosafety
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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

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>>>> (t) 409-266-6500

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Wuhan: Zhiming and Zhihong Hu
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Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

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CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]
Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715 and enter pass code 12223052 when prompted.**

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>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

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>>Regards to all.

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>>>David R. Franz DVM, Ph.D

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>>>(b)(6)

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>>>> Jim

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6
b7C

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 7/31/2017 12:54:32 PM
To: LeDuc, James W. [jwleduc@UTMB.EDU]; 'David Franz' [davidrf Franz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]
Subject: Conference call?

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1-202-334-3975

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We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

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Sent: Sunday, July 23, 2017 9:50 PM
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Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: Re: RE: RE: Thank you!
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>From: Rusek, Benjamin
>Sent: Wednesday, June 28, 2017 4:16 PM
>To: 'Yuan Zhiming'; David Franz
>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>Subject: RE: RE: Re: Thank you!
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>Subject: Re: RE: Re: Thank you!

>Importance: High

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>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

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>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

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>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

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>Yuan Zhiming

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>>1. Write a joint white paper outlining issues of mutual concern 2.

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>>Subject: Re: Re: Thank you!

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>>>> (t) 409-266-6500

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>>>> (m) b6
b7C

From: Shi, Pei yong [/O=UTMB/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=SHI, PEI YONGCBA]
Sent: 7/31/2017 12:59:39 PM
To: Rusek, Benjamin [BRusek@nas.edu]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'David Franz' [davidrf Franz@gmail.com]
CC: Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]
Subject: RE: Conference call?

Yes. I will call in tomorrow.

Thanks.

Pie-Yong

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
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>>>> With best wishes,

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) (b)(6)

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CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]
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We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

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>>>> Jim

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>>>> James W. Le Duc, Ph.D.

>>>> Director

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>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6

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>>Subject: Re: Re: Thank you!

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
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>>>> With best wishes,
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>>>> Jim
>>>>
>>>> James W. Le Duc, Ph.D.
>>>> Director
>>>> Galveston National Laboratory
>>>> University of Texas Medical Branch
>>>> Galveston, TX 77555-0610
>>>> (t) 409-266-6500
>>>> (f) 409-266-6810
>>>> (m) (b)(6)

From: LeDuc, James W. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=JWLEDUC]
Sent: 8/1/2017 9:36:15 AM
To: Rusek, Benjamin [BRusek@nas.edu]; 'David Franz' [davidrf Franz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Analilia Guerra (anaguerr@UTMB.EDU) [anaguerr@UTMB.EDU]
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From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
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The U.S. National Academy of Sciences
1-202-334-3975

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Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
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Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

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From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

Sent: Sunday, July 23, 2017 9:50 PM

To: Rusek, Benjamin

Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

Subject: Re: RE: RE: Re: Thank you!

Importance: High

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>Subject: RE: RE: Re: Thank you!
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>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

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>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Thursday, May 25, 2017 11:34 PM

>>To: David Franz

>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>zhanghan; chenxw

>>Subject: Re: Re: Thank you!

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>>Dear All friends

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>>Thanks you for your contributiion for the excellent 2nd China-US

>>workshop on challenges of emerging infectious, laboratory biosafety

>>and global health security. Without your help, we can not have this

>>good communication chance for the scientists and we can not discuss

>>the important public hearth affires with the previlged scientists

>>from China and USA. During the meeting, the scientists, policymakers,
>>advisors from China and USA exchange the great achievements in science
>>and technology in related areas, discussed the new conception and new
>>strategy for disease control, the roles of biosafety, biosecurity and
>>bioethics in infectious disease control, and discussed for the
>>possibility for future cooperation between the Chinese and American,
>>especially the official cooperation between our institute and Gaveston
>>laboratory. I hope this meeting will be a milestone for further Sino-US
>>cooperation on infectious disease control, and I hope your stay in
>>Wuhan will be the most precious memory in
> n your profession.

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>>Yes, we need to have a meeting report, indicating our activities, concerns and suggestion for further action for both
academies, letting the top leaders understand the effectiveness, practicability and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and our institute,
quarantining, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in next
meeting in USA.

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>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>
>>Regards to all.

>>
>>Zhiming

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.

>>>
>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe
each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and
particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our
future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to
continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal
meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have
planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.

>>>
>>>Best regards, Dave

>>>
>>>David R. Franz DVM, Ph.D

>>>
>>>(b)(6)

>>>
>>>
>>>
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>>>

>>>

>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

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>>>> (t) 409-266-6500

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>>>> (m) (b)(6)

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Sent: 8/1/2017 9:36:15 AM
To: Rusek, Benjamin [BRusek@nas.edu]; 'David Franz' [davidrf Franz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
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>>
>>Regards to all.

>>
>>Zhiming

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>>>

>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
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meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have
planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.

>>>
>>>Best regards, Dave

>>>
>>>David R. Franz DVM, Ph.D

>>>
>>>(b)(6)

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>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

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>>>> Dear Zhiming,

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>>>> With best wishes,

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>>>> Jim

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) (b)(6)

From: Shi, Pei yong [/O=UTMB/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=SHI, PEI YONGCBA]
Sent: 8/1/2017 9:37:46 AM
To: LeDuc, James W. [jwleduc@UTMB.EDU]; Rusek, Benjamin [BRusek@nas.edu]; 'David Franz' [davidrf Franz@gmail.com]
CC: Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
Subject: RE: Conference call?

I'm on track.

Thanks. Pei-Yong

From: LeDuc, James W.
Sent: Tuesday, August 01, 2017 9:36 AM
To: Rusek, Benjamin <BRusek@nas.edu>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; Guerra, Analilia <anaguerr@UTMB.EDU>
Subject: RE: Conference call?

Are we all in agreement for the call today to be at 1:30 CT/2:30ET?

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: Conference call?

Hi Jim,

1:30 CT works for me. Talk to you then.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

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Cc: Shi, Pei yong; Ksiazek, Thomas G.
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Any chance we could do it later in the day, say 1:30 or so CT. I have a conflict noon to 1 pm across campus? If needed, I can cancel but would prefer not to.

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Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>

Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715** and enter pass code **12223052** when prompted.

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PS happy to suggest CAMS and CAAS representation if they are technical folks.

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Maybe we can have a conference call next week to discuss?

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Subject: RE: RE: RE: Re: Thank you!

Importance: High

Greetings,

It seems that Zhiming does not have a date preference. How about we designate the week of January 15, 2018 for the meeting?

Re the Chinese scientist delegation, maybe two from each of China's BSL4 labs:?

Wuhan: Zhiming and Zhihong Hu
Kunming: Longding Liu and Yunzhang Hu
Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

That's 10-12 people. Am I forgetting anyone?

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The U.S. National Academy of Sciences
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-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Sunday, July 23, 2017 9:50 PM
To: Rusek, Benjamin
Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: Re: RE: RE: Re: Thank you!
Importance: High

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Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

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Zhiming

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>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from
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>From: Rusek, Benjamin
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>To: 'Yuan Zhiming'; David Franz
>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
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>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post
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>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

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>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

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>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>

>Regards

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>Yuan Zhiming

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>>

>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>1. Write a joint white paper outlining issues of mutual concern 2.

>>Work to form an official partnership via a memorandum of understanding

>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>

>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>

>>Kind regards,

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Thursday, May 25, 2017 11:34 PM

>>To: David Franz

>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>zhanghan; chenxw

>>Subject: Re: Re: Thank you!

>>

>>Dear All friends

>>

>>Thanks you for your contributiion for the excellent 2nd China-US

>>workshop on challenges of emerging infectious, laboratory biosafety

>>and global health security. Without your help, we can not have this

>>good communication chance for the scientists and we can not discuss

>>the important public hearth affires with the previligid scientists

>>from China and USA. During the meeting, the scientists, policymakers,

>>advisors from China and USA exchange the great achievements in science

>>and technology in related areas, discussed the new conception and new

>>strategy for disease control, the roles of biosafety, biosecurity and

>>bioethics in infectious disease control, and discussed for the

>>possibility for future cooperation between the Chinese and American,

>>especially the official coopeation between our institute and Gaveston

>>laboratory. I hope this meeting will be a milestone for futher Sino-US

>>cooperation on infectious disease control, and I hope your stay in

>>Wuhan will be the most precious memory i

> n your profession.

>>

>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both

academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we

need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,

quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

>>

>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>

>>Regards to all.

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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Subject: RE: Conference call?

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>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>1. Write a joint white paper outlining issues of mutual concern 2.

>>Work to form an official partnership via a memorandum of understanding

>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>

>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>

>>Kind regards,

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Thursday, May 25, 2017 11:34 PM

>>To: David Franz

>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>zhanghan; chenxw

>>Subject: Re: Re: Thank you!

>>

>>Dear All friends

>>

>>Thanks you for your contributiion for the excellent 2nd China-US

>>workshop on challenges of emerging infectious, laboratory biosafety

>>and global health security. Without your help, we can not have this

>>good communication chance for the scientists and we can not discuss

>>the important public hearth affires with the previligid scientists

>>from China and USA. During the meeting, the scientists, policymakers,

>>advisors from China and USA exchange the great achievements in science

>>and technology in related areas, discussed the new conception and new

>>strategy for disease control, the roles of biosafety, biosecurity and

>>bioethics in infectious disease control, and discussed for the

>>possibility for future cooperation between the Chinese and American,

>>especially the official coopeation between our institute and Gaveston

>>laboratory. I hope this meeting will be a milestone for futher Sino-US

>>cooperation on infectious disease control, and I hope your stay in

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> n your profession.

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academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we

need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,

quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

>>

>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>

>>Regards to all.

>>

>>Zhiming

>>

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

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>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have

planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>

>>>Best regards, Dave

>>>

>>>David R. Franz DVM, Ph.D

>>>

>>>(b)(6)

>>>

>>>

>>>

>>>

>>>

>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>

>>>> Dear Zhiming,

>>>>

>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

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>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

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>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

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>>>> With best wishes,

>>>>

>>>> Jim

>>>>

>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) (b)(6)

From: Ksiazek, Thomas G. [/O=UTMB/OU=EMAIL/CN=RECIPIENTS/CN=TGKSIAZE]
Sent: 8/1/2017 10:20:16 AM
To: Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]
Subject: RE: Conference call?
Location: TELECON
Start: 8/1/2017 1:30:00 PM
End: 8/1/2017 2:00:00 PM
Show Time As: Busy

From: Shi, Pei yong
Sent: 1 August, 2017 09:38
To: LeDuc, James W.; Rusek, Benjamin; 'David Franz'
Cc: Ksiazek, Thomas G.; Guerra, Analilia
Subject: RE: Conference call?

I'm on track.

Thanks. Pei-Yong

From: LeDuc, James W.
Sent: Tuesday, August 01, 2017 9:36 AM
To: Rusek, Benjamin <BRusek@nas.edu>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; Guerra, Analilia <anaguerr@UTMB.EDU>
Subject: RE: Conference call?

Are we all in agreement for the call today to be at 1:30 CT/2:30ET?

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: Conference call?

Hi Jim,

1:30 CT works for me. Talk to you then.

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Monday, July 31, 2017 2:36 PM
To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: Conference call?

Any chance we could do it later in the day, say 1:30 or so CT. I have a conflict noon to 1 pm across campus? If needed, I can cancel but would prefer not to.

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715** and enter pass code **12223052** when prompted.

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

-----Original Message-----

From: Rusek, Benjamin

Sent: Friday, July 28, 2017 5:36 PM

To: 'LeDuc, James W.'; 'David Franz'

Cc: Shi, Pei yong; Ksiazek, Thomas G.

Subject: RE: RE: RE: Re: Thank you!

Sounds good, yes happy to talk early next week. Monday or Tuesday works for me at just about any time, but how about 1:00 pm et on Monday?

PS happy to suggest CAMS and CAAS representation if they are technical folks.

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]

Sent: Friday, July 28, 2017 5:29 PM

To: Rusek, Benjamin; 'David Franz'

Cc: Shi, Pei yong; Ksiazek, Thomas G.

Subject: RE: RE: RE: Re: Thank you!

Dates look fine to me and I agree on your preliminary list of participants, although should we be extending an invitation to someone from the Chinese Academy of Medical Sciences (Kunming parent) and Chinese Academy of Agricultural Sciences?

Maybe we can have a conference call next week to discuss?

Thanks, Jim

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Sent: Friday, July 28, 2017 4:19 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>

Subject: RE: RE: RE: Re: Thank you!

Importance: High

Greetings,

It seems that Zhiming does not have a date preference. How about we designate the week of January 15, 2018 for the meeting?

Re the Chinese scientist delegation, maybe two from each of China's BSL4 labs:?

Wuhan: Zhiming and Zhihong Hu

Kunming: Longding Liu and Yunzhang Hu

Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

That's 10-12 people. Am I forgetting anyone?

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

Sent: Sunday, July 23, 2017 9:50 PM

To: Rusek, Benjamin

Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

Subject: Re: RE: RE: Re: Thank you!

Importance: High

Deare Benjamin,

Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

Regards

Zhiming

>Greetings Zhiming,

>

>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>

>What do you think about holding a 2-3 day meeting during one of the following weeks:

>

>November 13 (this week may be too early to get the MOU finalized and

>for the Chinese group to obtain their visas, what do you think?)

>December 11 (meeting would have to take place later in the week as Jim

>is traveling the week before) January 8, 2018 January 15, 2018 January

>22, 2018

>

>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>

>Kind regards,

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>-----Original Message-----

>From: Rusek, Benjamin

>Sent: Wednesday, June 28, 2017 4:16 PM

>To: 'Yuan Zhiming'; David Franz

>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>Subject: RE: RE: Re: Thank you!

>

>Greetings Zhiming,

>

>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>

>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>

>Kind regards,

>

>Ben

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>-----Original Message-----

>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>Sent: Monday, June 26, 2017 3:19 AM

>To: Rusek, Benjamin; David Franz

>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>Subject: Re: RE: Re: Thank you!

>Importance: High

>

>Dear Rusek,

>

>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and bioethics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosaftey, biosecurity and bioethics among publics, academics, enterprners.

>

>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>2) Set up a scientific cooperation working group and identify the main

>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurity and bioethics, the responsibility of two academies.

>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>

>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>

>Regards

>

>Yuan Zhiming

>

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>>

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>>zhanghan; chenxw

>>Subject: Re: Re: Thank you!

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> n your profession.

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>>>

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>>>

>>>David R. Franz DVM, Ph.D

>>>

>>>(b)(6)

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>>>> Jim

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>>>> James W. Le Duc, Ph.D.

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>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) (b)(6)

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 8/1/2017 10:45:18 AM
To: Shi, Pei yong [peshi@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'David Franz' [davidrf Franz@gmail.com]
CC: Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
Subject: RE: Conference call?

Yes, the time works for me. Dave are you available?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Shi, Pei yong [mailto:peshi@UTMB.EDU]
Sent: Tuesday, August 01, 2017 10:38 AM
To: LeDuc, James W.; Rusek, Benjamin; 'David Franz'
Cc: Ksiazek, Thomas G.; Guerra, Analilia
Subject: RE: Conference call?

I'm on track.
Thanks. Pei-Yong

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The U.S. National Academy of Sciences
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Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

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Zhiming

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>Kind regards,

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>-----Original Message-----

>From: Rusek, Benjamin

>Sent: Wednesday, June 28, 2017 4:16 PM

>To: 'Yuan Zhiming'; David Franz

>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>Subject: RE: RE: Re: Thank you!

>

>Greetings Zhiming,

>

>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>

>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>

>Kind regards,

>

>Ben
>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Monday, June 26, 2017 3:19 AM
>To: Rusek, Benjamin; David Franz
>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>Subject: Re: RE: Thank you!
>Importance: High
>
>Dear Rusek,
>
>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosaftey, biosecurity and bioethics among publics, academics, enterprners.
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>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
>2) Set up a scientific cooperation working group and identify the main
>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
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>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
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>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
>>1. Write a joint white paper outlining issues of mutual concern 2.
>>Work to form an official partnership via a memorandum of understanding
>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>
>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).
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>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
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>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Thursday, May 25, 2017 11:34 PM
>>To: David Franz
>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>zhanghan; chenxw
>>Subject: Re: Re: Thank you!
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>>Dear All friends
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>>Thanks you for your contributiion for the excellent 2nd China-US
>>workshop on challenges of emerging infectious, laboratory biosafety
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>>strategy for disease control, the roles of biosafety, biosecurity and
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>>laboratory. I hope this meeting will be a milestone for futher Sino-US
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> n your profession.
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quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
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>>
>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>
>>Regards to all.
>>
>>Zhiming
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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>>
>>>> I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.
>>>
>>>> Best regards, Dave
>>>
>>>> David R. Franz DVM, Ph.D
>>>
>>>> (b)(6)
>>>
>>>
>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>
>>>> Dear Zhiming,
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>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>>>
>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
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>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.
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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>

>>>> With best wishes,

>>>>

>>>> Jim

>>>>

>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6, c1

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 8/1/2017 10:45:18 AM
To: Shi, Pei yong [peshi@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'David Franz' [davidrf Franz@gmail.com]
CC: Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
Subject: RE: Conference call?

Yes, the time works for me. Dave are you available?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Shi, Pei yong [mailto:peshi@UTMB.EDU]
Sent: Tuesday, August 01, 2017 10:38 AM
To: LeDuc, James W.; Rusek, Benjamin; 'David Franz'
Cc: Ksiazek, Thomas G.; Guerra, Analilia
Subject: RE: Conference call?

I'm on track.
Thanks. Pei-Yong

From: LeDuc, James W.
Sent: Tuesday, August 01, 2017 9:36 AM
To: Rusek, Benjamin <BRusek@nas.edu>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; Guerra, Analilia <anaguerr@UTMB.EDU>
Subject: RE: Conference call?

Are we all in agreement for the call today to be at 1:30 CT/2:30ET?

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: Conference call?

Hi Jim,

1:30 CT works for me. Talk to you then.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Monday, July 31, 2017 2:36 PM

To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: Conference call?

Any chance we could do it later in the day, say 1:30 or so CT. I have a conflict noon to 1 pm across campus? If needed, I can cancel but would prefer not to.

Thanks, Jim

From: Rusek, Benjamin [<mailto:BRusek@nas.edu>]
Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715** and enter pass code **12223052** when prompted.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Rusek, Benjamin
Sent: Friday, July 28, 2017 5:36 PM
To: 'LeDuc, James W.'; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Re: Thank you!

Sounds good, yes happy to talk early next week. Monday or Tuesday works for me at just about any time, but how about 1:00 pm et on Monday?

PS happy to suggest CAMS and CAAS representation if they are technical folks.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [<mailto:jwleduc@UTMB.EDU>]
Sent: Friday, July 28, 2017 5:29 PM
To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Re: Thank you!

Dates look fine to me and I agree on your preliminary list of participants, although should we be extending an invitation to someone from the Chinese Academy of Medical Sciences (Kunming parent) and Chinese Academy of Agricultural Sciences?

Maybe we can have a conference call next week to discuss?

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]

Sent: Friday, July 28, 2017 4:19 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrfranz@gmail.com>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>

Subject: RE: RE: RE: Thank you!

Importance: High

Greetings,

It seems that Zhiming does not have a date preference. How about we designate the week of January 15, 2018 for the meeting?

Re the Chinese scientist delegation, maybe two from each of China's BSL4 labs:?

Wuhan: Zhiming and Zhihong Hu
Kunming: Longding Liu and Yunzhang Hu
Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

That's 10-12 people. Am I forgetting anyone?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

Sent: Sunday, July 23, 2017 9:50 PM

To: Rusek, Benjamin

Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

Subject: Re: RE: RE: Thank you!

Importance: High

Deare Benjamin,

Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

Regards

Zhiming

>Greetings Zhiming,

>

>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>

>What do you think about holding a 2-3 day meeting during one of the following weeks:

>

>November 13 (this week may be too early to get the MOU finalized and

>for the Chinese group to obtain their visas, what do you think?)

>December 11 (meeting would have to take place later in the week as Jim

>is traveling the week before) January 8, 2018 January 15, 2018 January

>22, 2018

>

>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>

>Kind regards,

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>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

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>-----Original Message-----

>From: Rusek, Benjamin

>Sent: Wednesday, June 28, 2017 4:16 PM

>To: 'Yuan Zhiming'; David Franz

>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>Subject: RE: RE: Re: Thank you!

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>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
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>>>> With best wishes,

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>>>> Jim

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6, c1

From: davidrf Franz@gmail.com [davidrf Franz@gmail.com]
Sent: 8/1/2017 11:24:24 AM
To: Rusek, Benjamin [BRusek@nas.edu]
CC: Shi, Pei yong [peshi@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
Subject: Re: Conference call?

Yes. 12:30 mountain time. Dave

Sent from my iPhone

On Aug 1, 2017, at 9:45 AM, Rusek, Benjamin <BRusek@nas.edu> wrote:

Yes, the time works for me. Dave are you available?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Shi, Pei yong [mailto:peshi@UTMB.EDU]
Sent: Tuesday, August 01, 2017 10:38 AM
To: LeDuc, James W.; Rusek, Benjamin; 'David Franz'
Cc: Ksiazek, Thomas G.; Guerra, Analilia
Subject: RE: Conference call?

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Thanks. Pei-Yong

From: LeDuc, James W.
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Subject: RE: Conference call?

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Thanks, Jim

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Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
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The U.S. National Academy of Sciences
1-202-334-3975

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To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: Conference call?

Any chance we could do it later in the day, say 1:30 or so CT. I have a conflict noon to 1 pm across campus? If needed, I can cancel but would prefer not to.

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
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Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715** and enter pass code **12223052** when prompted.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Rusek, Benjamin
Sent: Friday, July 28, 2017 5:36 PM
To: 'LeDuc, James W.'; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Thank you!

Sounds good, yes happy to talk early next week. Monday or Tuesday works for me at just about any time, but how about 1:00 pm et on Monday?

PS happy to suggest CAMS and CAAS representation if they are technical folks.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Friday, July 28, 2017 5:29 PM

To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Re: Thank you!

Dates look fine to me and I agree on your preliminary list of participants, although should we be extending an invitation to someone from the Chinese Academy of Medical Sciences (Kunming parent) and Chinese Academy of Agricultural Sciences?

Maybe we can have a conference call next week to discuss?

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Friday, July 28, 2017 4:19 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: RE: RE: Re: Thank you!
Importance: High

Greetings,

It seems that Zhiming does not have a date preference. How about we designate the week of January 15, 2018 for the meeting?

Re the Chinese scientist delegation, maybe two from each of China's BSL4 labs:?

Wuhan: Zhiming and Zhihong Hu
Kunming: Longding Liu and Yunzhang Hu
Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

That's 10-12 people. Am I forgetting anyone?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Sunday, July 23, 2017 9:50 PM
To: Rusek, Benjamin
Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: Re: RE: RE: Re: Thank you!
Importance: High

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There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

Regards

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>Greetings Zhiming,

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>for the Chinese group to obtain their visas, what do you think?)

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>is traveling the week before) January 8, 2018 January 15, 2018 January

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>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

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>The U.S. National Academy of Sciences

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>1-202-334-3975
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>>1. Write a joint white paper outlining issues of mutual concern 2.

>>Work to form an official partnership via a memorandum of understanding
>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings
in the United States at the Galveston National Laboratory (GNL) late in 2017.

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a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for
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>>To: David Franz
>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>zhanghan; chenxw
>>Subject: Re: Re: Thank you!

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>>Dear All friends

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>>Thanks you for your contributiion for the excellent 2nd China-US
>>workshop on challenges of emerging infectious, laboratory biosafety
>>and global health security. Without your help, we can not have this
>>good communication chance for the scientists and we can not discuss
>>the important public hearth affires with the previlged scientists
>>from China and USA. During the meeting, the scientists, policymakers,
>>advisors from China and USA exchange the great achievements in science
>>and technology in related areas, discussed the new conception and new
>>strategy for disease control, the roles of biosafety, biosecurity and
>>bioethics in infectious disease control, and discussed for the
>>possibility for future cooperation between the Chinese and American,
>>especially the official coopeation between our institute and Gaveston
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>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.

>>

>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>

>>Regards to all.

>>

>>Zhiming

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

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>>>

>>>Best regards, Dave

>>>

>>>David R. Franz DVM, Ph.D

>>>

>>>(b)(6)

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>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

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>>>> With best wishes,

>>>>

>>>> Jim

>>>>

>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6

From: davidrf Franz@gmail.com [davidrf Franz@gmail.com]
Sent: 8/1/2017 11:24:24 AM
To: Rusek, Benjamin [BRusek@nas.edu]
CC: Shi, Pei yong [peshi@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
Subject: Re: Conference call?

Yes. 12:30 mountain time. Dave

Sent from my iPhone

On Aug 1, 2017, at 9:45 AM, Rusek, Benjamin <BRusek@nas.edu> wrote:

Yes, the time works for me. Dave are you available?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Shi, Pei yong [mailto:peshi@UTMB.EDU]
Sent: Tuesday, August 01, 2017 10:38 AM
To: LeDuc, James W.; Rusek, Benjamin; 'David Franz'
Cc: Ksiazek, Thomas G.; Guerra, Analilia
Subject: RE: Conference call?

I'm on track.
Thanks. Pei-Yong

From: LeDuc, James W.
Sent: Tuesday, August 01, 2017 9:36 AM
To: Rusek, Benjamin <BRusek@nas.edu>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; Guerra, Analilia <anaguerr@UTMB.EDU>
Subject: RE: Conference call?

Are we all in agreement for the call today to be at 1:30 CT/2:30ET?

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: Conference call?

Hi Jim,

1:30 CT works for me. Talk to you then.

Kind regards,

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1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
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To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: Conference call?

Any chance we could do it later in the day, say 1:30 or so CT. I have a conflict noon to 1 pm across campus? If needed, I can cancel but would prefer not to.

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715** and enter pass code **12223052** when prompted.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

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To: 'LeDuc, James W.'; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Thank you!

Sounds good, yes happy to talk early next week. Monday or Tuesday works for me at just about any time, but how about 1:00 pm et on Monday?

PS happy to suggest CAMS and CAAS representation if they are technical folks.

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>>>David R. Franz DVM, Ph.D

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>>>(b)(6)

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 8/1/2017 1:38:51 PM
To: LeDuc, James W. [jwleduc@UTMB.EDU]; 'David Franz' [davidrf Franz@gmail.com]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; Guerra, Analilia [anaguerr@UTMB.EDU]
Subject: RE: Conference call?
Attachments: NIV CAS NAS short meeting summary vf NIV.PDF

From the summary:

Topics for the next workshop at the Galveston National Laboratory will likely center around specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Tuesday, August 01, 2017 10:36 AM
To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.; Guerra, Analilia
Subject: RE: Conference call?

Are we all in agreement for the call today to be at 1:30 CT/2:30ET?

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 2:01 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: Conference call?

Hi Jim,

1:30 CT works for me. Talk to you then.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Monday, July 31, 2017 2:36 PM
To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: Conference call?

Any chance we could do it later in the day, say 1:30 or so CT. I have a conflict noon to 1 pm across campus? If needed, I can cancel but would prefer not to.

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, July 31, 2017 12:55 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: Conference call?

Ok, did not hear from folks about today. How about we try for **1:00PM ET / 12:00 CT on Tuesday (tomorrow)?**

We can use the NAS conference line. Please use **1-888-537-7715** and enter pass code **12223052** when prompted.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Rusek, Benjamin
Sent: Friday, July 28, 2017 5:36 PM
To: 'LeDuc, James W.'; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Re: Thank you!

Sounds good, yes happy to talk early next week. Monday or Tuesday works for me at just about any time, but how about 1:00 pm et on Monday?

PS happy to suggest CAMS and CAAS representation if they are technical folks.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Friday, July 28, 2017 5:29 PM
To: Rusek, Benjamin; 'David Franz'
Cc: Shi, Pei yong; Ksiazek, Thomas G.
Subject: RE: RE: RE: Re: Thank you!

Dates look fine to me and I agree on your preliminary list of participants, although should we be extending an invitation to someone from the Chinese Academy of Medical Sciences (Kunming parent) and Chinese Academy of Agricultural Sciences?

Maybe we can have a conference call next week to discuss?

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Friday, July 28, 2017 4:19 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>
Subject: RE: RE: RE: Thank you!
Importance: High

Greetings,

It seems that Zhiming does not have a date preference. How about we designate the week of January 15, 2018 for the meeting?

Re the Chinese scientist delegation, maybe two from each of China's BSL4 labs:?

Wuhan: Zhiming and Zhihong Hu
Kunming: Longding Liu and Yunzhang Hu
Harbin: Zhigao Bu and TBD

We should also invite Gao Fu and Mifang Liang and a mid/high level official from CAS, maybe Yaping Zhang (Vice President, CAS who was not in Wuhan) and/or Qingquan Zhang (who was in Wuhan)?

Also maybe Chengfeng Qin from the Academy of Military Medical Sciences and/or another person to represent the CBSG side?

That's 10-12 people. Am I forgetting anyone?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Sunday, July 23, 2017 9:50 PM
To: Rusek, Benjamin
Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: Re: RE: RE: Thank you!
Importance: High

Deare Benjamin,

Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

Regards

Zhiming

>Greetings Zhiming,

>

>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>

>What do you think about holding a 2-3 day meeting during one of the following weeks:

>

>November 13 (this week may be too early to get the MOU finalized and

>for the Chinese group to obtain their visas, what do you think?)

>December 11 (meeting would have to take place later in the week as Jim

>is traveling the week before) January 8, 2018 January 15, 2018 January

>22, 2018

>

>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>

>Kind regards,

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>-----Original Message-----

>From: Rusek, Benjamin

>Sent: Wednesday, June 28, 2017 4:16 PM

>To: 'Yuan Zhiming'; David Franz

>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>Subject: RE: RE: Re: Thank you!

>

>Greetings Zhiming,

>

>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>

>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>

>Kind regards,

>

>Ben
>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Monday, June 26, 2017 3:19 AM
>To: Rusek, Benjamin; David Franz
>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>Subject: Re: RE: Thank you!
>Importance: High
>
>Dear Rusek,
>
>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosaftey, biosecurity and bioethics among publics, academics, enterprners.
>
>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:
>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
>2) Set up a scientific cooperation working group and identify the main
>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
>
>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
>
>Regards
>
>Yuan Zhiming
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>
>>
>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
>>1. Write a joint white paper outlining issues of mutual concern 2.
>>Work to form an official partnership via a memorandum of understanding
>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>
>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).
>>
>>Kind regards,
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Thursday, May 25, 2017 11:34 PM
>>To: David Franz
>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>zhanghan; chenxw
>>Subject: Re: Re: Thank you!
>>
>>Dear All friends
>>
>>Thanks you for your contributiion for the excellent 2nd China-US
>>workshop on challenges of emerging infectious, laboratory biosafety
>>and global health security. Without your help, we can not have this
>>good communication chance for the scientists and we can not discuss
>>the important public hearth affires with the previlged scientists
>>from China and USA. During the meeting, the scientists, policymakers,
>>advisors from China and USA exchange the great achievements in science
>>and technology in related areas, discussed the new conception and new
>>strategy for disease control, the roles of biosafety, biosecurity and
>>bioethics in infectious disease control, and discussed for the
>>possibility for future cooperation between the Chinese and American,
>>especially the official coopeation between our institute and Gaveston
>>laboratory. I hope this meeting will be a milestone for futher Sino-US
>>cooperation on infectious disease control, and I hope your stay in
>>Wuhan will be the most precious memory i
> n your profession.
>>
>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.
>>
>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>
>>Regards to all.
>>
>>Zhiming
>>
>>
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>>

>>
>>>>
>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>
>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>>
>>>> I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.
>>>
>>>> Best regards, Dave
>>>
>>>> David R. Franz DVM, Ph.D
>>>
>>>> (b)(6)
>>>
>>>
>>>
>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>
>>>> Dear Zhiming,
>>>>
>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>>>
>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
>>>>
>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.
>>>>
>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>

>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>

>>>> With best wishes,

>>>>

>>>> Jim

>>>>

>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6

**Second China-U.S. Workshop on
the Challenges of Emerging Infections, Laboratory Safety and Global Health Security**
Wuhan National Institute of Virology
May 17-19 2017
Wuhan, China

Summary

To address the interconnected life science challenges associated with emerging infectious diseases and further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity, the U.S. National Academy of Sciences (NAS), the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second¹ China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in May 2017 in Wuhan, China. Experts from China and the United States gave presentations on science behind combating emerging infections, high containment laboratories, including commissioning; construction; operation and sustainment; and the importance of conducting innovative life science research while managing the risks. Techniques like gain-of-function, gene editing, and other novel biotechnologies were discussed as was the emergence and public health response to outbreaks of new animal and human diseases of concern to China and the United States. The Chinese and American approaches to biosafety and biosecurity in laboratories, life-science ethics, laboratory leadership and organizational cultures were addressed to advance a better understanding of these issues from the perspective of experts in each country and to seek agreement on best practices in these areas. A large group of graduate students was in attendance and took part in the robust discussions which followed each presentation. Subsequent meetings will be held in the United States in 2017 and in China in 2018.

The workshop aimed to build bridges between Chinese and American scientists and use the eminence and national leadership of the convening CAS and NAS organizations to improve scientific and technical cooperation in areas of mutual concern to China and the United States. Although some presentations focused on specific research in the areas of gain of function, gene editing, targeting and delivery and other novel biotechnology, public health response to outbreaks, emerging infectious diseases, and global health security, each speaker considered issues associated with biological safety; laboratory management and maintenance; staff education and training; the efficient and sustainable operation of animal, plant, and public

¹ In September 2015, a group of experts and representatives from the NAS, CAS, Chinese Center for Disease Control and Prevention (CCDC), and other Chinese institutions held the first *Workshop on Challenges of Emerging Infections, Laboratory Safety, and Global Health Security* at the CAS Institute of Microbiology in Beijing. The workshop allowed American and Chinese experts to discuss human and animal infectious-disease challenges that transcend national borders and impact both countries. Participants at the workshop also discussed guidelines for the use of CRISPR Cas9 and other gene editing technology that led to a summit on human gene editing co-convened in the United States by NAS, CAS, and the U.K. Royal Society. The co-chairs of the workshop agreed to continue to share information on regulations, to continue dialogue on biosafety and biosecurity best practices, especially at high containment laboratories, and to explore the possibility for more U.S.-Chinese collaboration on issues related to global public health. The workshop concluded with the experts identifying promising areas for collaborative partnerships between Chinese and American scientists and institutions and an agreement to hold a second meeting in Wuhan, China.

health research laboratories; and clinical applications for improving global health security when they presented their findings and during the public question and answer period following each presentation. Of particular importance were discussions related to efforts by both countries to achieve the right balance among safety, security, regulation, and scientific progress in conducting and advancing life-science research. After the SARS outbreak of 2002 the Chinese scientific community focused on the linkage between disease and security, specifically the insecurity that a naturally occurring disease outbreak could create. The United States continues to struggle to regulate research using new techniques to edit genes and, after several high profile accidents, is considering better ways to address safety and security in high-containment laboratories without hindering the important science that takes place inside.

Participants identified three broad areas for further collaboration between the United States and China: (1) Issues related to emerging infections, understanding disease reservoirs, disease emergence, disease surveillance, natural versus human origin of disease, data sharing, and building capacity for research during public health emergencies. (2) Anticipating risk in the life sciences and medicine related to biotechnology innovation, such as identifying certain experiments that are too risky to conduct. (3) Governance of science to reduce risk, such as doing research in centralized laboratories versus distributed labs, managing research costs, learning from past technical and bureaucratic mistakes, best ways to diminish risk without hindering science and addressing technical risk for the laboratory versus social risk for the community.

A unique feature of the workshop was that it brought together the leadership of four biological safety level four (BSL-4) laboratories: The Galveston National Laboratory (GNL) in the United States, the Wuhan Institute of Virology (CAS) the Harbin Veterinary Research Institute (Chinese Academy of Agricultural Sciences), and the Kunming Institute of Medical Biology (Chinese Academy of Medical Sciences). After extensive planning, commissioning, construction, testing, and international collaboration, all three of the Chinese laboratories are close to opening their BSL-4 laboratory spaces for research. Sharing practical advice and experiences and creating ties between institutions that operate these facilities is crucial to prevent the misuse or accidental release of dangerous pathogens. The leadership of the GNL has years of experience operating a high containment laboratory, including recent experience working with authorities to respond to and mitigate the consequences of an Ebola case in the United States. The meeting laid the foundations for future exchanges, both scientific and practical, between the leaders and researchers at these laboratories.

To educate political leaders and others about the topics discussed during the workshop, the organizers agreed to write a joint white paper outlining issues of mutual concern and to work to form an official partnership via a memorandum of understanding between the Galveston National Laboratory and the Wuhan Institute of Virology (and possibly the other Chinese BSL-4 laboratories) so that these labs can more easily work together on short-term and long-term joint projects. The experts identified several general areas for promising future exchanges including creating joint BSL-4 research projects that are beneficial for both the United States and China, better ways to share samples, strains, and strain collections between laboratories,

and improving and sharing best practices for training laboratory staff, particularly staff that work at the BSL-4 level. The organizers plan to hold further face-to-face meetings in the United States at the Galveston National Laboratory late in 2017 and in China at the Kunming Institute of Medical Biology in 2018. Topics for the next workshop at the Galveston National Laboratory will likely center around specific high biocontainment “operational” issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting “well-documented” studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

.....

Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Sessions and Presentations

Gain of function research, gene editing, targeting and delivery and other novel biotechnology

- Genome engineering and other life-sciences technologies: challenges and opportunities
- Construction and rescue of a functional synthetic baculovirus
- High-throughput functional genomics: coding, non-coding, and beyond

Public health response to outbreaks and issues

- Antibody dependent enhancement in Dengue and Zika virus infections
- Engineered human antibody constant domain as a candidate against Ebola virus
- Antiviral drug discovery and development
- Improving the laboratory’s role in emergency health response: communications during a crisis

Emerging infectious diseases and global health security

- Biosafety, biorisk, and biosecurity – natural spill-over: Ebola
- A One Health Strategy for responding to emerging infectious diseases
- Pathogenicity analysis of bat SARS-like coronavirus
- Severe fever with thrombocytopenia syndrome (SFTS) in China from first discovery
- Coronaviruses: Global threats to humans and animals
- Existing weapons against the emerging Zika virus
- Avian influenza at the animal-human interface: global challenges for scientific contributions to control
- Non-structural Protein 1: A Key for Flavivirus transfer from host to vector

- Rapid response to Zika virus emergence: diagnostics and vaccine development

High-level biosafety laboratory: construction, commissioning, and sustainment

- Practical aspects of maximum biocontainment laboratory operations (in session 1)
- Brief and status quo on accreditation for biosafety laboratories in China
- Biocontainment operations and maintenance at UTMB and training for other containment facility operators
- National high containment facilities for animal diseases control and prevention in Harbin, China
- Kunming National Primate Research Center of High-level Biosafety: Future Perspective

Biosafety, biosecurity and bioethics

- Biosafety and bioethics considerations for emerging disease control research
- Regulatory issues affecting the operation of a functional high containment lab: Obtaining, shipping, maintaining, and exchanging high hazard pathogens in today's regulatory environment. Does the science matter?
- Leadership, responsibility and progress: the value of healthy organizational cultures

The role of CAS and NAS in enhancing cooperation between the U.S. and China on emerging infections, laboratory safety and global health security

Points of contact:

Zhiming Yuan, Ph.D.

Director, Wuhan Institute of Virology, CAS
yzm@wh.iov.cn

David R. Franz, DVM, Ph.D.

Former Commander, USAMRIID
davidrf Franz@gmail.com

James W. Le Duc, Ph.D.

Director, Galveston National Laboratory
jwleduc@UTMB.EDU

Benjamin J. Rusek, Senior Program Officer

U.S. National Academy of Sciences
brusek@nas.edu 001.202.839.0075

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Friday, August 4, 2017 6:33 PM
To: 'Yuan Zhiming'
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
Subject: RE: RE: RE: Thank you!

Greetings Zhiming,

The U.S. groups spoke earlier this week and agreed that the week of January 15, 2018 would be the best time to hold the Galveston National Laboratory (GNL) meeting.

Re the Chinese delegation, maybe you could invite about two senior experts from each of China's BSL-4 labs? Wuhan Institute of Virology: yourself and Xinwen Chen (but also maybe Zhihong Hu?) Kunming Institute of Medical Biology: Longding Liu and Yunzhang Hu Harbin Veterinary Research Institute: Zhigao Bu and another senior person from their lab

Along with maybe Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences?

We thought that Gao Fu, Mifang Liang and Yigong Shi (vice president of Tsinghua University, CAS member and foreign associate of NAS) would add value to the meeting as would an official from CAS, maybe Yaping Zhang (Vice President, CAS) or Qingquan Zhang?

NAS could support meals, local hotel accommodations and ground transportation from the Houston Airport to Galveston for a Chinese group of this size.

As we said in the summary of the May Wuhan meeting, topics for the next GNL meeting might center around specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

After you decide on the delegation NAS will provide invitation letters so the delegation members can start the visa process.

We are happy to discuss any of these ideas further. Thanks again for your attention and support.

PS I noticed that you posted the long and short summaries of the May meeting on the NIV website, if these are the final versions could you remove the word "draft" and the date in the document headers?

Kind regard,

Benjamin Rusek
The U.S. National Academy of Sciences

1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

Sent: Sunday, July 23, 2017 9:50 PM

To: Rusek, Benjamin

Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

Subject: Re: RE: RE: Re: Thank you!

Importance: High

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There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

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Zhiming

>Greetings Zhiming,

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>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

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>November 13 (this week may be too early to get the MOU finalized and

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>December 11 (meeting would have to take place later in the week as Jim

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>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

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>Kind regards,

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>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

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>From: Rusek, Benjamin

>Sent: Wednesday, June 28, 2017 4:16 PM

>To: 'Yuan Zhiming'; David Franz

>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
 >Subject: RE: RE: Re: Thank you!
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 >Greetings Zhiming,
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 >Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
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 >We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
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 >Benjamin Rusek
 >The U.S. National Academy of Sciences
 >1-202-334-3975
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 >From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
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 >Subject: Re: RE: Re: Thank you!
 >Importance: High
 >
 >Dear Rusek,
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>>The U.S. National Academy of Sciences
>>1-202-334-3975

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>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Thursday, May 25, 2017 11:34 PM
>>To: David Franz
>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>zhanghan; chenxw
>>Subject: Re: Re: Thank you!

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>>>> (m) b6/b7C

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Sent: Friday, August 4, 2017 6:33 PM
To: 'Yuan Zhiming'
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
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Along with maybe Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences?

We thought that Gao Fu, Mifang Liang and Yigong Shi (vice president of Tsinghua University, CAS member and foreign associate of NAS) would add value to the meeting as would an official from CAS, maybe Yaping Zhang (Vice President, CAS) or Qingquan Zhang?

NAS could support meals, local hotel accommodations and ground transportation from the Houston Airport to Galveston for a Chinese group of this size.

As we said in the summary of the May Wuhan meeting, topics for the next GNL meeting might center around specific high biocontainment "operational" issues such as:

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- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

After you decide on the delegation NAS will provide invitation letters so the delegation members can start the visa process.

We are happy to discuss any of these ideas further. Thanks again for your attention and support.

PS I noticed that you posted the long and short summaries of the May meeting on the NIV website, if these are the final versions could you remove the word "draft" and the date in the document headers?

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Subject: Re: RE: RE: Re: Thank you!

Importance: High

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>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>

>>Regards to all.

>>

>>Zhiming

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

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>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

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>>>Best regards, Dave

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>>>David R. Franz DVM, Ph.D

>>>

>>>(b)(6)

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>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>

>>>> Dear Zhiming,

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>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that

attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

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>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

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>>>> With best wishes,

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>>>> Jim

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>>>> James W. Le Duc, Ph.D.

>>>> Director

>>>> Galveston National Laboratory

>>>> University of Texas Medical Branch

>>>> Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) (b)(6)

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Friday, August 4, 2017 6:33 PM
To: 'Yuan Zhiming'
Cc: Shi, Pei yong; Ksiazek, Thomas G.; LeDuc, James W.; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: RE: RE: RE: Re: Thank you!

Importance: High

Greetings Zhiming,

The U.S. groups spoke earlier this week and agreed that the week of January 15, 2018 would be the best time to hold the Galveston National Laboratory (GNL) meeting.

Re the Chinese delegation, maybe you could invite about two senior experts from each of China's BSL-4 labs?
Wuhan Institute of Virology: yourself and Xinwen Chen (but also maybe Zhihong Hu?) Kunming Institute of Medical Biology: Longding Liu and Yunzhang Hu Harbin Veterinary Research Institute: Zhigao Bu and another senior person from their lab

Along with maybe Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences?

We thought that Gao Fu, Mifang Liang and Yigong Shi (vice president of Tsinghua University, CAS member and foreign associate of NAS) would add value to the meeting as would an official from CAS, maybe Yaping Zhang (Vice President, CAS) or Qingquan Zhang?

NAS could support meals, local hotel accommodations and ground transportation from the Houston Airport to Galveston for a Chinese group of this size.

As we said in the summary of the May Wuhan meeting, topics for the next GNL meeting might center around specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

After you decide on the delegation NAS will provide invitation letters so the delegation members can start the visa process.

We are happy to discuss any of these ideas further. Thanks again for your attention and support.

PS I noticed that you posted the long and short summaries of the May meeting on the NIV website, if these are the final versions could you remove the word "draft" and the date in the document headers?

Kind regard,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Sunday, July 23, 2017 9:50 PM
To: Rusek, Benjamin
Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: Re: RE: RE: RE: Thank you!
Importance: High

Deare Benjamin,

Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

Regards

Zhiming

>Greetings Zhiming,

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>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

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>What do you think about holding a 2-3 day meeting during one of the following weeks:

>

>November 13 (this week may be too early to get the MOU finalized and

>for the Chinese group to obtain their visas, what do you think?)

>December 11 (meeting would have to take place later in the week as Jim

>is traveling the week before) January 8, 2018 January 15, 2018 January

>22, 2018

>

>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>

>Kind regards,

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>-----Original Message-----

>From: Rusek, Benjamin

>Sent: Wednesday, June 28, 2017 4:16 PM
 >To: 'Yuan Zhiming'; David Franz
 >Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
 >Subject: RE: RE: Re: Thank you!
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 >Greetings Zhiming,
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 >Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
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 >We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
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 >Kind regards,
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 >Ben
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 >Benjamin Rusek
 >The U.S. National Academy of Sciences
 >1-202-334-3975
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 >From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
 >Sent: Monday, June 26, 2017 3:19 AM
 >To: Rusek, Benjamin; David Franz
 >Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
 >Subject: Re: RE: Re: Thank you!
 >Importance: High
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 >1) Sign a memo between the UTMB and WIV (we are preparing the memo)
 >2) Set up a scientific cooperation working group and identify the main
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 >3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
 >4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
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 >Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
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 >Regards
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>Yuan Zhiming

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>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>1. Write a joint white paper outlining issues of mutual concern 2.

>>Work to form an official partnership via a memorandum of understanding

>>between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>

>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>

>>Kind regards,

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>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

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>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Thursday, May 25, 2017 11:34 PM

>>To: David Franz

>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>zhanghan; chenxw

>>Subject: Re: Re: Thank you!

>>

>>Dear All friends

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>>Thanks you for your contributiion for the excellent 2nd China-US

>>workshop on challenges of emerging infectious, laboratory biosafety

>>and global health security. Without your help, we can not have this

>>good communication chance for the scientists and we can not discuss

>>the important public hearth affires with the previligid scientists

>>from China and USA. During the meeting, the scientists, policymakers,

>>advisors from China and USA exchange the great achievements in science

>>and technology in related areas, discussed the new conception and new

>>strategy for disease control, the roles of biosafety, biosecurity and

>>bioethics in infectious disease control, and discussed for the

>>possibility for future cooperation between the Chinese and American,

>>especially the official coopeation between our institute and Gaveston

>>laboratory. I hope this meeting will be a milestone for futher Sino-US

>>cooperation on infectious disease control, and I hope your stay in

>>Wuhan will be the most precious memory i

> n your profession.

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>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and the our institute, quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

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>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

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>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

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>>>(b)(6)

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attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

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>>>> (t) 409-266-6500

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>>>> (m) (b)(6)

From: Yuan Zhiming <yzm@wh.iov.cn>
Sent: Wednesday, August 9, 2017 10:25 PM
To: Rusek, Benjamin
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
Subject: Re: RE: RE: RE: Thank you!

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

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>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
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>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
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>>>Sent: Thursday, May 25, 2017 11:34 PM

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>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

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>>>Subject: Re: Re: Thank you!

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>>>>>(b)(6)
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>>>>> Jim

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>>>>> James W. Le Duc, Ph.D.

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>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

From: LeDuc, James W.
Sent: Thursday, August 10, 2017 9:26 AM
To: Rusek, Benjamin
Subject: Re: Thank you!

Thanks Ben. Progress.

Sent from my iPhone

> On Aug 4, 2017, at 5:33 PM, Rusek, Benjamin <BRusek@nas.edu> wrote:
>
> Greetings Zhiming,
>
> The U.S. groups spoke earlier this week and agreed that the week of January 15, 2018 would be the best time to hold the Galveston National Laboratory (GNL) meeting.
>
> Re the Chinese delegation, maybe you could invite about two senior experts from each of China's BSL-4 labs?
> Wuhan Institute of Virology: yourself and Xinwen Chen (but also maybe
> Zhihong Hu?) Kunming Institute of Medical Biology: Longding Liu and
> Yunzhang Hu Harbin Veterinary Research Institute: Zhigao Bu and
> another senior person from their lab
>
> Along with maybe Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences?
>
> We thought that Gao Fu, Mifang Liang and Yigong Shi (vice president of Tsinghua University, CAS member and foreign associate of NAS) would add value to the meeting as would an official from CAS, maybe Yaping Zhang (Vice President, CAS) or Qingquan Zhang?
>
> NAS could support meals, local hotel accommodations and ground transportation from the Houston Airport to Galveston for a Chinese group of this size.
>
> As we said in the summary of the May Wuhan meeting, topics for the next GNL meeting might center around specific high biocontainment "operational" issues such as:
> -An overall strategy and creating centers for effective high
> containment laboratory staff training -Creating and maintaining
> clinical care facilities in BSL-4 space and training clinical staff
> -Conducting "well-documented" studies under BSL-4 conditions including
> practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
> -Conducting vector studies to identify animal virus reservoirs and
> combat emerging infections caused by viral agents requiring
> high-containment facilities
>
> After you decide on the delegation NAS will provide invitation letters so the delegation members can start the visa process.
>
> We are happy to discuss any of these ideas further. Thanks again for your attention and support.

>

> PS I noticed that you posted the long and short summaries of the May meeting on the NIV website, if these are the final versions could you remove the word "draft" and the date in the document headers?

>

> Kind regard,

>

> Benjamin Rusek

> The U.S. National Academy of Sciences

> 1-202-334-3975

>

> -----Original Message-----

> From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

> Sent: Sunday, July 23, 2017 9:50 PM

> To: Rusek, Benjamin

> Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

> Subject: Re: RE: RE: Re: Thank you!

> Importance: High

>

> Deare Benjamin,

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> Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

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>

> Regards

>

> Zhiming

>

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>

>> Greetings Zhiming,

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>> For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>>

>> What do you think about holding a 2-3 day meeting during one of the following weeks:

>>

>> November 13 (this week may be too early to get the MOU finalized and

>> for the Chinese group to obtain their visas, what do you think?)

>> December 11 (meeting would have to take place later in the week as

>> Jim is traveling the week before) January 8, 2018 January 15, 2018

>> January 22, 2018

>>

>> NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>>

>> Kind regards,

>>

>> Benjamin Rusek
>> The U.S. National Academy of Sciences
>> 1-202-334-3975
>>
>> -----Original Message-----
>> From: Rusek, Benjamin
>> Sent: Wednesday, June 28, 2017 4:16 PM
>> To: 'Yuan Zhiming'; David Franz
>> Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>> Subject: RE: RE: Re: Thank you!
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>> Greetings Zhiming,
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>> Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
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>> We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
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>> The U.S. National Academy of Sciences
>> 1-202-334-3975
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>> From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>> Sent: Monday, June 26, 2017 3:19 AM
>> To: Rusek, Benjamin; David Franz
>> Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>> Subject: Re: RE: Re: Thank you!
>> Importance: High
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>> Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:
>> 1) Sign a memo between the UTMB and WIV (we are preparing the memo)
>> 2) Set up a scientific cooperation working group and identify the
>> main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
>> 3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.

>> 4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
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>> Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
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>> Yuan Zhiming
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>>> Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
>>> 1. Write a joint white paper outlining issues of mutual concern 2.
>>> Work to form an official partnership via a memorandum of
>>> understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
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>>> I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).
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>>> Benjamin Rusek
>>> The U.S. National Academy of Sciences
>>> 1-202-334-3975
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>>> -----Original Message-----
>>> From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>> Sent: Thursday, May 25, 2017 11:34 PM
>>> To: David Franz
>>> Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>> zhanghan; chenxw
>>> Subject: Re: Re: Thank you!
>>>
>>> Dear All friends
>>>
>>> Thanks you for your contributiion for the excellent 2nd China-US
>>> workshop on challenges of emerging infectious, laboratory biosafety
>>> and global health security. Without your help, we can not have this
>>> good communication chance for the scientists and we can not discuss
>>> the important public hearth affires with the previlaged scientists
>>> from China and USA. During the meeting, the scientists,
>>> policymakers, advisors from China and USA exchange the great
>>> achievements in science and technology in related areas, discussed
>>> the new conception and new strategy for disease control, the roles

>>> of biosafety, biosecurity and bioethics in infectious disease
>>> control, and discussed for the possibility for future cooperation
>>> between the Chinese and American, especially the official cooperation
>>> between our institute and Galveston laboratory. I hope this meeting
>>> will be a milestone for further Sino-US cooperation on infectious
>>> disease control, and I hope your stay in Wuhan will be the most
>>> precious memory in
>> in your profession.

>>>
>>> Yes, we need to have a meeting report, indicating our activities, concerns and suggestion for further action for both
academies, letting the top leaders understand the effectiveness, practicability and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and our institute,
guaranteeing, ensuring the good start has a productive result. Hopefully we can sign this kind of memorandum in next
meeting in USA.

>>>
>>> We look forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>
>>> Regards to all.

>>>
>>> Zhiming

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>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>
>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.

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>>>> I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe
each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and
particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our
future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to
continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal
meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have
planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.

>>>>
>>>> Best regards, Dave

>>>>
>>>> David R. Franz DVM, Ph.D

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>>>> (b)(6)

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>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

>

>

>

From: LeDuc, James W.
Sent: Wednesday, August 16, 2017 11:17 AM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>

Subject: Re: RE: RE: RE: Re: Thank you!

Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for conbating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

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>The U.S. National Academy of Sciences
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>>>>>

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>>>>>

>>>>>David R. Franz DVM, Ph.D

>>>>>

>>>>>(b)(6)

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>>>>> James W. Le Duc, Ph.D.

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>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

From: Shi, Pei yong <peshi@UTMB.EDU>
Sent: Friday, August 18, 2017 5:07 PM
To: Weaver;Scott
Subject: Add Rongjuan Pei to mosquito protocols (Zika and dengue viruses)

Hi Scott,

I'm following up on our yesterday's discussion to add Dr. Rongjuan Pei to your mosquito protocols on Zika and dengue. Rongjuan is a visiting scientist and Associate Professor from Wuhan Institute of Virology, Chinese Academy of Sciences. She will work at UTMB for a year.

Please note that add/delete form is now submitted through the link:
<https://www.utmb.edu/ehs/biosafety/home/services/NOU>

First name: Rongjuan

Last Name: Pei

Employee ID: (b)(6)

Experience: Dr. Rongjuan Pei has ten years of experience in virus research, particularly in hepatitis C virus. She has extensive expertise in molecular virology and innate immunity. However, she has no previous experience in working with mosquitoes.

Please let me know if you need more information. Thanks!

Have a great weekend!

Pei-Yong

From: Lawal, Adeola [adlawal@UTMB.EDU]
Sent: 8/21/2017 1:05:23 PM
To: 'zhanghan@wh.iov.cn' [zhanghan@wh.iov.cn]
CC: LeDuc, James W. [jwleduc@UTMB.EDU]
Subject: RE: RE: Re: Re: FW: Collaborations on training and research
Attachments: 20170802-MoU between WIV and UTMB(revised).doc
Importance: High

Hello,

Thank you for accepting our suggested edits. I have attached a clean version of the agreement above. Please let us know if we can begin circulating the attached for signatures.

Best wishes,

Ade Lawal, JD
Associate Legal Officer
Office of Technology Transfer

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Wednesday, August 02, 2017 3:24 AM
To: LeDuc, James W.
Cc: Lawal, Adeola
Subject: Re: RE: Re: Re: FW: Collaborations on training and research

Dear Prof. LeDuc,

Hope this letter finds you well.

For your information, your suggested revision on the MoU are fine with us, and we add some other edits. Please see attached and let us know if there are any questions.

By the way, Dr. Han Xia is (b)(6)

With best wishes,

Han Zhang

-----原始邮件-----

发件人: "LeDuc, James W." <jwleduc@UTMB.EDU>
发送时间: 2017年7月17日 星期一
收件人: "张晗" <zhanghan@wh.iov.cn>
抄送:
主题: RE: RE: Re: FW: Collaborations on training and research

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Attached is the MOU with suggested edits from our legal office. Please let me know if you do not receive the attachment and we'll send again. Please feel free to comment or question some of the edits and we will work to identify appropriate replacement language.

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Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

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Subject: Fw: Re: Re: FW: Collaborations on training and research

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> 发件人: "Yuan Zhiming" <yzm@wh.iov.cn>

> 发送时间: 2017年7月10日 星期一

> 收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "夏菡" <hanxia@wh.iov.cn>

> 抄

送: "Lawal, Adeola" <adlawal@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, zhanghan <zhanghan@wh.iov.cn>

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> >Sent: Thursday, July 06, 2017 3:36 AM

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> >Subject: 答复: Collaborations on training and research
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> >
> >Longding
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> >发件人: LeDuc, James W. <jwleduc@UTMB.EDU<<mailto:jwleduc@UTMB.EDU>>>
> >发送时间: 2017年7月5日 15:19
> >收件人: Liu Longding; Hu Yunzhang (b)(6)
> >抄
送: Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu<<mailto:BRusek@nas.edu>>); Dave Franz (davidrfranz@gmail.com<<mailto:davidrfranz@gmail.com>>)
> >主题: RE: Collaborations on training and research
> >
> >
> >Dear Longding and Yunzhang,
> >
> >
> >
> >You will recall that one of the action items from our recent meeting in Wuhan was to establish more formal agreements between our research organizations to facilitate greater collaborations and personnel exchanges. The goal was to have these agreements in place by the time of our next joint meeting to be held here at the GNL later this year or early in 2018. Towards that end, the Wuhan Institute of Virology has drafted the attached MOU that is now being reviewed by my colleagues here at UTMB. We hope to have a final document ready for signing in the very near future. I'm wondering if a similar agreement might be established between your Institute and UTMB? Could you please review the attached draft MOU and see if it meets your institutional requirements. If it does, perhaps we could move forward with the goal of having an agreed upon document that can be announced at our next meeting.
> >
> >

> >
> >Thank you very much. With best wishes,
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> >
> >Jim
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> >
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> >
> >Director
> >
> >Galveston National Laboratory
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> >University of Texas Medical Branch
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> >(m) (b)(6)
> >
> >
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> >



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as “**WIV**”)

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as “**UTMB**”)

WIV and UTMB hereinafter also individually referred to as a “**Party**” or collectively as the “**Parties**”

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as “**Memorandum**”) their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other’s rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

[PAGE]

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) Notices

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

Dr. James W. LeDuc

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail: jwleduc@UTMB.EDU

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.

ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.

iii) Once WIV and UTMB are satisfied that a given discovery (“Invention”) arising from a joint project under the MoU is worth protecting by a patent, the Parties will negotiate in good faith to establish the terms of an “Inter-Institutional Agreement” or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties’ agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party’s assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.

iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

v) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

- a. This MoU shall be identified only as the current wish and intent of the Parties regarding the potential for developing a program agreement executed between the parties.
- b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.
- c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.
- d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.
- e. To advice either party on available areas of collaboration and advice the Chief Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.

ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.

ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.

iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.

ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

i) Either party may terminate the MoU if the other party is in breach of terms and conditions of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months written notice to the other Party

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. EXPORT CONTROL

The parties acknowledge that this Agreement and the performance thereof are subject to compliance with any and all applicable Chinese and United States laws, regulations, or orders, including those that may relate to the export of technical data, and both Parties agree to comply with all such laws, regulations and orders, The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed Export Controlled, received under this Agreement to any countries for which the United States or Chinese government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU

impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name: Carolee A. King, JD

Title: Senior VP and General Counsel

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Prof. Zhiming Yuan

Signature of UTMB Investigator (Coordinator)

Dr. James W. LeDuc

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> >发件人: LeDuc, James W. <jwleduc@UTMB.EDU<<mailto:jwleduc@UTMB.EDU>>>
> >发送时间: 2017年7月5日 15:19
> >收件人: Liu Longding; Hu Yunzhang (b)(6)
> >抄
送: Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu<<mailto:BRusek@nas.edu>>); Dave Franz (davidrfranz@gmail.com<<mailto:davidrfranz@gmail.com>>)
> >主题: RE: Collaborations on training and research
> >
> >
> >Dear Longding and Yunzhang,
> >
> >
> >
> >You will recall that one of the action items from our recent meeting in Wuhan was to establish more formal agreements between our research organizations to facilitate greater collaborations and personnel exchanges. The goal was to have these agreements in place by the time of our next joint meeting to be held here at the GNL later this year or early in 2018. Towards that end, the Wuhan Institute of Virology has drafted the attached MOU that is now being reviewed by my colleagues here at UTMB. We hope to have a final document ready for signing in the very near future. I'm wondering if a similar agreement might be established between your Institute and UTMB? Could you please review the attached draft MOU and see if it meets your institutional requirements. If it does, perhaps we could move forward with the goal of having an agreed upon document that can be announced at our next meeting.
> >
> >

> >
> >Thank you very much. With best wishes,
> >
> >
> >
> >Jim
> >
> >
> >
> >James W. Le Duc, Ph.D.
> >
> >Director
> >
> >Galveston National Laboratory
> >
> >University of Texas Medical Branch
> >
> >Galveston, TX 77555-0610
> >
> >(t) 409-266-6500
> >
> >(f) 409-266-6810
> >
> >(m) (b)(6)
> >
> >
> >
> >



MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as “**WIV**”)

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as “**UTMB**”)

WIV and UTMB hereinafter also individually referred to as a “**Party**” or collectively as the “**Parties**”

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as “**Memorandum**”) their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other’s rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

[PAGE]

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) Notices

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

Dr. James W. LeDuc

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail: jwleduc@UTMB.EDU

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.

ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.

iii) Once WIV and UTMB are satisfied that a given discovery (“Invention”) arising from a joint project under the MoU is worth protecting by a patent, the Parties will negotiate in good faith to establish the terms of an “Inter-Institutional Agreement” or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties’ agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party’s assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.

iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

v) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

- a. This MoU shall be identified only as the current wish and intent of the Parties regarding the potential for developing a program agreement executed between the parties.
- b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.
- c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.
- d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.
- e. To advice either party on available areas of collaboration and advice the Chief Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.

ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.

ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.

iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.

ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

i) Either party may terminate the MoU if the other party is in breach of terms and conditions of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months written notice to the other Party

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, the party at fault shall meet any legal and or other expenses that the other institution may incur.

XIV. EXPORT CONTROL

The parties acknowledge that this Agreement and the performance thereof are subject to compliance with any and all applicable Chinese and United States laws, regulations, or orders, including those that may relate to the export of technical data, and both Parties agree to comply with all such laws, regulations and orders, The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed Export Controlled, received under this Agreement to any countries for which the United States or Chinese government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU

impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday
of2017.

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By:_____

Name:

Title:

Date:

Place:

By:_____

Name: Carolee A. King, JD

Title: Senior VP and General Counsel

Date:

Place:

Read and understood:

Read and understood:

Signature of WIV Coordinator

Prof. Zhiming Yuan

Signature of UTMB Investigator (Coordinator)

Dr. James W. LeDuc

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W.; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>
Subject: Re: RE: RE: RE: Re: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.

- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Thank you!
>Importance: High
>
>Deare Benjamin,
>
>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>
>Regards
>
>Zhiming
>

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>
>
>
>
>>Greetings Zhiming,
>>
>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>
>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>
>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim
>>is traveling the week before) January 8, 2018 January 15, 2018 January
>>22, 2018
>>
>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from
you.
>>
>>Kind regards,
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Rusek, Benjamin
>>Sent: Wednesday, June 28, 2017 4:16 PM
>>To: 'Yuan Zhiming'; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: RE: RE: Re: Thank you!
>>
>>Greetings Zhiming,
>>
>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post
both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS
representative in Beijing about the Texas meeting?
>>
>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
>>
>>Kind regards,
>>
>>Ben
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Monday, June 26, 2017 3:19 AM

>>To: Rusek, Benjamin; David Franz
 >>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
 >>Subject: Re: RE: Re: Thank you!
 >>Importance: High
 >>
 >>Dear Rusek,
 >>
 >>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosaftey, biosecurity and bioethics among publics, academics, enterprners.
 >>
 >>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:
 >>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
 >>2) Set up a scientific cooperation working group and identify the main
 >>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
 >>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
 >>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
 >>
 >>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
 >>
 >>Regards
 >>
 >>Yuan Zhiming
 >>
 >>
 >>
 >>
 >>
 >>
 >>
 >>>
 >>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
 >>>1. Write a joint white paper outlining issues of mutual concern 2.
 >>>Work to form an official partnership via a memorandum of
 >>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
 >>>
 >>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).
 >>>
 >>>Kind regards,
 >>>
 >>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

>>>

>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

>>>

>>>Dear All friends

>>>

>>>Thanks you for your contributiion for the excellent 2nd China-US

>>>workshop on challenges of emerging infectious, laboratory biosafety

>>>and global health security. Without your help, we can not have this

>>>good communication chance for the scientists and we can not discuss

>>>the important public hearth affires with the previligid scientists

>>>from China and USA. During the meeting, the scientists, policymakers,

>>>advisors from China and USA exchange the great achievements in

>>>science and technology in related areas, discussed the new conception

>>>and new strategy for disease control, the roles of biosafety,

>>>biosecurity and bioethics in infectious disease control, and

>>>discussed for the possibility for future cooperation between the

>>>Chinese and American, especially the official coopeation between our

>>>institute and Gaveston laboratory. I hope this meeting will be a

>>>milestone for futher Sino-US cooperation on infectious disease

>>>control, and I hope your stay in Wuhan will be the most precious

>>>memory i

>> n your profession.

>>>

>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both

academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we

need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,

quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

>>>

>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>

>>>Regards to all.

>>>

>>>Zhiming

>>>

>>>

>>>

>>>

>>>

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>

>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>

>>>>Best regards, Dave

>>>>

>>>>David R. Franz DVM, Ph.D

>>>>

>>>(b)(6)

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>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>> Jim
>>>>
>>>> James W. Le Duc, Ph.D.
>>>> Director
>>>> Galveston National Laboratory
>>>> University of Texas Medical Branch Galveston, TX 77555-0610
>>>> (t) 409-266-6500
>>>> (f) 409-266-6810
>>>> (m) (b)(6)

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Thursday, August 24, 2017 8:00 AM
To: 'Yuan Zhiming'
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
Subject: RE: RE: RE: RE: Thank you!

Hi Zhiming,

Sorry for the delayed response. Your proposal sounds great. We will prepare invitation letters for the individual you list so each one can apply for official approval and their visa individually. We will send you the letter first to make sure it is ok. The topics look very good as well.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 11:25 PM
To: Rusek, Benjamin
Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
Subject: Re: RE: RE: RE: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the official approval and visa individually.

As to the objective of the next GNL meeting, it is to guarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

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>The U.S. National Academy of Sciences
>1-202-334-3975
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>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Thank you!
>Importance: High

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>Deare Benjamin,

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>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

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>Regards

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>Zhiming

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>>Greetings Zhiming,
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>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
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>>What do you think about holding a 2-3 day meeting during one of the following weeks:
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>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim
>>is traveling the week before) January 8, 2018 January 15, 2018 January
>>22, 2018
>>
>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from
you.
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>>Kind regards,
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>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
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>>-----Original Message-----
>>From: Rusek, Benjamin
>>Sent: Wednesday, June 28, 2017 4:16 PM
>>To: 'Yuan Zhiming'; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: RE: RE: Re: Thank you!
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>>Greetings Zhiming,
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>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post
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>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
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>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Monday, June 26, 2017 3:19 AM
>>To: Rusek, Benjamin; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: Re: RE: Re: Thank you!
>>Importance: High
>>

>>Dear Rusek,

>>

>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.

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>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>2) Set up a scientific cooperation working group and identify the main

>>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.

>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>

>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>

>>Regards

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>>Yuan Zhiming

>>

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>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>

>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>

>>>Kind regards,

>>>

>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

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>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

>>>

>>>Dear All friends

>>>

>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previlaged scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official coopeation between our
>>>institute and Gaveston laboratory. I hope this meeting will be a
>>>milestone for futher Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
>>>memory i

>> n your profession.

>>>

>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.

>>>

>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>

>>>Regards to all.

>>>

>>>Zhiming

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>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.

>>>>

>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe
each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and
particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our

future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>

>>>>Best regards, Dave

>>>>

>>>>David R. Franz DVM, Ph.D

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>>>>(b)(6)

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>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

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>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>> (t) 409-266-6500

>>>> (f) 409-266-6810

>>>> (m) b6
b7C

From: Shi, Pei yong
Sent: Thursday, August 24, 2017 8:02 AM
To: Rusek, Benjamin; LeDuc, James W.
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Thanks, Ben

I will contact George and Yigong and report back to you and the team soon.

Best,
Pei-Yong

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

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From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
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I have some suggestion for the invited Chinese participants:

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I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

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>>Sent: Wednesday, June 28, 2017 4:16 PM

>>To: 'Yuan Zhiming'; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: RE: RE: Re: Thank you!

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>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

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>>>Benjamin Rusek

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>>>1-202-334-3975

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>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

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>>>biosecurity and bioethics in infectious disease control, and

>>>discussed for the possibility for future cooperation between the

>>>Chinese and American, especially the official coopeation between our

>>>institute and Gaveston laboratory. I hope this meeting will be a

>>>milestone for futher Sino-US cooperation on infectious disease

>>>control, and I hope your stay in Wuhan will be the most precious

>>>memory i

>> n your profession.

>>>

>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and the our institute, quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

>>>

>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>
>>>Regards to all.
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>
>>>>>
>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>>
>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>>>>
>>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.
>>>>>
>>>>>Best regards, Dave
>>>>>
>>>>>David R. Franz DVM, Ph.D
>>>>>
>>>>>(b)(6)
>>>>>
>>>>>
>>>>>
>>>>>
>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>>
>>>>> Dear Zhiming,
>>>>>
>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>>>>
>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

From: LeDuc, James W.
Sent: Thursday, August 24, 2017 8:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrfranz@gmail.com>

Subject: Re: RE: RE: RE: Thank you!

Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>

>-----Original Message-----

>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>Sent: Sunday, July 23, 2017 9:50 PM

>To: Rusek, Benjamin

>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>Subject: Re: RE: RE: Re: Thank you!

>Importance: High

>

>Deare Benjamin,

>

>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

>

>Regards

>

>Zhiming

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>

>>Greetings Zhiming,

>>

>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>>

>>What do you think about holding a 2-3 day meeting during one of the following weeks:

>>

>>November 13 (this week may be too early to get the MOU finalized and

>>for the Chinese group to obtain their visas, what do you think?)

>>December 11 (meeting would have to take place later in the week as Jim

>>is traveling the week before) January 8, 2018 January 15, 2018 January

>>22, 2018

>>

>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>>

>>Kind regards,

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Rusek, Benjamin

>>Sent: Wednesday, June 28, 2017 4:16 PM

>>To: 'Yuan Zhiming'; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: RE: RE: Re: Thank you!

>>
 >>Greetings Zhiming,
 >>
 >>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
 >>
 >>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
 >>
 >>Kind regards,
 >>
 >>Ben
 >>
 >>Benjamin Rusek
 >>The U.S. National Academy of Sciences
 >>1-202-334-3975
 >>
 >>-----Original Message-----
 >>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
 >>Sent: Monday, June 26, 2017 3:19 AM
 >>To: Rusek, Benjamin; David Franz
 >>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
 >>Subject: Re: RE: Re: Thank you!
 >>Importance: High
 >>
 >>Dear Rusek,
 >>
 >>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafty, biosecurity and bioethics among publics, academics, enterprners.
 >>
 >>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:
 >>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
 >>2) Set up a scientific cooperation working group and identify the main
 >>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
 >>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
 >>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
 >>
 >>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
 >>
 >>Regards
 >>
 >>Yuan Zhiming
 >>
 >>
 >>

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>>>
>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
>>>1. Write a joint white paper outlining issues of mutual concern 2.
>>>Work to form an official partnership via a memorandum of
>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
>>>
>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).
>>>
>>>Kind regards,
>>>
>>>Benjamin Rusek
>>>The U.S. National Academy of Sciences
>>>1-202-334-3975
>>>
>>>-----Original Message-----
>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Thursday, May 25, 2017 11:34 PM
>>>To: David Franz
>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>>zhanghan; chenxw
>>>Subject: Re: Re: Thank you!
>>>
>>>Dear All friends
>>>
>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previligid scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official coopeation between our
>>>institute and Gaveston laboratory. I hope this meeting will be a
>>>milestone for futher Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
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>> n your profession.
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>>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and the our institute, quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

>>>

>>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>

>>>>Regards to all.

>>>

>>>>Zhiming

>>>

>>>

>>>

>>>

>>>

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>>

>>>>>Best regards, Dave

>>>>>

>>>>>David R. Franz DVM, Ph.D

>>>>>

>>>>>(b)(6)

>>>>>

>>>>>

>>>>>

>>>>>

>>>>>

>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to

hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

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>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

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>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

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>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Friday, August 25, 2017 8:00 PM
To: LeDuc, James W.
Cc: Shi, Pei yong;David Franz;Holubar, Connie J.;Lowenthal, Micah
Subject: Re: Thank you!

Hi Jim,

Your idea for the letter structure sounds good. We will work on the invitation material. Yes mid September is a good deadline for a Chinese / U.S. participant list, I can work on a possible list of U.S. names Labor Day week when I am back in the office, but feel free to propose names.

Kish and I have been following the news about Hurricane Harvey from Vietnam. I hope everyone at GNL makes it through safely. We are thinking about you all.

Kind regards,

Ben

> On Aug 24, 2017, at 8:42 PM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>

> Ben,

>

> Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

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> Thanks, Jim

>

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> Cc: 'David Franz' <davidrf Franz@gmail.com>; Holubar, Connie J.

> <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>

> Subject: RE: RE: RE: RE: Re: Thank you!

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> Hi Jim and Pei-young,

>

> Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

>

> So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy

of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

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> Benjamin Rusek

> The U.S. National Academy of Sciences

> 1-202-334-3975

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> Subject: RE: RE: RE: RE: Re: Thank you!

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> Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz'

> <davidrf Franz@gmail.com>

> Subject: RE: RE: RE: RE: Re: Thank you!

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> Dear all,

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> As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

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>

> Best,

> Pei-Yong

>

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> Sent: Wednesday, August 09, 2017 10:25 PM

> To: Rusek, Benjamin <BRusek@nas.edu>

> Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiazek@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidfranz@gmail.com>

> Subject: Re: RE: RE: RE: Thank you!

> Importance: High

>

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>

> Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

>

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>

> 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.

> 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.

> 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.

> 4) Gao Fu and Liang Mifang from CDC.

> 5) Yigong Shi from Tsinghua University

> 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

>

> I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

>

>

> As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

>

> -New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

>

> Best regards

>

> Zhiming

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>>

>> Benjamin Rusek

>> The U.S. National Academy of Sciences

>> 1-202-334-3975

>>

>> -----Original Message-----

>> From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>> Sent: Sunday, July 23, 2017 9:50 PM

>> To: Rusek, Benjamin

>> Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>> Subject: Re: RE: RE: Thank you!

>> Importance: High

>>

>> Deare Benjamin,

>>

>> Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

>> There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

>>

>> Regards

>>

>> Zhiming

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>>

>>> Greetings Zhiming,

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>>> For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>>>

>>> What do you think about holding a 2-3 day meeting during one of the following weeks:

>>>

>>> November 13 (this week may be too early to get the MOU finalized and

>>> for the Chinese group to obtain their visas, what do you think?)
>>> December 11 (meeting would have to take place later in the week as
>>> Jim is traveling the week before) January 8, 2018 January 15, 2018
>>> January 22, 2018
>>>
>>> NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.
>>>
>>> Kind regards,
>>>
>>> Benjamin Rusek
>>> The U.S. National Academy of Sciences
>>> 1-202-334-3975
>>>
>>> -----Original Message-----
>>> From: Rusek, Benjamin
>>> Sent: Wednesday, June 28, 2017 4:16 PM
>>> To: 'Yuan Zhiming'; David Franz
>>> Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>> Subject: RE: RE: Re: Thank you!
>>>
>>> Greetings Zhiming,
>>>
>>> Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
>>>
>>> We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
>>>
>>> Kind regards,
>>>
>>> Ben
>>>
>>> Benjamin Rusek
>>> The U.S. National Academy of Sciences
>>> 1-202-334-3975
>>>
>>> -----Original Message-----
>>> From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>> Sent: Monday, June 26, 2017 3:19 AM
>>> To: Rusek, Benjamin; David Franz
>>> Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>> Subject: Re: RE: Re: Thank you!
>>> Importance: High
>>>
>>> Dear Rusek,
>>>
>>> Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of

cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.

>>>

>>> Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>> 1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>> 2) Set up a scientific cooperation working group and identify the main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>> 3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurtly and bioethics, the responsibility of two academies.

>>> 4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>>

>>> Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>>

>>> Regards

>>>

>>> Yuan Zhiming

>>>

>>>

>>>

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>>>>

>>>> Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>> 1. Write a joint white paper outlining issues of mutual concern 2.

>>>> Work to form an official partnership via a memorandum of

>>>> understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>>

>>>> I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>>

>>>> Kind regards,

>>>>

>>>> Benjamin Rusek

>>>> The U.S. National Academy of Sciences

>>>> 1-202-334-3975

>>>>

>>>> -----Original Message-----

>>>> From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>> Sent: Thursday, May 25, 2017 11:34 PM

>>>> To: David Franz

>>>> Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>> zhanghan; chenxw

>>>> Subject: Re: Re: Thank you!

>>>>

>>>> Dear All friends

>>>>

>>>> Thanks you for your contributiion for the excellent 2nd China-US
>>>> workshop on challenges of emerging infectious, laboratory biosafety
>>>> and global health security. Without your help, we can not have this
>>>> good communication chance for the scientists and we can not discuss
>>>> the important public hearth affires with the previlged scientists
>>>> from China and USA. During the meeting, the scientists,
>>>> policymakers, advisors from China and USA exchange the great
>>>> achievements in science and technology in related areas, discussed
>>>> the new conception and new strategy for disease control, the roles
>>>> of biosafety, biosecurity and bioethics in infectious disease
>>>> control, and discussed for the possibility for future cooperation
>>>> between the Chinese and American, especially the official
>>>> coopeation between our institute and Gaveston laboratory. I hope
>>>> this meeting will be a milestone for futher Sino-US cooperation on
>>>> infectious disease control, and I hope your stay in Wuhan will be
>>>> the most precious memory i
>>> n your profession.

>>>>

>>>> Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.

>>>>

>>>> We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>>

>>>> Regards to all.

>>>>

>>>> Zhiming

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>>>>>>

>>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>>

>>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop
an outstanding success.

>>>>>>

>>>>>> I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe
each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and
particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our
future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to
continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal
meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have
planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.

>>>>>>

>>>>> Best regards, Dave

>>>>>

>>>>> David R. Franz DVM, Ph.D

>>>>>

>>>>> (b)(6)

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>>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>>

>>>>>> Dear Zhiming,

>>>>>>

>>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>>

>>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>>

>>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>>

>>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>>

>>>>>> With best wishes,

>>>>>>

>>>>>> Jim

>>>>>>

>>>>>> James W. Le Duc, Ph.D.

>>>>>> Director

>>>>>> Galveston National Laboratory

>>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>>> (t) 409-266-6500

>>>>>> (f) 409-266-6810

>>>>>> (m) (b)(6)

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From: Yuan Zhiming <yzm@wh.iov.cn>
Sent: Sunday, August 27, 2017 7:28 PM
To: Rusek, Benjamin
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
Subject: Re: RE: RE: RE: Re: Thank you!

Hi, again,

Nice to have your feedback. I had a phone discussion with Peiyong about our concerns and the future activity and we all agree with your proposal. We are looking for your invitation letter and initiate the application procedure.

Regards

Zhiming

>Hi Zhiming,

>

>Sorry for the delayed response. Your proposal sounds great. We will prepare invitation letters for the individual you list so each one can apply for official approval and their visa individually. We will send you the letter first to make sure it is ok. The topics look very good as well.

>

>Kind regards,

>

>Ben

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>

>-----Original Message-----

>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>Sent: Wednesday, August 09, 2017 11:25 PM

>To: Rusek, Benjamin

>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>Subject: Re: RE: RE: RE: Re: Thank you!

>Importance: High

>

>Dear all,

>

>Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

>

>I have some suggestion for the invited Chinese participants:

>

>1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.

>2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.

>3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.

>4) Gao Fu and Liang Mifang from CDC.

>5) Yigong Shi from Tsinghua University

>6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

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>-New approaches and technologies for conbating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

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>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

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>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Sunday, July 23, 2017 9:50 PM

>>To: Rusek, Benjamin

>>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>>Subject: Re: RE: RE: Re: Thank you!

>>Importance: High

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>>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

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>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

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>>>From: Rusek, Benjamin

>>>Sent: Wednesday, June 28, 2017 4:16 PM

>>>To: 'Yuan Zhiming'; David Franz

>>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>>Subject: RE: RE: Re: Thank you!

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>>>Greetings Zhiming,

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>>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

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>>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

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>>>Benjamin Rusek
>>>The U.S. National Academy of Sciences
>>>1-202-334-3975
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>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Monday, June 26, 2017 3:19 AM
>>>To: Rusek, Benjamin; David Franz
>>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>>Subject: Re: RE: Re: Thank you!
>>>Importance: High
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>>>Dear Rusek,
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>>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
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>>>Yuan Zhiming
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>>>>Work to form an official partnership via a memorandum of
>>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
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>>>>Benjamin Rusek

>>>>The U.S. National Academy of Sciences

>>>>1-202-334-3975

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>>>>-----Original Message-----

>>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>>To: David Franz

>>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>>zhanghan; chenxw

>>>>Subject: Re: Re: Thank you!

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>>>>Dear All friends

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>>>>Thanks you for your contributiion for the excellent 2nd China-US

>>>>workshop on challenges of emerging infectious, laboratory biosafety

>>>>and global health security. Without your help, we can not have this

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>>>>the important public hearth affires with the previlaged scientists

>>>>from China and USA. During the meeting, the scientists,

>>>>policymakers, advisors from China and USA exchange the great

>>>>achievements in science and technology in related areas, discussed

>>>>the new conception and new strategy for disease control, the roles

>>>>of biosafety, biosecurity and bioethics in infectious disease

>>>>control, and discussed for the possibility for future cooperation

>>>>between the Chinese and American, especially the official coopeation

>>>>between our institute and Gaveston laboratory. I hope this meeting

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>>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both

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>>>>Zhiming

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>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
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>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
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>>>>> I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.
>>>>>
>>>>> Best regards, Dave
>>>>>
>>>>> David R. Franz DVM, Ph.D
>>>>>
>>>>> (b)(6)
>>>>>
>>>>>
>>>>>
>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>>
>>>>> Dear Zhiming,
>>>>>
>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>>>>
>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
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>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.
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>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

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>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

From: Lowenthal, Micah <mloventh@nas.edu>
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W.; Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Thank you!
Attachments: Galveston Meeting Invitation to Chinese_1.docx

Jim,
It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.
Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.
I understand if you're too occupied with other matters to give this attention right now.
Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mloventh@nas.edu>
Subject: RE: RE: RE: RE: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

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From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

Sent: Wednesday, August 09, 2017 10:25 PM

To: Rusek, Benjamin <BRusek@nas.edu>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>

Subject: Re: RE: RE: RE: Thank you!

Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
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I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers

for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

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>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
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>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Thank you!
>Importance: High
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>Deare Benjamin,
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>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
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>Regards
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>>Greetings Zhiming,
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>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>
>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>
>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim

>>is traveling the week before) January 8, 2018 January 15, 2018 January

>>22, 2018

>>

>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>>

>>Kind regards,

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Rusek, Benjamin

>>Sent: Wednesday, June 28, 2017 4:16 PM

>>To: 'Yuan Zhiming'; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: RE: RE: Re: Thank you!

>>

>>Greetings Zhiming,

>>

>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>>

>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>>

>>Kind regards,

>>

>>Ben

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Monday, June 26, 2017 3:19 AM

>>To: Rusek, Benjamin; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: Re: RE: Re: Thank you!

>>Importance: High

>>

>>Dear Rusek,

>>

>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and bioethics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.

>>

>>Thanks for your invitation of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>2) Set up a scientific cooperation working group and identify the main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurity and bioethics, the responsibility of two academies.

>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>

>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>

>>Regards

>>

>>Yuan Zhiming

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>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>

>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>

>>>Kind regards,

>>>

>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

>>>

>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

>>>

>>>Dear All friends

>>>

>>>Thanks you for your contributiion for the excellent 2nd China-US

>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public health affairs with the privileged scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official cooperation between our
>>>institute and Galveston laboratory. I hope this meeting will be a
>>>milestone for further Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
>>>memory in
>> n your profession.

>>>
>>>Yes, we need to have a meeting report, indicating our activities, concerns and suggestion for further action for both
academies, letting the top leaders understand the effectiveness, practicability and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarantining, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in next
meeting in USA.

>>>
>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>
>>>Regards to all.

>>>
>>>Zhiming

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>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>
>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.

>>>>
>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe
each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and
particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our
future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to
continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal
meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have
planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.

>>>>
>>>>Best regards, Dave

>>>>
>>>>David R. Franz DVM, Ph.D

>>>>
>>>>(b)(6)
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>>>>
>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>
>>>> Dear Zhiming,
>>>>
>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>>>
>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
>>>>
>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.
>>>>
>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>
>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>>>
>>>> With best wishes,
>>>>
>>>> Jim
>>>>
>>>> James W. Le Duc, Ph.D.
>>>> Director
>>>> Galveston National Laboratory
>>>> University of Texas Medical Branch Galveston, TX 77555-0610
>>>> (t) 409-266-6500
>>>> (f) 409-266-6810
>>>> (m) (b)(6)

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Policy and Global Affairs

500 Fifth Street, NW
Washington, DC 20001 USA
Phone: 001.202.334.3074
Fax: 001.202.334.1730
E-mail: mlowenthal@nas.edu

September 6, 2017

LIU LONGDING

Kunming Institute of Medical Biology

ZHANG YUN

Kunming Institute of Medical Biology

BU ZHIGAO

Harbin Veterinary Research Institute

CHEN XINWEN

Wuhan Institute of Virology

YUAN ZHIMING

Wuhan Institute of Virology

SHI ZHENGLI

Wuhan Institute of Virology

QIN CHENGFENG

Academy of Military Medical Sciences

CHENG CAO

Academy of Military Medical Sciences

GAO FU

LIANG MIFANG

China Center for Disease Control

SHI YIGONG

Tsinghua University

ZHANG YAPING

SUN HUI, Director of department, International Cooperation bureau
Chinese Academy of Sciences

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3074 Fax 202.334.1730 E-mail mlowenthal@nas.edu www.nas.edu/pga

Dear XX XXX:

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts who work to counter infectious disease. The meeting is being convened by the National Academies of Sciences, Engineering, and Medicine (NASEM) and hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas.

For over a year, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. We are pleased that this fruitful dialogue will continue in 2018. In particular, we need your participation in the January meeting in Texas to work through details of future collaboration between GNL and institutes and experts in China, and to discuss both conceptual and practical issues related to disease surveillance and response, biosafety, and biosecurity.

Because your participation is central to our joint efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

Benjamin Rusek
Senior Program Officer, Policy and Global Affairs Division

James Le Duc, Ph.D.
Director, Galveston National Laboratory

From: LeDuc, James W.
Sent: Thursday, August 31, 2017 3:10 PM
To: Lowenthal, Micah;Rusek, Benjamin;Shi, Pei yong
Cc: 'David Franz';Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!
Attachments: NAS-China Galveston Meeting Invitation to Chinese_1-8-2017.docx

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mloventh@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrf Franz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,
It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.
Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.
I understand if you're too occupied with other matters to give this attention right now.
Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]

Sent: Thursday, August 24, 2017 7:57 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>

Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>

Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

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Kind regards,

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The U.S. National Academy of Sciences

1-202-334-3975

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Best,
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Best regards

Zhiming

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>>is traveling the week before) January 8, 2018 January 15, 2018 January

>>22, 2018

>>

>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>>

>>Kind regards,

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Rusek, Benjamin

>>Sent: Wednesday, June 28, 2017 4:16 PM

>>To: 'Yuan Zhiming'; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: RE: RE: Re: Thank you!

>>

>>Greetings Zhiming,

>>

>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>>

>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>>

>>Kind regards,

>>

>>Ben

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>
>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Monday, June 26, 2017 3:19 AM
>>To: Rusek, Benjamin; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: Re: RE: Re: Thank you!
>>Importance: High
>>
>>Dear Rusek,
>>
>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.
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>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
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>>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
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>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
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>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
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>>Regards
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>>Yuan Zhiming
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>>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
>>>>1. Write a joint white paper outlining issues of mutual concern 2.
>>>>Work to form an official partnership via a memorandum of
>>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
>>>>
>>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

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>>>Benjamin Rusek
>>>The U.S. National Academy of Sciences
>>>1-202-334-3975
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>>>-----Original Message-----
>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Thursday, May 25, 2017 11:34 PM
>>>To: David Franz
>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>>zhanghan; chenxw
>>>Subject: Re: Re: Thank you!
>>>
>>>Dear All friends
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>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previlged scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
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>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>>
>>>Regards to all.
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>>

>>>>> Best regards, Dave

>>>>>

>>>>> David R. Franz DVM, Ph.D

>>>>>

>>>>> (b)(6)

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>>>>>

>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>
>>>>> With best wishes,
>>>>>
>>>>> Jim
>>>>>
>>>>> James W. Le Duc, Ph.D.
>>>>> Director
>>>>> Galveston National Laboratory
>>>>> University of Texas Medical Branch Galveston, TX 77555-0610
>>>>> (t) 409-266-6500
>>>>> (f) 409-266-6810
>>>>> (m)

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Policy and Global Affairs

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Washington, DC 20001 USA
Phone: 001.202.334.3074
Fax: 001.202.334.1730
E-mail: mloventhal@nas.edu

September 6, 2017

LIU LONGDING

Kunming Institute of Medical Biology

ZHANG YUN

Kunming Institute of Medical Biology

BU ZHIGAO

Harbin Veterinary Research Institute

CHEN XINWEN

Wuhan Institute of Virology

YUAN ZHIMING

Wuhan Institute of Virology

SHI ZHENGLI

Wuhan Institute of Virology

QIN CHENGFENG

Academy of Military Medical Sciences

CHENG CAO

Academy of Military Medical Sciences

GAO FU

LIANG MIFANG

China Center for Disease Control

SHI YIGONG

Tsinghua University

ZHANG YAPING

SUN HUI, Director of department, International Cooperation bureau
Chinese Academy of Sciences

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3074 Fax 202.334.1730 E-mail mloventhal@nas.edu www.nas.edu/pgs

Dear XX XXX:

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts who work to counter infectious disease. The meeting is being convened by the National Academies of Sciences, Engineering, and Medicine (NASEM) and hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas.

For over a year, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. We are pleased that this fruitful dialogue will continue in 2018. In particular, we need your participation in the January meeting in Texas to work through details of future collaboration between USA and institutes and experts in China, and to discuss both conceptual and practical issues related to disease surveillance and response, biosafety, and biosecurity.

Because your participation is central to our joint efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

Benjamin Rusek
Senior Program Officer, Policy and Global Affairs Division

James Le Duc, Ph.D.
Director, Galveston National Laboratory

Commented [LJW1]: Replaced GNL with USA

Deleted: GNL

From: Shi, Pei yong
Sent: Thursday, August 31, 2017 11:23 PM
To: LeDuc, James W.;Lowenthal, Micah;Rusek, Benjamin
Cc: 'David Franz';Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Micah and Jim,

Thanks for the preparation of invitation letters. The participants from Chinese side are correct.

All the best,
Pei-Yong

-----Original Message-----

From: LeDuc, James W.
Sent: Thursday, August 31, 2017 3:10 PM
To: Lowenthal, Micah <mlowenth@nas.edu>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mlowenth@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,
It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.
Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.
I understand if you're too occupied with other matters to give this attention right now.
Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]

Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>
Subject: Re: RE: RE: RE: Re: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for conbating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>Subject: Re: RE: RE: Re: Thank you!
>Importance: High
>
>Deare Benjamin,
>
>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>
>Regards
>
>Zhiming
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>
>>Greetings Zhiming,
>>
>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>
>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>
>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim
>>is traveling the week before) January 8, 2018 January 15, 2018 January
>>22, 2018
>>
>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.
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>>Kind regards,
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>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
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>>From: Rusek, Benjamin
>>Sent: Wednesday, June 28, 2017 4:16 PM
>>To: 'Yuan Zhiming'; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: RE: RE: Re: Thank you!
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>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

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>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

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>>
>>Yuan Zhiming

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>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

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>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

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>>>Kind regards,

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>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

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>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

>>>

>>>Dear All friends

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>>>advisors from China and USA exchange the great achievements in

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>>>and new strategy for disease control, the roles of biosafety,

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>>>discussed for the possibility for future cooperation between the

>>>Chinese and American, especially the official coopeation between our

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>>>milestone for futher Sino-US cooperation on infectious disease

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>> n your profession.

>>>

>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,

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>>>

>>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>

>>>>Regards to all.

>>>

>>>>Zhiming

>>>

>>>

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>>>

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>>>>>

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>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>>

>>>>>Best regards, Dave

>>>>>

>>>>>David R. Franz DVM, Ph.D

>>>>>

>>>>>(b)(6)

>>>>>

>>>>>

>>>>>

>>>>>

>>>>>

>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)



Oral Program

Sunday, October 1, 2017	
11:00-13:00	Registration Room: Hotel Lobby North/Assembly Foyer
Room	South Ballroom
13:00-13:15	Opening Remarks, Editorial Organizers
13:15-14:15	Opening Keynote: Anthony S. Fauci, NIAID, USA Emerging and Re-Emerging Infectious Diseases: From AIDS to Zika [KEY1]
14:15-17:45	Session 1: Genomics & Evolution Session Chair: Akiko Iwasaki, Yale University
14:15-14:45	George Fu Gao, Chinese Academy of Sciences, China Enveloped virus entry: From Flu to Ebola [INV01]
14:45-15:00	[ST01] Functional Evolution of Zika Virus in the Americas N.D. Grubaugh*, C. Ontiveros, R. Agarwal, T. Rogers, N. Beutler, K. Gangavarapu, G. Oliveira, R. Robles-Sikisaka, D. Burton, K.G. Andersen The Scripps Research Institute, USA
15:00-15:15	[ST02] Characterization of a clade-defining Ebola virus glycoprotein mutant from the 2013-2016 epidemic W.E. Diehl ¹ , D. Mu ¹ , A.E. Lin ³ , M. Cabot ² , K.G. Andersen ⁴ , J.H. Kuhn ⁶ , P. Sabeti ³ , B. Ganser-Pornillos ² , J. White ² , J. Luban* ¹ et al ¹ University of Massachusetts Medical School, USA, ² University of Virginia, USA, ³ Harvard University, USA, ⁴ The Scripps Research Institute, USA, ⁵ University of Edinburgh, UK, ⁶ NIAID, USA
15:15-15:45	Gustavo Palacios, USAMRIID Center for Genomic Sciences, USA Near real-time genomics applications in clinical virology and biosurveillance [INV02]
15:45-16:15	Refreshment Break Room: North Ballroom
16:15-16:45	Linfa Wang, Duke-NUS Medical School, Singapore Programme in emerging infectious diseases [INV03]
16:45-17:00	[ST03] Immune correlates of protection from a universal influenza vaccine during intra- and intersubtypic heterologous challenge with H1, H6, H7 and H10 influenza viruses J.C. Kash* ¹ , K.A. Walters ² , L.M. Schwartzman ¹ , S. Fong ¹ , X. Yang ¹ , J.K. Park ¹ , J.K. Taubenberger ¹ ¹ National Institute of Allergy and Infectious Diseases, USA, ² Institute for Systems Biology, USA
17:00-17:15	[ST04] Molecular basis for differential regulation of innate immune responses by Ebola and Marburg viruses G.K. Amarasinghe* ¹ , A. Bukreyev ² , D.W. Leung ¹ , C.F. Basler ³ ¹ Washington University in St. Louis, USA, ² University of Texas, USA, ³ Georgia State University, USA
17:15-17:30	[ST05] Elucidating host and viral contributions to flavivirus virulence in vivo F. Douam*, G. Hrebikova, R. Leach, Y. Sharon, L. Parson ² , W. Wang, J. Gaska, B. Heller, Q. Ding ¹ , A. Ploss Princeton University, USA
17:30-17:45	[ST06] EphrinB2 receptor binding induces allosteric changes in Nipah virus attachment protein G J.J. Wong* ¹ , T.A. Young ² , J. Zhang ³ , S. Liu ³ , G.P. Leser ⁵ , E.A. Komives ⁴ , R.A. Lamb ⁵ , Z.H. Zhou ³ , J. Salafsky ² , T.S. Jardetzky ¹ et al ¹ Stanford University, USA, ² Biodesy Inc., USA, ³ University of California Los Angeles, USA, ⁴ University of California San Diego, USA, ⁵ Northwestern University, USA
17:45-19:00	Welcome Drinks Reception Room: North Ballroom

Monday, October 2, 2017	
Room	South Ballroom
09:00-11:45	Session 2: Emergence and Surveillance Session Chair: Sara Cherry, University of Pennsylvania
09:00-09:30	Peter Daszak, EcoHealth Alliance, USA TBC [INV04]
09:30-10:00	Zhengli Shi, Wuhan Institute of Virology, China SARS coronavirus may have originated from frequent recombination events between SL-CoVs in a single horseshoe bat habitat [INV05]
10:00-10:15	[ST07] Interferon-γ-driven iNOS: a molecular pathway to terminal shock in arenavirus hemorrhagic fever M.M. Remy ^{1,2} , M. Sahin ^{*1} , L. Flatz ^{2,3} , T. Regen ^{4,5} , L. Xu ¹ , M. Kreutzfeldt ⁶ , B. Fallet ¹ , B.A. Kaufmann ¹ , D. Merkler ⁶ , D.D. Pinschewer ^{1,2} et al ¹ University of Basel, Switzerland, ² University of Geneva, Switzerland, ³ Kantonspital St. Gallen, Switzerland, ⁴ Georg-August-University, Germany, ⁵ Johannes Gutenberg University, Germany, ⁶ University and University Hospital of Geneva, Switzerland
10.15-10.45	Refreshment Break Room: North Ballroom
Room	South Ballroom
10:45-11:15	Yoshihiro Kawaoka, University of Wisconsin-Madison, USA Working with deadly viruses: battling Ebola and influenza [INV06]
11:15-11:30	[ST08] Multifrontal countermeasures by Zika virus to subvert type I interferon signaling J.R. Bowen ¹ , K.M. Quicke ¹ , M.G. Zimmerman ¹ , E.L. Johnson ¹ , J.T. O'Neal ¹ , C.E. McDonald ² , R. Chakraborty ¹ , B. Pulendran ² , M.S. Suthar ^{*1} ¹ Emory University, USA, ² Stanford University, USA
11:30-11:45	[ST09] Organotypic human models of type III interferon-mediated protection from Zika virus infections at the maternal-fetal interface J. Corry ^{1,2} , N. Arora ^{1,2} , C.B. Coyne ^{*1,2} ¹ University of Pittsburgh, USA, ² Children's Hospital of Pittsburgh of UPMC, USA
11:45-11:55	Bio-techne Travel Award Presentation
11:55-12:05	Poster Teasers 1
12:05 - 13:30	Lunch Room: North Ballroom
12:30 -13:30	Meet the Editors Session Room: South Ballroom
13:30-15:00	Poster Session 1 Room: North Ballroom
Room	South Ballroom
15:00-17:30	Session 3: Innate and Cellular Responses Session Chair: George Gao, Chinese Academy of Sciences
15:00-15:30	Adolfo Garcia Sastre, Mount Sinai School of Medicine, USA Regulation of influenza virus sensing and antiviral responses by host and virus factors [INV07]
15:30-16:00	Akiko Iwasaki, Yale University, USA Immune responses and pathogenesis of Zika virus infection [INV08]
16:00-16:30	Refreshment break Room: North Ballroom
Room	South Ballroom
16:30-17:00	Michael Diamond, Washington University School of Medicine at St. Louis, USA Using mouse models to study the pathogenesis and immune response to zika virus [INV09]
17:00-17:30	Sara Cherry, University of Pennsylvania, USA Using functional genomics to explore arbovirus-host interactions [INV10]
17:30-18:00	SPECIAL TALK: Richard Preston, Author, USA
19:00-22:00	Meet the Speakers Dinner Room: North Ballroom

Tuesday, October 3, 2017	
Room	South Ballroom
09:00-11:45	Session 4: Antibody Responses <i>Session Chair: Adolfo Garcia Sastre, Mount Sinai School of Medicine, USA</i>
09:00-09:30	Erica Ollmann Saphire, The Scripps Research Institute, USA TBC [INV11]
09:30-10:00	Nancy Sullivan, NIAID, USA TBC [INV12]
10:00-10:30	Sheemei Lok, Duke-NUS Medical School, Singapore Zika virus and its antibody structures [INV13]
10:30-10:45	[ST10] Maternal immunity and antibodies to dengue can promote Zika virus-induced microcephaly in fetuses A.P.S. Rathore ^{3,1} , W.A. Saron ¹ , T. Lim ¹ , A.L. St. John ^{*1,2} ¹ Duke-NUS Medical School, Singapore, ² National University of Singapore, Singapore, ³ Duke University, USA
10.45-11.05	Refreshment Break Room: North Ballroom
Room	South Ballroom
11:05-16:15	Session 5: Vaccines & Therapeutics <i>Session Chair: Julie Stacey, Editor, EBiomedicine</i>
11:05-11:35	James Crowe, Vanderbilt University School of Medicine, USA Antibody mediated neutralization of emerging viral threats [INV14]
11:35-12:05	Dan Barouch, Ragon Institute of MGH, MIT and Harvard, USA Preclinical and Clinical Development of Zika Virus Vaccines [INV15]
12:05-12:20	[ST11] Targeting TfR1-tropic arenaviruses at their achilles heel: structure-based rational design of universal immunotherapy H. Cohen-Dvashi, R. Diskin* Weizmann Institute of Science, Israel
12:20-12:30	Poster Teasers 2
12:30-13:30	Lunch Room: North Ballroom
13:30-15:00	Poster Session 2 Room: North Ballroom
Room	South Ballroom
15:00-15:30	Luciano Moreira, Centro de Pesquisas René Rachou, Brazil Wolbachia as an arbovirus control strategy [INV16]
15:30-15:45	[ST12] Viral oral infections in Drosophila are cleared independently of RNAi and increase resistance to further infections J.A. Mondotte*, V. Gausson, L. Frangeul, H. Blanc, L. Lambrechts, M.C. Saleh Institut Pasteur, France
15:45-16:15	Johan Neyts, KU Leuven, Belgium Antivirals, a lot has been achieved, yet a long way to go [INV17]
16:15-16:30	Poster winners & Closing Remarks

From: LeDuc, James W. <jwleduc@UTMB.EDU>
Sent: Wednesday, September 27, 2017 3:47 PM
To: Shi;Pei yong;Garcia-Blanco;Mariano A.;Niesel;David W.;Barrett;Alan;Jacobs;Danny O.;Weaver;Scott
Subject: FW: In Fight Against Diseases, China to Open Top-Safety Biology Lab

See note below, relevant to Friday's visit by George Gao.

Jim

From: Yoes, Cissy A.
Sent: Wednesday, September 27, 2017 3:19 PM
To: Raimer, Ben G. <bgraimer@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Mastrangelo, Mike <mimastra@UTMB.EDU>; Walker, David H. <dwalker@UTMB.EDU>; Lancaster, Dylan <dylancas@UTMB.EDU>
Subject: In Fight Against Diseases, China to Open Top-Safety Biology Lab

In Fight Against Diseases, China to Open Top-Safety Biology Lab

Plan for biosafety level-4 laboratory was drafted after SARS outbreak killed thousands in 2003.

Wang Yiwei

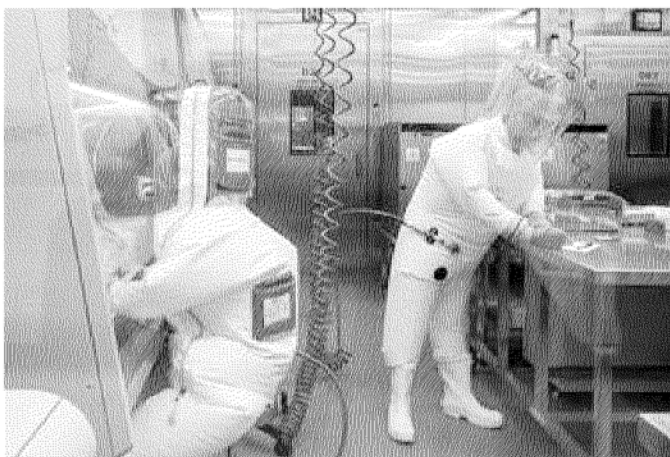
Sep 27, 2017

A new research institute in Wuhan, capital of central China's Hubei province, will later this year join the global community of elite laboratories that study the world's most dangerous infectious diseases, reported the state-owned newspaper Science and Technology Daily on Tuesday.

The new research base will be the first in China certified as biosafety level 4 (BSL-4), the highest standard set by the Centers for Disease Control and Prevention in the United States for laboratories that deal with test animals and infectious microorganisms.

BSL-4 laboratories are designed to effectively seal off experiment areas from the outside world. They also incorporate strict security measures, such as iris scanners. According to a 2011 list, there are 40 such labs either in use or under construction worldwide, about half of which are located in the U.S. and the European Union.

BSL-4 institutes carry out experiments on deadly pathogens for which there is currently no reliable cure, such as Ebola and Marburg, highly dangerous viruses that could kill thousands in a single outbreak.



Workers are seen next to a cage containing mice (right) inside the P4 laboratory in Wuhan, Hubei province, Feb. 23, 2017. Johannes Eisele/VCG

The Wuhan BSL-4 laboratory is a cooperation between the city government and the Chinese Academy of Sciences (CAS). Also known as P4 Laboratory, plans for the institute were first drawn up in 2003 after the outbreak of SARS, a viral respiratory disease that caused at least 5,000 deaths in China.

The lab is part of a 10-year-plan by the Ministry of Science and Technology that proposes to build five to seven BSL-4 laboratories by 2025 as well as one BSL-3 lab in every province. It was built with technology and equipment imported from France, and some of its future research staff have visited France for BSL-4 training.

Although construction was finished in 2015, the lab has since undergone multiple assessments, Yuan Zhiming, director of the Wuhan branch of CAS, told the Science and Technology Daily. "The lab will become a public platform for Chinese scientists to conduct research into dangerous viruses," Yuan said.

"The opening of a Chinese BSL4 [laboratory] is another step in the excellent growth of the country's research base," Vincent Racaniello, virology professor at the Department of Microbiology & Immunology at Columbia University in New York, told Sixth Tone Wednesday by email.

Official funding for research into infectious diseases used to be low before the SARS strike. For example, the Chinese government invested only 10,000 to 20,000 yuan (\$1,500 to 3,000) per year into Ebola studies until 2003, but funding has increased in recent years. In comparison, the U.S. annually spent an average of \$55 million from 1997 to 2015 to fund research into the Ebola and Marburg viruses.

In 2014, a national program provided 20 million yuan in funding for domestic Ebola studies. Additionally, a private biotechnology company in Tianjin, CanSino, has invested millions into the construction of facilities for vaccine production, including an Ebola vaccine that the company tested successfully in Phase 2 trials in 2015.

"It's extremely important to study dangerous pathogens such as the Ebola virus. We need to understand how such pathogens cause disease, how they spread, and how new ones emerge," said Racaniello. "While there is no ongoing Ebola outbreak, research continues because we still need to learn about the virus and be ready for the next outbreak."

Editor: Kevin Schoenmakers.

Cissy Yoes

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<http://www.utmbhpla.org/healthpolicy>



Working together to work smarter.

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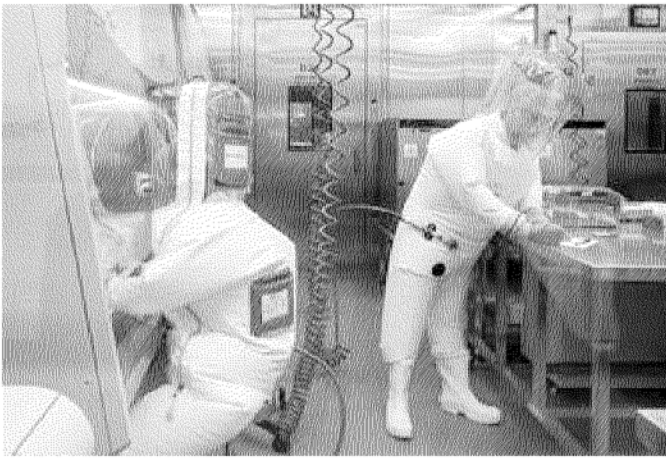
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Working together to work smarter.



6th EVAg MEETING

Agenda & Logistics – 17.10.2017 – 18.10.2017

Table of contents

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1 Agenda

1 st DAY – 17.10.2017, leaving from hotel at 8:50	
09:20-10:30	Introduction and Welcome Chairman: Jean-Louis ROMETTE – AMU
20 min	Presentation of WIV by Prof Yanyi WANG, deputy director of the WIV
10 min	General Consulate of France in Wuhan, Mr Olivier GUYONVARCH
30 min	George FU GAO – VP of China CDC - Member of the External Expert Advisory Board Title: Project of a Chinese Virus Archive
10min	Group Photo
10:30-11:30	Capacities set up chaired by Jean-Louis ROMETTE - AMU
15 min	WP3: General presentation coord Sven REICHE – FLI
45 min	WP3: Tasks discussion (association with infraVec 2 and with VetBioNet)
11:30-12:00	Coffee break
30 min	WP4: Current achievements Maurice BARDSLEY – APHA
30min	WP6: Support to Response chaired by Christian DROSTEN - UKB
13:00-14:30	Lunch (boxed lunch)
14:30-16:30	Capacities set up (continuation by SKYPE) chaired by Jean-Louis ROMETTE - AMU
15 min	WP2: General presentation coord Bruno COUTARD – AMU
45 min	WP2: Tasks Discussion



15 min	WP1 : General presentation - coord Remi CHARREL – AMU
45 min	WP1: Tasks Discussion
16:30-17:00	Coffee break
17:00-18:00	WP7: Providing Access to the EVAg Resource chaired by Christine PRAT – AMU & Jean-Louis ROMETTE – AMU
40 min	Business Analysis: Update on the EVAg DB content Quality of the resource Access provision procedure Relationship with Pharma's: Industrial platform?
20 min	Update of the Nagoya protocole in Europe Christine PRAT- AMU
18:30	End of the 1 st Meeting Day
19:00	Dinner

2nd DAY – 18.10.2017	
8:30-9:30 Transfer by bus from the Hotel to the BSL4 plant. Meeting will continue at BSL4 place	
09:30-10:30	WP8: Transfer of knowledge - dissemination and communication activities chaired by Christine PRAT - AMU
10 min	Updates on EVAg communication strategy and actions Project of collaboration with ProMED Silvia MESCHI – INMI & Christine PRAT – AMU
10 min	E-learning project update Emilie BONNAUD & Florence PRADEL- FMER
40 min	WAVE BSL4 Discussion: what strategy for BSL 4 scientific development in EVAg Stephan Gunther - BNI
10:30-12:00	WP5: Extension of EVAg network and integration of new resources chaired by Hervé BOURHY - IP
15 min	Update on the signature of MoU and collaboration agreements
75min	Call INFRASUPP : action plan Emilie BONNAUD - IP & JL ROMETTE – AMU
included	Coffee break

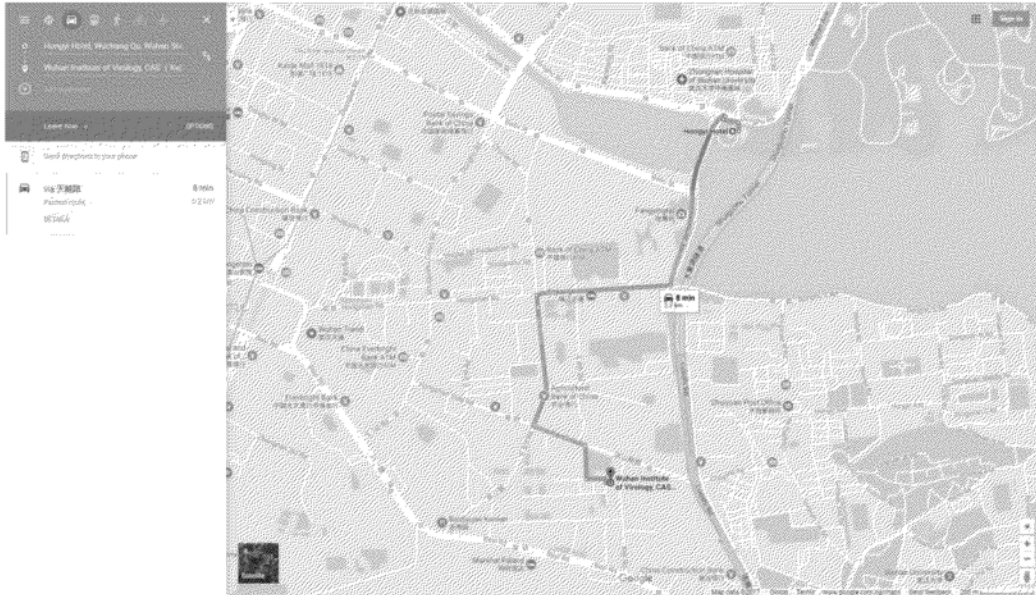


12:00-12:20	WP9: Project Management chaired by Jean-Louis ROMETTE – AMU and Alexia CARRILLO - AMU
20 min	Next financial report - Project of budget reallocation
12:20-13:00	Conclusion chaired by Jean-Louis ROMETTE - AMU
30 min	End of the current EVAg and New EVAg project: discussion
10 min	Preparation of the 7 th EVAg meeting
13:00-14:00	Lunch (boxed lunch)
14:00-17:00	BSL4 - WIV visit
30 min	Presentation of the facility by Prof Zhiming YUAN, Director of the BSL4
2 hours	Visit of the BSL4
16:30	End of the visit and transfer by bus to the hotel
18:00	Dinner at hotel (buffet)

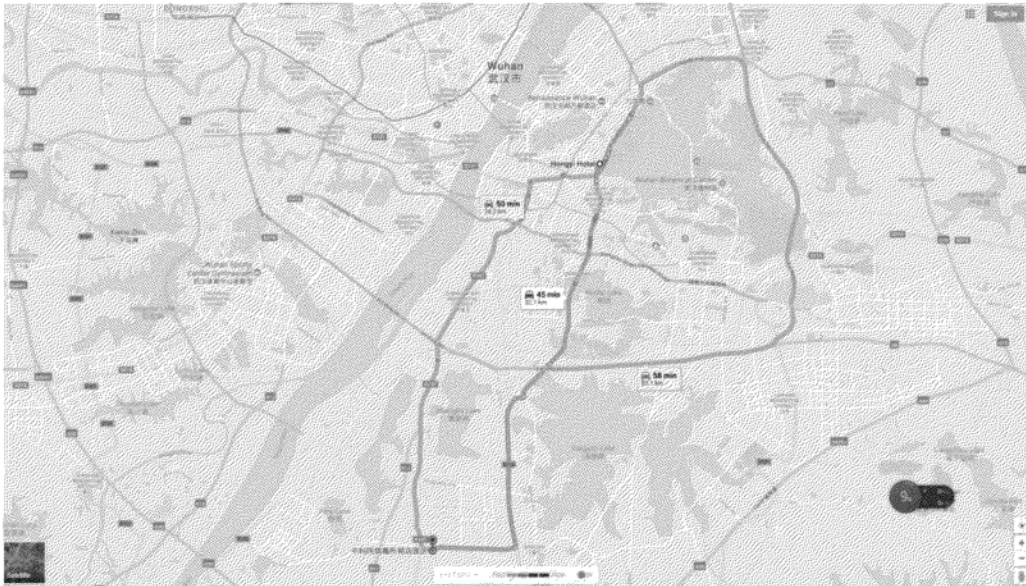
2 Meeting Points

Wuhan Institute of Virology, Chinese Academy of Sciences

- Oct. 17th, 3# Building (2F, meeting room 214), Xiao Hongshan Park, Wuchang, Wuhan



- Oct. 18th, Central Laboratory Building (1F, meeting room 1), Zhengdian Park, Jiangxia, Wuhan



Shuttle bus will be arranged. The distance between the Hongyi hotel to the two meeting points are:

- Oct. 17, about 2.2 km, 8 minutes, by car;
- Oct. 18, about 32 km, 45 minutes, by car.

3 Hotel

★★★★ HONGYI HOTEL

武汉弘毅大酒店

Hongyi Hotel Wuhan

酒店名称：武汉弘毅大酒店

酒店地址：武汉武昌区武昌区东湖路136号(靠东湖边 近楚河汉街)

Address : WuhanWuchang136 Donghu Road, Wuchang. 136,Hubei, China



- Located in the East Lake Scenic Area of Wuhan.
- Wuhan Central Culture Tourist Area, Museum and other entertainment places.
- ~35 km away from Wuhan Tianhe international airport (~48 mins by car)

4 Catering and Dinner

- Buffet lunch will be provided for both days (17th and 18th of October)
- Dinner on the 17th of October, 8 pm

5 Tourist information About Wuhan

- The capital city of Hubei Province in central China
- The world's third River Yangtze
- One of the top 10 cities in China
- 10 million people
- Rich in culture and history
- Famous for Virology

6 Contact points

Aix-Marseille Université	Email	Phone Number
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7 Participant list

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		Leigh	THORNE	Leigh.Thorne@apha.gsi.gov.uk
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		Laurent	DACHEUX	laurent.dacheux@pasteur.fr
Friedrich-Loeffler-Institut	FLI	Sven	REICHE	sven.reiche@fli.bund.de
Agricultural Research Council	ARC-OVI	Ernest	Ngoepe	NgoepeE@arc.agric.za
		Claude	SABETA	SabetaC@arc.agric.za
National Institute for Communicable Diseases of the National Health Laboratory Service	NICD/NHLS	Janusz	Paweska	januszp@nicd.ac.za
		Petrus	JANSEN VAN VUREN	petrusv@nicd.ac.za
Chumakov Institute of Poliomyelitis & Viral Encephalitis	IPVE	Alexander	LUKASHEV	(b)(6)



Scientific research Institute of influenza of the Ministry of healthcare of the Russian Federation	RII	Mikhail	EROPKIN	eropkin@influenza.spb.ru
Chinese Academy of Science wuhang	WIV	Zhihong	HU	huzh@wh.iov.cn
		Fei	DENG	df@wh.iov.cn
		Shu	SHEN	shenshu@wh.iov.cn
		Shuang	TANG	ts@wh.iov.cn
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Commonwealth Scientific and Industrial Research Organisation	CSIRO	Sam	MCCULLOUGH	Sam.Mccullough@csiro.au
		David	WILLIAMS	D.Williams@csiro.au
Swedish Public Health Agency	FoHM	Ali	MIRAZIMI	Ali.Mirazimi@folkhalsomyndigheten.se
St Petersburg Pasteur Institute	St. Petersburg PI	Natalia	ROMANENKOVA	poliospb@nr3854.spb.edu
Institut Pasteur du Cambodge	IPC	Veasna	DUONG	dveasna@pasteur-kh.org
University of Texas Medical Branch	UTMB	Kenneth	PLANTE	ksplante@UTMB.EDU
National Institute for viral disease control and prevention, Chinese center for disease control and prevention	China CDC	Georges	FU GAO	gaofu@chinacdc.cn

From: Rodecap, Valerie
Sent: Tuesday, October 3, 2017 9:32 AM
To: Whitton, Rebecca A.
Cc: Teschendorf, Amber N.
Subject: RE: Seminar announcement

Thanks Rebecca,

Sounds perfect . Thanks for checking with Pei-Yong! ☺

Valerie

From: Whitton, Rebecca A.
Sent: Tuesday, October 3, 2017 9:31 AM
To: Rodecap, Valerie <varodeca@UTMB.EDU>
Cc: Teschendorf, Amber N. <antesche@UTMB.EDU>
Subject: RE: Seminar announcement

Ok guys,

I just confirmed with Dr. Shi, and he will be handling any expenses. It's a good friend of his. I will just create the flyer, and start the advertising.

Rebecca A. Whitton, BS
UTMBG, Biochemistry & Molecular Biology
W 409-772-8071 F 409-772-6334



Working together to work wonders.™

From: Whitton, Rebecca A.
Sent: Tuesday, October 3, 2017 9:27 AM
To: Rodecap, Valerie <varodeca@UTMB.EDU>
Cc: Teschendorf, Amber N. <antesche@UTMB.EDU>
Subject: FW: Seminar announcement

Valerie,

I am working on the flyer for Dr. Shi's guest, Dr. XI Zhou. He will be speaking this Friday. I know it's a late notice, he just notified us. Anyways, since this is a last minute guest, are we paying him an honorarium or any travel expenses. I will be sending out an email notification of the seminar in a few minutes.

Rebecca A. Whitton, BS
UTMBG, Biochemistry & Molecular Biology
W 409-772-8071 F 409-772-6334



Working together to work wonders.™

From: Shi, Pei yong
Sent: Tuesday, October 3, 2017 9:08 AM
To: Whitton, Rebecca A. <rawhitto@UTMB.EDU>
Subject: Seminar announcement

Hi Rebecca,

Here is the information about this special seminar announcement.

Title: Antiviral RNAi Immunity from Insects to Humans
Speaker: Xi Zhou, Professor and Deputy Director
Affiliation: Wuhan Institute of Virology, Chinese Academy of Sciences
Time: 1:00 – 2:00 pm Friday, October 6
Location: Basic Science Building Auditorium
Host: Pei-Yong Shi, Professor, BMB

Thanks!

Pei-Yong

ITINERARY

**Xi Zhou, Professor and Deputy Director
Wuhan Institute of Virology
Chinese Academy of Sciences
China**

Contact Information: **Amber Teschendorf**
(409) 747-8600 (office)
[[HYPERLINK "mailto:antesche@utmb.edu"](mailto:antesche@utmb.edu)]

Pei-Yong Shi, PhD
Professor
Biochemistry and Molecular Biology
Cell (b)(6)

Friday, October 06, 2017

11:30 a.m. arrival	Pick up from Houston and arrive in Galveston Hongjie Xia
11:30 a.m. – 12:45 p.m.	LUNCH w/Students and Postdocs <u>Meet in 5.138 Medical Research Building</u>
1:00 p.m. – 2:00 p.m.	SEMINAR 2.212 Basic Science Auditorium “Antiviral RNAi Immunity from Insects to Humans”
2:00 p.m. – 2:25 p.m.	Saravanan Thangamani Associate Professor, Pathology 3.118C Keiller Building Ext: 72412
2:30 p.m. – 2:55 p.m.	Grant Hughes Assistant Professor, Pathology Ext: 29713

Please escort Xi Zhou to the next appointment. Thank you!

3:00 p.m. – 3:25 p.m.

James LeDuc
Professor, Microbiology and Immunology
6.200C Galveston National Laboratory
Ext: 66500

3:30 p.m. – 3:55 p.m.

Ricardo Rajsbaum, PhD
Assistant Professor, Microbiology and Immunology
4.142I Medical Research Building
Ext: 24917

4:00 p.m. – 4:25 p.m.

Andrew Routh, PhD
Assistant Professor, Biochemistry and Molecular Biology
6.140 Medical Research Building
Ext: 23663

4:30 p.m. – 4:55 p.m.

Shelton Bradrick, PhD
Assistant Professor, Biochemistry and Molecular Biology
5.138F Medical Research Building
Ext: 22749

5:00 p.m. – 5:45 p.m.

Round Table with Shi Lab
Meet in 5.138 Medical Research Building

6:00 p.m. – 6:30 p.m.

Pei-Yong Shi
5.104A Medical Research Building

7:00 p.m.

DINNER
TBD

Please escort Xi Zhou to the next appointment. Thank you!

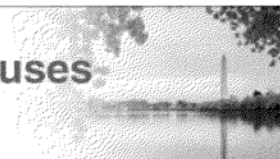
***Xi Zhou,
Professor and Deputy Director
Wuhan Institute of Virology,
Chinese Academy of Sciences
China***

ALL INTERESTED PERSONS WELCOME

HOSTED BY: Pei Yong Shi



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Delegate List

First Name	Last Name	Institute/Company	Country
Remi	Adenika	Bio-Techne	United States
Sylvie	Alonso	National University of Singapore	Singapore
Gaya	Amarasinghe	Washington University in St Louis	United States
Jing	An	Chinese Capital Medical University	China
Samita	Andreansky	University of Miami	United States
Kevin	Arien	Institute of Tropical Medicine	Belgium
Colm	Atkins	UTMB	United States
Kris	Azarm	Icahn School of Medicine at Mount Sinai	United States
Yu	Bai	Institute of Microbiology, CAS	China
Dan	Barouch	Ragon Institute	United States
Camille	Baudesson	Inserm U955 IMRB EQUIPE 18	France
Jean	Bernatchez	University of California, San Diego	United States
Amar	Bhagwat	University of Pittsburgh	United States
Christopher	Broder	Uniformed Services University	United States
Siddappa	Byrareddy	UNMC	United States
Jean	Carr	LECOM-Seton Hill	United States
Lin	Chang-Chi	Institute of preventive medicine national defense medical center	Taiwan
Hui	Chen	Chinese Capital Medical University	China
Jidang	Chen	College of Veterinary Medicine, University of Minnesota	United States
Yichen	Cheng	Florida State University	United States
Sara	Cherry	University of Pennsylvania	United States
Carolyn	Coyne	University of Pittsburgh	United States
Jim	Crowe	Vanderbilt University School of Medicine	United States
Lianpan	Dai	Institute of Zoology, Chinese Academy of Science	China
Peter	Daszak	EcoHealth Alliance, USA	United States
Edgar	Davidson	Integral Molecular	United States
Brian	Dawes	University of Texas Medical Branch	United States
Andrea	De Biase	Bio-Techne	United States
Kari	Debbink	NIH/NIAID	United States
Michael	Diamond	Washington University School of Medicine	United States
Qiang	Ding	Princeton University	United States
Ron	Diskin	Weizmann Institute of Science	Israel
Benjamin	Doranz	Integral Molecular	United States
Florian	Douam	Princeton University	United States
Stuart	Dowall	Public Health England	United Kingdom
Marlene	Dreux	CIRI; Université de Lyon; Inserm U1111	France
Natasha	Durham	Tufts University	United States
Vincent	Dussupt	WRAIR/MHRP	United States
Sean	Ekins	Collaborations Pharmaceuticals, Inc.	United States
Jonathan	Epstein	EcoHealth Alliance	United States
Suzanne	Epstein	FDA/CBER	United States
Noam	Erez	IIBR	Israel
Min	Fang	Institute of Microbiology, Chinese Academy of Sciences	China
Anthony S.	Fauci	NIAID	United States
David	Finkel	Bio-Techne	United States
Krystal	Fontaine	The J. David Gladstone Institutes	United States
Christian	Forst	Icahn School of Medicine at Mount Sinai	United States
Julie	Fox	Washington University	United States
Emily	Gallichotte	University of North Carolina at Chapel Hill	United States

George Fu	Gao	China CDC	China
Adolfo	Garcia-Sastre	Icahn School of Medicine at Mount Sinai	United States
Robert	Garry	New Orleans	United States
Nitika	Gaurav	Kusuma School of Biological Sciences, IIT Delhi	India
Hana	Golding	FDA/CBER	United States
Lakshmi	Goyal	Cell Press	United States
Lisa	Gralinski	University of North Carolina at Chapel Hill	United States
Nathan	Grubaugh		United States
Sam	Halpern	Yap Films Inc.	Canada
Sara	Hamilton	Cell Press	United States
Gabriel	Harp	Cell Press	United States
Kathryn	Hastie	The Scripps Research Institute	United States
Andrew	Hastings	Yale University	United States
Eneida	Hatcher	NCBI, NIH/Computercraft	United States
John	Howe	Merck & Co.	United States
Shie-Laing	Hsieh	Genomics Research Center, Academia Sinica	Taiwan
Akiko	Iwasaki	Yale School of Medicine	United States
Brett	Jagger	Washington University in St. Louis	United States
Sander	Jansen	KU Leuven	Belgium
Leslie	Johnson	MacroGenics, Inc.	United States
Nicholas	Johnson	Animal and Plant Health Agency	United Kingdom
Kellie	Jurado	Yale University	United States
Raj	Kalkeri	Southern Research	United States
Abraham	Kandathil	Johns Hopkins School of Medicine	United States
Masaru	Kanekiyo	Vaccine Research Center, NIAID, NIH	United States
Uladimir	Karniyuchuk	University of Saskatchewan	Canada
John	Kash	NIAID/NIH	United States
Yoshihiro	Kawaoka	University of Wisconsin	United States
Krishna Mohan	Ketha	US Food and Drug Administration	United States
Surender	Khurana	FDA/CBER	United States
Martina	Kosikova	FDA	United States
Shelly	Krebs	Military HIV Research Program/Walter Reed Army Institute of Research	United States
Veronica	Krenn	IMBA-Institut für Molekulare Biotechnologie GmbH	Austria
Lisa	Kronstad	Stanford University	United States
Stefanie	Krumm	King's College London	United Kingdom
Upasana	Kulkarni	University of Michigan	United States
Jason	Ladner	USAMRIID	United States
Eric	Laing	Uniformed Services University	United States
Seema	Lakdawala	University of Pittsburgh	United States
Gloria	Larson	University of Wisconsin-Madison	United States
Emily	Lee	FSU	United States
Valerie	Le Sage	University of Pittsburgh	United States
Nicholas	Lennemann	University of Pittsburgh	United States
Sivan	Leviyang	Georgetown University	United States
Hongying	Li	EcoHealth Alliance	United States
Xing	Li	CBER/FDA	United States
Hsiao-Han	Lin	Institute of Biotechnology, National Tsing Hua University	Taiwan
Shih-Chao	Lin	George Mason University	United States
Wan-Wan	Lin	National Taiwan University	Taiwan
Anuradha	Lingappa	Prosetta Biosciences, Inc.	United States
Vishwanath	Lingappa	Prosetta Biosciences, Inc.	United States
Shan-Lu	Liu	The Ohio State University	United States
Sheemei	Lok	Duke-NUS Graduate Medical School	Singapore
Jeremy	Luban	University of Massachusetts	United States
Min-Hua	Luo	Wuhan Institute of Virology, CAS	China
Hinh	Ly	University of Minnesota	United States
Shuja	Malik	King Abdullah International Medical Research Center	Saudi Arabia
Caleb	Marceau	Rocky Mountain Lab/NIH	United States

Christina	Mayer	ABL	United States
Maria Angelica	Medina	Florida State University	United States
Andrew	Mehle	University of Wisconsin Madison	United States
Prathibha	Mehta	Cell Press	India
Vineet	Menachery	University of Texas Medical Branch-Galveston	United States
Stefan	Metz	University of North Carolina	United States
Anna	Mielech	USAMRIID	United States
Jessica	Miles	Cell Press	United States
Juan Alberto	Mondotte	Institut Pasteur	France
Kaitlyn	Morabito	Medical Science & Computing	United States
Gonzalo	Moratorio	Pasteur Institute	France
Luciano	Moreira	Centro de Pesquisas René Rachou/CPqRR, Brazil	Brazil
Marie-Claire	Morley	Cell Press	United Kingdom
Summer	Mullis	Batelle National Biodefense Institute	United States
Teluguakula	Narasaraju	Oklahoma State University	United States
Sri Devi	Narasimhan	Cell Press	United States
Johan	Neyts	Rega Institute for Medical Research	Belgium
Rana	Nikzad	Baylor College of Medicine	United States
Erica	Ollmann Saphire	The Scripps Research Institute,	United States
Kristie	Oxford	Pacific Northwest National Laboratory	United States
Gustavos	Palacios	USAMRIID Center for Genome Sciences, USA	United States
Nir	Paran	IIBR	Israel
Nonia	Pariante	Nature Microbiology	United Kingdom
Michael	Parker	BEI Resources	United States
Adrian	Paskey	USUHS	United States
Ranawaka A P M	Perera	The University of Hong Kong.	Hong Kong
Ewan	Plant	Food and Drug Administration (FDA)	United States
Michelle	Pleet	George Mason University	United States
Simon	Pollett	WRAIR Viral Diseases Branch	United States
Richard	Preston		United States
Lindsey	Pujanandez	Science Translational Medicine	United States
Krista	Queen	CDC	United States
Kendra	Quicke	Emory University	United States
Peter	Radvak	FDA	United States
Jyoti	Rana	International Centre for Genetic Engineering and Biotechnology	Italy
Sujatha	Rashid	BEI Resources	United States
Jennifer	Rudd	Oklahoma State University	United States
Wiriya	Rutvisuttinunt	Cherokee Nation Technology Solutions	United States
Mehmet	Sahin	University of Basel - Experimental Virology Lab	Switzerland
Claudia	Sanchez San Martin	UCSF	United States
Ziv	Sandalon	ABL, Inc.	United States
Abu	Sayed	USDA APHIS VS NIES	United States
Aaron	Schmidt	Harvard Medical School and Boston Children's Hospital	United States
Kavitha	Scranton	Cell Press	United States
Jim	Secretario	Cell Press	United States
Heema	Sharma	NIH	United States
Guoli	Shi	HIV Dynamics and Replication Program Center for Cancer Research National Cancer Institute	United States
Yi	Shi	Institute of Microbiology, Chinese Academy of Sciences	China
Zheng-Li	Shi	Wuhan Institute of Virology, Chinese Academy of Sciences	China
Jessica	Shifflett	BEI Resources	United States
Veronica	Soloveva		United States
Hao	Song	Institute of Zoology, Chinese Academy of Sciences	China
David	Spiro	Fogarty International Center	United States
Kevin	Spurgers	Emergent Biosolutions	United States
Ashley	St John	Duke-NUS Medical School	Singapore
Julie	Stacey	Cell Press	United States
Angela	Stoyanovitch	Southern Research	United States

Nancy J.	Sullivan	National Institutes of Health	United States
Xiaoming	Sun	Ragon institute of MGH, MIT and Harvard	United States
Mehul	Suthar	Emory University	United States
Qiyi	Tang	Howard University	United States
Clare	Thomas	Nature	United Kingdom
Daniel	Todt	Twincore	Germany
Sakshi	Tomar	Gladstone Institutes	United States
Samantha	Townsley	WRAIR	United States
Jean-Claude	Twizere	University of Liege	Belgium
Ryuta	Uraki	Yale University	United States
Jandouwe	Villinger	International Centre of Insect Physiology and Ecology (icipe)	Kenya
Kathie	Walters	Institute for Systems Biology	United States
Jun	Wang	University of Arizona	United States
Linfa	Wang	Duke-NUS Graduate Medical School	Singapore
Peigang	Wang	Chinese Capital Medical University	China
Chih-Jen	Wei	Sanofi	United States
Carolyn	Wilson	FDA/CBER	United States
Joyce	Wong	Stanford University	United States
Guoping	Wu	Bio-Techne	United States
Yan	Wu	Institute of Microbiology, Chinese Academy of Sciences	China
Linda	Wyatt	National Institutes of Health	United States
Hang	Xie	FDA	United States
Yin-Ting	Yeh	The Pennsylvania State University	United States
Cyril Chik-Yan	Yip	Queen Mary Hospital	Hong Kong
Kyle	Young	BEI Resources	United States
Hsu	Yu Lin	Institute of preventive medicine national defense medical center	Taiwan
Kate	Zeigler	Henry Jackson Foundation	United States
Aihua	Zheng	Institute of Zoology, Chinese Academy of Science	China
Peng	Zhou	Wuhan Institute of Virology, CAS	China
Xi	Zhou	Wuhan University, College of Life Sciences	China
Matthew	Zimmerman	Emory Vaccine Center	United States

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Monday, October 9, 2017 2:48 PM
To: LeDuc, James W.; Shi, Pei yong; 'David Franz'
Cc: Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Thank you!
Attachments: Galveston Meeting Invitation to Chinese_2.docx

Greetings,

I resurrected the thread re the invitation letter for the Chinese delegation and attached a new draft of the invitation letter. Please look it over. Also, Pei-yong, will this letter be sufficient for visa and internal approval purposes?

I am happy to send it out to the Chinese participants individually asap (ccing Jim and Zhiming) but I probably need to send it to Zhiming before it goes out since it says that participants should contact him about flight arrangements. Jim do you want to add GNL letterhead on the header?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 31, 2017 4:10 PM
To: Lowenthal, Micah; Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mloventh@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,
It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.
Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.
I understand if you're too occupied with other matters to give this attention right now.
Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,

Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

Sent: Wednesday, August 09, 2017 10:25 PM

To: Rusek, Benjamin <BRusek@nas.edu>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>

Subject: Re: RE: RE: RE: Re: Thank you!

Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for conbating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Thank you!
>Importance: High
>
>Deare Benjamin,
>
>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>
>Regards
>
>Zhiming
>
>
>
>
>
>
>>Greetings Zhiming,
>>
>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>
>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>
>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim
>>is traveling the week before) January 8, 2018 January 15, 2018 January
>>22, 2018
>>
>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.
>>
>>Kind regards,
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>

>>-----Original Message-----

>>From: Rusek, Benjamin

>>Sent: Wednesday, June 28, 2017 4:16 PM

>>To: 'Yuan Zhiming'; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: RE: RE: Re: Thank you!

>>

>>Greetings Zhiming,

>>

>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>>

>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>>

>>Kind regards,

>>

>>Ben

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iiov.cn]

>>Sent: Monday, June 26, 2017 3:19 AM

>>To: Rusek, Benjamin; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: Re: RE: Re: Thank you!

>>Importance: High

>>

>>Dear Rusek,

>>

>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosaftey, biosecurity and bioethics among publics, academics, enterprners.

>>

>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>2) Set up a scientific cooperation working group and identify the main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.

>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>

>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>

>>Regards

>>

>>Yuan Zhiming

>>

>>

>>

>>

>>

>>

>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>

>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>

>>>Kind regards,

>>>

>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

>>>

>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

>>>

>>>Dear All friends

>>>

>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previligid scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official coopeation between our
>>>institute and Gaveston laboratory. I hope this meeting will be a

>>>milestone for futher Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
>>>memory i
>> n your profession.
>>>
>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.
>>>
>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>>
>>>Regards to all.
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>
>>>>>
>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>>
>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.
>>>>>
>>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe
each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and
particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our
future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to
continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal
meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have
planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.
>>>>>
>>>>>Best regards, Dave
>>>>>
>>>>>David R. Franz DVM, Ph.D
>>>>>
>>>>>(b)(6)
>>>>>
>>>>>
>>>>>
>>>>>
>>>>>
>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>>
>>>>> Dear Zhiming,
>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) 6376

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
Policy and Global Affairs

500 Fifth Street, NW
Washington, DC 20001 USA
Phone: 001.202.334.3975
Fax: 001.202.334.1730
E-mail: brusek@nas.edu

October 9, 2017

[Will send individual letter via email to this list:]

LIU LONGDING

Kunming Institute of Medical Biology

(b)(6)

ZHANG YUN [or is it Hu Yunzhang?]

Kunming Institute of Medical Biology

[need email]

BU ZHIGAO

Harbin Veterinary Research Institute

buzhigao@caas.cn

WU DONGLAI [Should we include Donglai as well?]

Harbin Veterinary Research Institute

dlwu@hvri.ac.cn

CHEN XINWEN

Wuhan Institute of Virology

chenxl@wh.iov.cn

YUAN ZHIMING

Wuhan Institute of Virology

yzm@wh.iov.cn

SHI ZHENGLI

Wuhan Institute of Virology

zlshi@wh.iov.cn

QIN CHENGFENG

Academy of Military Medical Sciences

(b)(6)

CHENG CAO

Academy of Military Medical Sciences

(b)(6)

GAO FU

Chinese Center for Disease Control and Prevention

gaof@im.ac.cn

LIANG MIFANG

Chinese Center for Disease Control and Prevention

mifangl@vip.sina.com

SHI YIGONG

Tsinghua University

[need email]

ZHANG YAPING, Vice President

Chinese Academy of Sciences

[need email]

SUN HUI, Director of department, International Cooperation bureau

Chinese Academy of Sciences, sunhui@cashq.ac.cn

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pgs

Dear XX XXX:

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting is being convened by the U.S. National Academies of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas, USA.

For several years, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. See summary report [here](#). We are pleased that this fruitful dialogue will continue in 2018 at a meeting in Galveston, Texas at the GNL on January 16-18, 2018. Your participation is essential to help the group work through details of future collaboration between institutes and experts in the United States and institutes and experts in China, and other conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both of our countries.

The topics for this meeting will center on specific high biocontainment “operational” issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting “well-documented” studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

A more detailed agenda will be offered in the coming weeks. Zhiming Yuan, Director, Wuhan Institute of Virology, CAS (yzm@wh.iov.cn), who is leading the Chinese delegation, will contact you about your flight arrangements for the meeting. The group will stay at the Hotel Galvez (www.hotelgalvez.com) and meet at the GNL. NAS and the GNL will provide you with local transportation, accommodation and meals for the duration of the meeting. Other senior members of the delegation will include, Gao Fu, Deputy Director of the Chinese Center for Disease Control and Prevention and Shi Yigong, Professor, Tsinghua University.

Because your participation is central to our joint efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA

James Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

From: Shi, Pei yong
Sent: Monday, October 9, 2017 3:31 PM
To: Rusek, Benjamin; LeDuc, James W.; 'David Franz'
Cc: Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!
Attachments: Galveston Meeting Invitation to Chinese_Oct 9 2017.docx

Hi Ben,

Thanks for the invitation letter. Please see my minor edits. We could ask Zhiming to take a final look if any extra wordings are needed for visa application.

As for attendants, Jim and I hosted Dr. Xi Zhou who visited UTMB last Friday. Xi is currently the deputy director of State Key Laboratory of Virology (the highest level of state-sponsored center of excellence in virology). His group recently demonstrated, for the first time, RNAi as antiviral immunity in mammals (very exciting discovery). He is expected to step up as the deputy director of Wuhan Institute of Virology next year. Xi expressed great interest in attending the January meeting. If budget permits, I would suggest to add him to the invited list.

Xi Zhou
Professor and Deputy Director of State Key Laboratory of Virology Wuhan Institute of Virology
Email: zhouxi@wh.iov.cn

Thanks and best,
Pei-Yong

Pei-Yong Shi, Ph.D.
I.H. Kempner Professor of Human Genetics Vice Chair for Innovation and Commercialization Department of Biochemistry & Molecular Biology University of Texas Medical Branch Galveston, Texas 77555
Phone: 409-772-6370
Email: peshi@utmb.edu
<http://www.hbcg.utmb.edu/faculty/shi.asp>

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, October 09, 2017 2:48 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!
Importance: High

Greetings,

I resurrected the thread re the invitation letter for the Chinese delegation and attached a new draft of the invitation letter. Please look it over. Also, Pei-yong, will this letter be sufficient for visa and internal approval purposes?

I am happy to send it out to the Chinese participants individually asap (ccing Jim and Zhiming) but I probably need to send it to Zhiming before it goes out since it says that participants should contact him about flight arrangements. Jim do you want to add GNL letterhead on the header?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 31, 2017 4:10 PM
To: Lowenthal, Micah; Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mloventh@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,

It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.

Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.

I understand if you're too occupied with other matters to give this attention right now.

Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]

Sent: Thursday, August 24, 2017 7:57 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>

Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>

Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]

Sent: Wednesday, August 16, 2017 12:17 PM

To: Shi, Pei yong; Rusek, Benjamin

Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>
Subject: Re: RE: RE: RE: Re: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Re: Thank you!
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>Deare Benjamin,
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>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
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>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.
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>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Rusek, Benjamin
>>Sent: Wednesday, June 28, 2017 4:16 PM
>>To: 'Yuan Zhiming'; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: RE: RE: Re: Thank you!
>>
>>Greetings Zhiming,
>>
>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
>>
>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>>
>>Kind regards,
>>
>>Ben
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Monday, June 26, 2017 3:19 AM
>>To: Rusek, Benjamin; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: Re: RE: Re: Thank you!
>>Importance: High
>>
>>Dear Rusek,
>>
>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.

>>
>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

- >>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
- >>2) Set up a scientific cooperation working group and identify the main
>>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
- >>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.
- >>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>
>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
>>
>>Regards
>>
>>Yuan Zhiming
>>
>>
>>
>>
>>
>>
>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.
>>>Work to form an official partnership via a memorandum of
>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-
to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
>>>
>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding
a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for
the meeting (possible topics for discussion are listed in the document).
>>>
>>>Kind regards,
>>>
>>>Benjamin Rusek
>>>The U.S. National Academy of Sciences
>>>1-202-334-3975
>>>
>>>-----Original Message-----
>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Thursday, May 25, 2017 11:34 PM
>>>To: David Franz
>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>>zhanghan; chenxw
>>>Subject: Re: Re: Thank you!
>>>
>>>Dear All friends
>>>
>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previlaged scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official coopeation between our
>>>institute and Gaveston laboratory. I hope this meeting will be a
>>>milestone for futher Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
>>>memory i
>> n your profession.
>>>
>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.
>>>
>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>>
>>>Regards to all.

>>>

>>>Zhiming

>>>

>>>

>>>

>>>

>>>

>>>>

>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>

>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>

>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>

>>>>Best regards, Dave

>>>>

>>>>David R. Franz DVM, Ph.D

>>>>

>>>(b)(6)

>>>

>>>

>>>>

>>>>

>>>>

>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>

>>>> Dear Zhiming,

>>>>

>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>

>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>

>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway

in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m)

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
Policy and Global Affairs

500 Fifth Street, NW
Washington, DC 20001 USA
Phone: 001.202.334.3975
Fax: 001.202.334.1730
E-mail: brusek@nas.edu

October 9, 2017

[Will send individual letter via email to this list:]

LIU LONGDING

Kunming Institute of Medical Biology

(b)(6)

ZHANG YUN [or is it Hu Yunzhang?]

Kunming Institute of Medical Biology

[need email]

BU ZHIGAO

Harbin Veterinary Research Institute

buzhigao@caas.cn

WU DONGLAI [Should we include Donglai as well?]

Harbin Veterinary Research Institute

dlwu@hvri.ac.cn

CHEN XINWEN

Wuhan Institute of Virology

chenxl@wh.iov.cn

YUAN ZHIMING

Wuhan Institute of Virology

yzm@wh.iov.cn

SHI ZHENGLI

Wuhan Institute of Virology

zshi@wh.iov.cn

QIN CHENG FENG

Academy of Military Medical Sciences

(b)(6)

CHENG CAO

Academy of Military Medical Sciences

(b)(6)

GAO FU

Chinese Center for Disease Control and Prevention

gaof@im.ac.cn

LIANG MIFANG

Chinese Center for Disease Control and Prevention

mifangl@vip.sina.com

SHI YIGONG

Tsinghua University

[need email]

ZHANG YAPING, Vice President

Chinese Academy of Sciences

[need email]

SUN HUI, Director of department, International Cooperation bureau

Chinese Academy of Sciences, sunhui@cashq.ac.cn

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

Dear XX XXX:

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting is being convened by the U.S. National Academies of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas, USA.

For several years, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. See summary report [here](#). We are pleased that this fruitful dialogue will continue in 2018 at a meeting in Galveston, Texas at the GNL on January 16-18, 2018. Your participation is essential to help the group work through details of future collaboration between institutes and experts in the United States and institutes and experts in China, and other conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both of our countries.

The topics for this meeting will center on specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff
- Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

A more detailed agenda will be offered in the coming weeks. Zhiming Yuan, [Director of BSL-4](#), Wuhan Institute of Virology, CAS (yzm@wh.iov.cn), who is leading the Chinese delegation, will contact you about your flight arrangements for the meeting. The group will stay at the Hotel Galvez (www.hotelgalvez.com) and meet at the GNL. NAS and the GNL will provide you with local transportation, accommodation and meals for the duration of the meeting. Other senior members of the delegation will include, Gao Fu, [Director of the Chinese Center for Disease Control and Prevention](#) and Shi Yigong, [Professor and Vice President](#), Tsinghua University.

Because your participation is central to our joint efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA

James Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

Commented [SPy1]: Zhiming is not the director of Wuhan Institute of Virology

Deleted: Deputy

From: LeDuc, James W.
Sent: Monday, October 9, 2017 4:27 PM
To: Benjamin Rusek (BRusek@nas.edu); Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Lowenthal, Micah
Cc: Holubar, Connie J.; Ksiazek, Thomas G.
Subject: FW: RE: RE: RE: Thank you!
Attachments: Galveston Meeting Invitation to Chinese_Oct 9 2017.docx

Ben and others,

I think the letter is fine; I made a comment and text change on the point about treating patients in BSL4. I think we should not encourage treatment of patients within the biocontainment lab, but rather create dedicated multi-use space that can be isolated and used for seriously ill patients as needed. We can arrange a session on this and include Colleen Craft or another physician that has experience in managing such patients in the US, and if time permits, we might visit our clinical containment rooms that are being built to manage such cases. We also recently made a video of a panel discussion on the response to the Dallas Ebola case that we might show at a dinner or something. We haven't yet edited it.

I too had the chance to meet with Xi Zhou and he clearly is a rising star within the Chinese virology community. I would urge us to try to include him if possible. He is doing some very elegant work that will be of interest to the group.

It would be good if we could align names of each Chinese participant with their topics/areas of research interest so that we can identify US side participants to stimulate collaborations.

Thanks, Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

-----Original Message-----

From: Shi, Pei yong
Sent: Monday, October 09, 2017 3:31 PM
To: Rusek, Benjamin <BRusek@nas.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Thank you!

Hi Ben,

Thanks for the invitation letter. Please see my minor edits. We could ask Zhiming to take a final look if any extra wordings are needed for visa application.

As for attendants, Jim and I hosted Dr. Xi Zhou who visited UTMB last Friday. Xi is currently the deputy director of State Key Laboratory of Virology (the highest level of state-sponsored center of excellence in virology). His group recently demonstrated, for the first time, RNAi as antiviral immunity in mammals (very exciting discovery). He is expected to step up as the deputy director of Wuhan Institute of Virology next year. Xi expressed great interest in attending the January meeting. If budget permits, I would suggest to add him to the invited list.

Xi Zhou

Professor and Deputy Director of State Key Laboratory of Virology Wuhan Institute of Virology

Email: zhouxi@wh.iov.cn

Thanks and best,
Pei-Yong

Pei-Yong Shi, Ph.D.

I.H. Kempner Professor of Human Genetics Vice Chair for Innovation and Commercialization Department of Biochemistry & Molecular Biology University of Texas Medical Branch Galveston, Texas 77555

Phone: 409-772-6370

Email: peshi@utmb.edu

<http://www.hbcg.utmb.edu/faculty/shi.asp>

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]

Sent: Monday, October 09, 2017 2:48 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>

Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>

Subject: RE: RE: RE: RE: Thank you!

Importance: High

Greetings,

I resurrected the thread re the invitation letter for the Chinese delegation and attached a new draft of the invitation letter. Please look it over. Also, Pei-yong, will this letter be sufficient for visa and internal approval purposes?

I am happy to send it out to the Chinese participants individually asap (ccing Jim and Zhiming) but I probably need to send it to Zhiming before it goes out since it says that participants should contact him about flight arrangements. Jim do you want to add GNL letterhead on the header?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 31, 2017 4:10 PM
To: Lowenthal, Micah; Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mloventh@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrf Franz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,
It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.
Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.
I understand if you're too occupied with other matters to give this attention right now.
Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrf Franz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>
Subject: Re: RE: RE: RE: Re: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University

6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Re: Thank you!
>Importance: High
>
>Deare Benjamin,
>
>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>
>Regards
>
>Zhiming
>
>
>

>
>
>
>>Greetings Zhiming,
>>
>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>
>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>
>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim
>>is traveling the week before) January 8, 2018 January 15, 2018 January
>>22, 2018
>>
>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from
you.
>>
>>Kind regards,
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Rusek, Benjamin
>>Sent: Wednesday, June 28, 2017 4:16 PM
>>To: 'Yuan Zhiming'; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: RE: RE: Re: Thank you!
>>
>>Greetings Zhiming,
>>
>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post
both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS
representative in Beijing about the Texas meeting?
>>
>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
>>
>>Kind regards,
>>
>>Ben
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Monday, June 26, 2017 3:19 AM
>>To: Rusek, Benjamin; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: Re: RE: Re: Thank you!

>>Importance: High

>>

>>Dear Rusek,

>>

>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafty, biosecurity and bioethics among publics, academics, enterprners.

>>

>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>2) Set up a scientific cooperation working group and identify the main

>>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.

>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>

>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>

>>Regards

>>

>>Yuan Zhiming

>>

>>

>>

>>

>>

>>

>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>

>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>

>>>Kind regards,

>>>

>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

>>>
>>>-----Original Message-----
>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Thursday, May 25, 2017 11:34 PM
>>>To: David Franz
>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>>zhanghan; chenxw
>>>Subject: Re: Re: Thank you!
>>>
>>>Dear All friends
>>>
>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previligid scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official coopeation between our
>>>institute and Gaveston laboratory. I hope this meeting will be a
>>>milestone for futher Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
>>>memory i
>> n your profession.
>>>
>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.
>>>
>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>>
>>>Regards to all.
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>
>>>>>
>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>>
>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.
>>>>

>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>

>>>>Best regards, Dave

>>>>

>>>>David R. Franz DVM, Ph.D

>>>>

>>>(b)(6)

>>>

>>>

>>>>

>>>>

>>>>

>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>> Director
>>>> Galveston National Laboratory
>>>> University of Texas Medical Branch Galveston, TX 77555-0610
>>>> (t) 409-266-6500
>>>> (f) 409-266-6810
>>>> (m) (b)(6)

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
Policy and Global Affairs

500 Fifth Street, NW
Washington, DC 20001 USA
Phone: 001.202.334.3975
Fax: 001.202.334.1730
E-mail: brusek@nas.edu

October 9, 2017

[Will send individual letter via email to this list:]

LIU LONGDING

Kunming Institute of Medical Biology

(b)(6)

ZHANG YUN [or is it Hu Yunzhang?]

Kunming Institute of Medical Biology

[need email]

BU ZHIGAO

Harbin Veterinary Research Institute

buzhigao@caas.cn

WU DONGLAI [Should we include Donglai as well?]

Harbin Veterinary Research Institute

dlwu@hvri.ac.cn

CHEN XINWEN

Wuhan Institute of Virology

chenxl@wh.iov.cn

YUAN ZHIMING

Wuhan Institute of Virology

yzm@wh.iov.cn

SHI ZHENGLI

Wuhan Institute of Virology

zshi@wh.iov.cn

QIN CHENG FENG

Academy of Military Medical Sciences

(b)(6)

CHENG CAO

Academy of Military Medical Sciences

(b)(6)

GAO FU

Chinese Center for Disease Control and Prevention

gaof@im.ac.cn

LIANG MIFANG

Chinese Center for Disease Control and Prevention

mifangl@vip.sina.com

SHI YIGONG

Tsinghua University

[need email]

ZHANG YAPING, Vice President

Chinese Academy of Sciences

[need email]

SUN HUI, Director of department, International Cooperation bureau

Chinese Academy of Sciences, sunhui@cashq.ac.cn

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

Dear XX XXX:

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting is being convened by the U.S. National Academies of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas, USA.

For several years, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. See summary report [here](#). We are pleased that this fruitful dialogue will continue in 2018 at a meeting in Galveston, Texas at the GNL on January 16-18, 2018. Your participation is essential to help the group work through details of future collaboration between institutes and experts in the United States and institutes and experts in China, and other conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both of our countries.

The topics for this meeting will center on specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities and training clinical staff [for care of patients infected with especially dangerous pathogens](#)
- Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

A more detailed agenda will be offered in the coming weeks. Zhiming Yuan, [Director of BSL-4](#), Wuhan Institute of Virology, CAS (yzm@wh.iov.cn), who is leading the Chinese delegation, will contact you about your flight arrangements for the meeting. The group will stay at the Hotel Galvez (www.hotelgalvez.com) and meet at the GNL. NAS and the GNL will provide you with local transportation, accommodation and meals for the duration of the meeting. Other senior members of the delegation will include, Gao Fu, [Director of the Chinese Center for Disease Control and Prevention](#) and Shi Yigong, [Professor and Vice President](#), Tsinghua University.

Because your participation is central to our joint efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA

James Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

Deleted: in BSL-4 space

Commented [LJW1]: I don't think we want to suggest that patients be cared for within a BSL4 facility. We can have a session on this with experienced clinicians who have treated Ebola patients in the US and maybe tour our new clinical containment rooms

Commented [SPy2]: Zhiming is not the director of Wuhan Institute of Virology

Deleted: Deputy

From: LeDuc, James W.
Sent: Monday, October 9, 2017 4:27 PM
To: Benjamin Rusek (BRusek@nas.edu); Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Lowenthal, Micah
Cc: Holubar, Connie J.; Ksiazek, Thomas G.
Subject: FW: RE: RE: RE: Thank you!
Attachments: Galveston Meeting Invitation to Chinese_Oct 9 2017.docx

Ben and others,

I think the letter is fine; I made a comment and text change on the point about treating patients in BSL4. I think we should not encourage treatment of patients within the biocontainment lab, but rather create dedicated multi-use space that can be isolated and used for seriously ill patients as needed. We can arrange a session on this and include Colleen Craft or another physician that has experience in managing such patients in the US, and if time permits, we might visit our clinical containment rooms that are being built to manage such cases. We also recently made a video of a panel discussion on the response to the Dallas Ebola case that we might show at a dinner or something. We haven't yet edited it.

I too had the chance to meet with Xi Zhou and he clearly is a rising star within the Chinese virology community. I would urge us to try to include him if possible. He is doing some very elegant work that will be of interest to the group.

It would be good if we could align names of each Chinese participant with their topics/areas of research interest so that we can identify US side participants to stimulate collaborations.

Thanks, Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

-----Original Message-----

From: Shi, Pei yong
Sent: Monday, October 09, 2017 3:31 PM
To: Rusek, Benjamin <BRusek@nas.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Thank you!

Hi Ben,

Thanks for the invitation letter. Please see my minor edits. We could ask Zhiming to take a final look if any extra wordings are needed for visa application.

As for attendants, Jim and I hosted Dr. Xi Zhou who visited UTMB last Friday. Xi is currently the deputy director of State Key Laboratory of Virology (the highest level of state-sponsored center of excellence in virology). His group recently demonstrated, for the first time, RNAi as antiviral immunity in mammals (very exciting discovery). He is expected to step up as the deputy director of Wuhan Institute of Virology next year. Xi expressed great interest in attending the January meeting. If budget permits, I would suggest to add him to the invited list.

Xi Zhou

Professor and Deputy Director of State Key Laboratory of Virology Wuhan Institute of Virology

Email: zhouxi@wh.iov.cn

Thanks and best,
Pei-Yong

Pei-Yong Shi, Ph.D.

I.H. Kempner Professor of Human Genetics Vice Chair for Innovation and Commercialization Department of Biochemistry & Molecular Biology University of Texas Medical Branch Galveston, Texas 77555

Phone: 409-772-6370

Email: peshi@utmb.edu

<http://www.hbcg.utmb.edu/faculty/shi.asp>

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]

Sent: Monday, October 09, 2017 2:48 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>

Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>

Subject: RE: RE: RE: RE: Thank you!

Importance: High

Greetings,

I resurrected the thread re the invitation letter for the Chinese delegation and attached a new draft of the invitation letter. Please look it over. Also, Pei-yong, will this letter be sufficient for visa and internal approval purposes?

I am happy to send it out to the Chinese participants individually asap (ccing Jim and Zhiming) but I probably need to send it to Zhiming before it goes out since it says that participants should contact him about flight arrangements. Jim do you want to add GNL letterhead on the header?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 31, 2017 4:10 PM
To: Lowenthal, Micah; Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mloventh@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrf Franz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,
It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.
Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.
I understand if you're too occupied with other matters to give this attention right now.
Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrf Franz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mloewenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to Mel yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>
Subject: Re: RE: RE: RE: Re: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University

6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for conbating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Re: Thank you!
>Importance: High
>
>Deare Benjamin,
>
>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>
>Regards
>
>Zhiming
>
>
>

>
>
>
>>Greetings Zhiming,
>>
>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>
>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>
>>November 13 (this week may be too early to get the MOU finalized and
>>for the Chinese group to obtain their visas, what do you think?)
>>December 11 (meeting would have to take place later in the week as Jim
>>is traveling the week before) January 8, 2018 January 15, 2018 January
>>22, 2018
>>
>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from
you.
>>
>>Kind regards,
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Rusek, Benjamin
>>Sent: Wednesday, June 28, 2017 4:16 PM
>>To: 'Yuan Zhiming'; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>Subject: RE: RE: Re: Thank you!
>>
>>Greetings Zhiming,
>>
>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post
both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS
representative in Beijing about the Texas meeting?
>>
>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
>>
>>Kind regards,
>>
>>Ben
>>
>>Benjamin Rusek
>>The U.S. National Academy of Sciences
>>1-202-334-3975
>>
>>-----Original Message-----
>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>Sent: Monday, June 26, 2017 3:19 AM
>>To: Rusek, Benjamin; David Franz
>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: Re: RE: Re: Thank you!

>>Importance: High

>>

>>Dear Rusek,

>>

>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.

>>

>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>2) Set up a scientific cooperation working group and identify the main

>>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurty and bioethics, the responsibility of two academies.

>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>

>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>

>>Regards

>>

>>Yuan Zhiming

>>

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>>

>>

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>>

>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>

>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>

>>>Kind regards,

>>>

>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

>>>
>>>-----Original Message-----
>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Thursday, May 25, 2017 11:34 PM
>>>To: David Franz
>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>>zhanghan; chenxw
>>>Subject: Re: Re: Thank you!
>>>
>>>Dear All friends
>>>
>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>and global health security. Without your help, we can not have this
>>>good communication chance for the scientists and we can not discuss
>>>the important public hearth affires with the previligid scientists
>>>from China and USA. During the meeting, the scientists, policymakers,
>>>advisors from China and USA exchange the great achievements in
>>>science and technology in related areas, discussed the new conception
>>>and new strategy for disease control, the roles of biosafety,
>>>biosecurity and bioethics in infectious disease control, and
>>>discussed for the possibility for future cooperation between the
>>>Chinese and American, especially the official coopeation between our
>>>institute and Gaveston laboratory. I hope this meeting will be a
>>>milestone for futher Sino-US cooperation on infectious disease
>>>control, and I hope your stay in Wuhan will be the most precious
>>>memory i
>> n your profession.
>>>
>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both
academies, letingthe top leaders understand the effectivness, practisibility and prospective of this meeting. And we
need to have a draft memorandum of understanding on collaborations between UTMB and the our institute,
quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest
meeting in USA.
>>>
>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>>
>>>Regards to all.
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>
>>>>>
>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would
welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>>
>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an
outstanding success.
>>>>

>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.

>>>>

>>>>Best regards, Dave

>>>>

>>>>David R. Franz DVM, Ph.D

>>>>

>>>>(b)(6)

>>>>

>>>>

>>>>

>>>>

>>>>

>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

>>>>>

>>>>> Dear Zhiming,

>>>>>

>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>

>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>

>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>

>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>

>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>> Director
>>>> Galveston National Laboratory
>>>> University of Texas Medical Branch Galveston, TX 77555-0610
>>>> (t) 409-266-6500
>>>> (f) 409-266-6810
>>>> (m) (b)(6)

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
Policy and Global Affairs

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Washington, DC 20001 USA
Phone: 001.202.334.3975
Fax: 001.202.334.1730
E-mail: brusek@nas.edu

October 9, 2017

[Will send individual letter via email to this list:]

LIU LONGDING

Kunming Institute of Medical Biology

(b)(6)

ZHANG YUN [or is it Hu Yunzhang?]

Kunming Institute of Medical Biology

[need email]

BU ZHIGAO

Harbin Veterinary Research Institute

buzhigao@caas.cn

WU DONGLAI [Should we include Donglai as well?]

Harbin Veterinary Research Institute

dlwu@hvri.ac.cn

CHEN XINWEN

Wuhan Institute of Virology

chenxl@wh.iov.cn

YUAN ZHIMING

Wuhan Institute of Virology

yzm@wh.iov.cn

SHI ZHENGLI

Wuhan Institute of Virology

zshi@wh.iov.cn

QIN CHENG FENG

Academy of Military Medical Sciences

(b)(6)

CHENG CAO

Academy of Military Medical Sciences

(b)(6)

GAO FU

Chinese Center for Disease Control and Prevention

gaof@im.ac.cn

LIANG MIFANG

Chinese Center for Disease Control and Prevention

mifangl@vip.sina.com

SHI YIGONG

Tsinghua University

[need email]

ZHANG YAPING, Vice President

Chinese Academy of Sciences

[need email]

SUN HUI, Director of department, International Cooperation bureau

Chinese Academy of Sciences, sunhui@cashq.ac.cn

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

Dear XX XXX:

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting is being convened by the U.S. National Academies of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas, USA.

For several years, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. See summary report [here](#). We are pleased that this fruitful dialogue will continue in 2018 at a meeting in Galveston, Texas at the GNL on January 16-18, 2018. Your participation is essential to help the group work through details of future collaboration between institutes and experts in the United States and institutes and experts in China, and other conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both of our countries.

The topics for this meeting will center on specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities and training clinical staff ~~for care of patients infected with especially dangerous pathogens~~
- Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combat emerging infections caused by viral agents requiring high-containment facilities

A more detailed agenda will be offered in the coming weeks. Zhiming Yuan, ~~Director of BSL-4~~, Wuhan Institute of Virology, CAS (yzm@wh.iov.cn), who is leading the Chinese delegation, will contact you about your flight arrangements for the meeting. The group will stay at the Hotel Galvez (www.hotelgalvez.com) and meet at the GNL. NAS and the GNL will provide you with local transportation, accommodation and meals for the duration of the meeting. Other senior members of the delegation will include, Gao Fu, ~~Director of the Chinese Center for Disease Control and Prevention~~ and Shi Yigong, ~~Professor and Vice President~~, Tsinghua University.

Because your participation is central to our joint efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA

James Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

Deleted: in BSL-4 space

Commented [LJW1]: I don't think we want to suggest that patients be cared for within a BSL4 facility. We can have a session on this with experienced clinicians who have treated Ebola patients in the US and maybe tour our new clinical containment rooms

Commented [SPy2]: Zhiming is not the director of Wuhan Institute of Virology

Deleted: Deputy

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Monday, October 9, 2017 4:58 PM
To: LeDuc, James W.; Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Lowenthal, Micah
Cc: Holubar, Connie J.; Ksiazek, Thomas G.
Subject: RE: RE: RE: RE: Thank you!

Thanks! I will send a revised letter with the edits (and with Xi Zhou instead of Wu Donglai on the invite list) tonight.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Monday, October 09, 2017 5:27 PM
To: Rusek, Benjamin; Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Lowenthal, Micah
Cc: Holubar, Connie J.; Ksiazek, Thomas G.
Subject: FW: RE: RE: RE: Thank you!

Ben and others,

I think the letter is fine; I made a comment and text change on the point about treating patients in BSL4. I think we should not encourage treatment of patients within the biocontainment lab, but rather create dedicated multi-use space that can be isolated and used for seriously ill patients as needed. We can arrange a session on this and include Colleen Craft or another physician that has experience in managing such patients in the US, and if time permits, we might visit our clinical containment rooms that are being built to manage such cases. We also recently made a video of a panel discussion on the response to the Dallas Ebola case that we might show at a dinner or something. We haven't yet edited it.

I too had the chance to meet with Xi Zhou and he clearly is a rising star within the Chinese virology community. I would urge us to try to include him if possible. He is doing some very elegant work that will be of interest to the group.

It would be good if we could align names of each Chinese participant with their topics/areas of research interest so that we can identify US side participants to stimulate collaborations.

Thanks, Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

-----Original Message-----

From: Shi, Pei yong
Sent: Monday, October 09, 2017 3:31 PM
To: Rusek, Benjamin <BRusek@nas.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Ben,

Thanks for the invitation letter. Please see my minor edits. We could ask Zhiming to take a final look if any extra wordings are needed for visa application.

As for attendants, Jim and I hosted Dr. Xi Zhou who visited UTMB last Friday. Xi is currently the deputy director of State Key Laboratory of Virology (the highest level of state-sponsored center of excellence in virology). His group recently demonstrated, for the first time, RNAi as antiviral immunity in mammals (very exciting discovery). He is expected to step up as the deputy director of Wuhan Institute of Virology next year. Xi expressed great interest in attending the January meeting. If budget permits, I would suggest to add him to the invited list.

Xi Zhou
Professor and Deputy Director of State Key Laboratory of Virology Wuhan Institute of Virology
Email: zhouxi@wh.iov.cn

Thanks and best,
Pei-Yong

Pei-Yong Shi, Ph.D.
I.H. Kempner Professor of Human Genetics Vice Chair for Innovation and Commercialization Department of Biochemistry & Molecular Biology University of Texas Medical Branch Galveston, Texas 77555
Phone: 409-772-6370
Email: peshi@utmb.edu
<https://na01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.hbcg.utmb.edu%2Ffaculty%2Fshi.asp&data=02%7C01%7Ccjholuba%40utmb.edu%7C623d9b768d84410f461908d50f60c337%7C7bef256d85db4526a72d31aea2546852%7C0%7C0%7C636431830635792294&sdata=s41F26v5a7SGYfRtn3zkBnBdZO0kkzoUO9oLRT%2Frl0M%3D&reserved=0>
0

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Monday, October 09, 2017 2:48 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Cc: Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!
Importance: High

Greetings,

I resurrected the thread re the invitation letter for the Chinese delegation and attached a new draft of the invitation letter. Please look it over. Also, Pei-yong, will this letter be sufficient for visa and internal approval purposes?

I am happy to send it out to the Chinese participants individually asap (ccing Jim and Zhiming) but I probably need to send it to Zhiming before it goes out since it says that participants should contact him about flight arrangements. Jim do you want to add GNL letterhead on the header?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 31, 2017 4:10 PM
To: Lowenthal, Micah; Rusek, Benjamin; Shi, Pei yong
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

Micah,

Thanks for the kind words and the draft letter of invitation. I review and it looks fine to me. I changed GNL to USA in the second paragraph since I think we are attempting to build stronger collaborations with multiple organizations, not just the GNL.

Perhaps Pei-Yong can confirm that we have identified the correct participants from the Chinese side.

Thanks, Jim

-----Original Message-----

From: Lowenthal, Micah [mailto:mloventh@nas.edu]
Sent: Thursday, August 31, 2017 2:08 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Rusek, Benjamin <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: RE: RE: RE: RE: Re: Thank you!

Jim,

It was good to see you quoted in the Daily News and to learn that GNL is okay. I hope that all of your employees are okay.

Attached is a draft invitation letter. I listed Ben for NAS, but I can sign or John Boright could do it, if we need someone higher up.

I understand if you're too occupied with other matters to give this attention right now.

Best,
Micah

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Thursday, August 24, 2017 9:42 AM
To: Rusek, Benjamin; Shi, Pei yong

Cc: 'David Franz'; Holubar, Connie J.; Lowenthal, Micah
Subject: RE: RE: RE: RE: Re: Thank you!

Ben,

Thanks for the update. Regarding the letter of invitation, I think that it should come from NAS. I can co-sign for the GNL as the local host, but given the stature of the folks invited, we need to keep the NAS prominently displayed as the official host.

We need to get a preliminary count of all participants so that we can reserve a block of hotel rooms and make arrangements for social events and local transportation. Can we shoot for mid-September for a first cut on attendees? We also will need to set up the financial arrangements.

Thanks, Jim

-----Original Message-----

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Thursday, August 24, 2017 7:57 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: 'David Franz' <davidrfranz@gmail.com>; Holubar, Connie J. <cjholuba@UTMB.EDU>; Lowenthal, Micah <mlowenth@nas.edu>
Subject: RE: RE: RE: RE: Re: Thank you!

Hi Jim and Pei-young,

Sorry for the delayed response. Your proposal to meet on Jan 16-18 and logistical schedule sound good to me.

So the Chinese participants we will invite are 1) Longding Liu and 2) Yunzhang from Kunming Institute of Medical Biology, 3) Zhigao Bu and 4) another senior person from the Harbin Veterinary Research Institute 5) Chen Xinwen 6) Yuan Zhiming and 7) Shi Zhengli from Wuhan Institute of Virology 8) Chengfeng Qin and 9) Cheng Cao from the Academy of Military Medical Sciences 10) Gao Fu and 11) Liang Mifang from CDC 12) Yigong Shi from Tsinghua University 13) Zhang Yaping and/or Sun Hui (Director of department, International Cooperation bureau), or another representative from CAS headquarter (we can let CAS decide). We may want to formally let CAS know that we are doing this, Diane Griffin, VP NAS has notified her counterpart at CAS about our meetings in the past.

NAS will work on a draft letter to use as a meeting/visa invitation for those listed above. We have contact info for everyone who was at the Wuhan meeting but will need info for the others. Pei-yong it would be good if you could reach out to George and Yigong informally to see if they are available in January.

Jim should the invitation come from GNL or from NAS or from both institutions? (Maybe both but with your signature and the signature of the director of NAS Policy and Global Affairs int programs?) However we structure the letter I am happy to send the invitations to the Chinese and American participants. We also need to consider which American participants from outside of Galveston to invite. Probably want to include the other CISAC members, Griffin, Hamburg and Palese.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: LeDuc, James W. [mailto:jwleduc@UTMB.EDU]
Sent: Wednesday, August 16, 2017 12:17 PM
To: Shi, Pei yong; Rusek, Benjamin
Cc: 'David Franz'; Holubar, Connie J.
Subject: RE: RE: RE: RE: Re: Thank you!

I think we have about decided on the week of 15 January 2018 for the meeting, correct? 15 Jan is a Monday, so if we use that as a travel day, we can have the actual meeting 16-18 (3 days, Tuesday-Thursday) with Friday the other travel day. Social activities might include a welcoming reception on Monday evening, informal dinner on Tuesday, major banquet on Wednesday evening and nothing on Thursday--dinner "on your own" to allow folks to explore a bit??? If the group is not too big, we might have something at my home, maybe on Tuesday evening--I haven't spoken to (b)(6) yet, so not certain!!!

Suggestions welcome! We will need to determine the number of folks requiring hotel rooms and meals so that we can reserve a block and start thinking about social activities.

Thanks, Jim

-----Original Message-----

From: Shi, Pei yong
Sent: Wednesday, August 16, 2017 9:50 AM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; 'David Franz' <davidrf Franz@gmail.com>
Subject: RE: RE: RE: RE: Re: Thank you!

Dear all,

As one of the action items from our last teleconference, I talked with Zhiming over phone. He fully supports the next meeting in Kunming. He will coordinate with the leaders in Kunming and let the Kunming team play the major role in organizing the event, but he will help whenever is needed.

Zhiming is also fully aligned with the invited participants from China. He particularly likes the idea of inviting Yigong Shi from Tsinghua because Yigong will influence the policy and political support for infectious disease in China.

My suggestion is that, once we have finalized the meeting date, we should send out invitations to the participants as early as possible, particularly to the three key individuals (Yaping Zhang, George Gao, and Yigong Shi). I will be happy to reach out to George and Yigong to seek their availability.

Best,
Pei-Yong

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Wednesday, August 09, 2017 10:25 PM
To: Rusek, Benjamin <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Ksiazek, Thomas G. <tgksiaze@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'chenxw' <chenxw@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>
Subject: Re: RE: RE: RE: Re: Thank you!
Importance: High

Dear all,

Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

I have some suggestion for the invited Chinese participants:

- 1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.
- 2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.
- 3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.
- 4) Gao Fu and Liang Mifang from CDC.
- 5) Yigong Shi from Tsinghua University
- 6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the offical approval and visa individually.

As to the objective of of the next GNL meeting, it is to quarantine the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.

-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.

Best regards

Zhiming

>
>Benjamin Rusek
>The U.S. National Academy of Sciences
>1-202-334-3975
>
>-----Original Message-----
>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>Sent: Sunday, July 23, 2017 9:50 PM
>To: Rusek, Benjamin
>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>Subject: Re: RE: RE: Thank you!
>Importance: High

>

>Deare Benjamin,

>

>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.

>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?

>

>Regards

>

>Zhiming

>

>

>

>

>

>

>>Greetings Zhiming,

>>

>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>>

>>What do you think about holding a 2-3 day meeting during one of the following weeks:

>>

>>November 13 (this week may be too early to get the MOU finalized and

>>for the Chinese group to obtain their visas, what do you think?)

>>December 11 (meeting would have to take place later in the week as Jim

>>is traveling the week before) January 8, 2018 January 15, 2018 January

>>22, 2018

>>

>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>>

>>Kind regards,

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Rusek, Benjamin

>>Sent: Wednesday, June 28, 2017 4:16 PM

>>To: 'Yuan Zhiming'; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: RE: RE: Re: Thank you!

>>

>>Greetings Zhiming,

>>

>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?

>>

>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.

>>

>>Kind regards,

>>

>>Ben

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Monday, June 26, 2017 3:19 AM

>>To: Rusek, Benjamin; David Franz

>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw

>>Subject: Re: RE: Re: Thank you!

>>Importance: High

>>

>>Dear Rusek,

>>

>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosafety, biosecurity and bioethics among publics, academics, enterprners.

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>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:

>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)

>>2) Set up a scientific cooperation working group and identify the main

>>players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurtly and bioethics, the responsibility of two academies.

>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.

>>

>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.

>>

>>Regards

>>

>>Yuan Zhiming

>>

>>

>>

>>

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>>

>>>

>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the

NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:

>>>1. Write a joint white paper outlining issues of mutual concern 2.

>>>Work to form an official partnership via a memorandum of

>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.

>>>

>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).

>>>

>>>Kind regards,

>>>

>>>Benjamin Rusek

>>>The U.S. National Academy of Sciences

>>>1-202-334-3975

>>>

>>>-----Original Message-----

>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>To: David Franz

>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;

>>>zhanghan; chenxw

>>>Subject: Re: Re: Thank you!

>>>

>>>Dear All friends

>>>

>>>Thanks you for your contributiion for the excellent 2nd China-US

>>>workshop on challenges of emerging infectious, laboratory biosafety

>>>and global health security. Without your help, we can not have this

>>>good communication chance for the scientists and we can not discuss

>>>the important public hearth affires with the previlaged scientists

>>>from China and USA. During the meeting, the scientists, policymakers,

>>>advisors from China and USA exchange the great achievements in

>>>science and technology in related areas, discussed the new conception

>>>and new strategy for disease control, the roles of biosafety,

>>>biosecurity and bioethics in infectious disease control, and

>>>discussed for the possibility for future cooperation between the

>>>Chinese and American, especially the official coopeation between our

>>>institute and Gaveston laboratory. I hope this meeting will be a

>>>milestone for futher Sino-US cooperation on infectious disease

>>>control, and I hope your stay in Wuhan will be the most precious

>>>memory i

>> n your profession.

>>>

>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher action for both academies, letingthe top leaders understand the effectiveness, practisibility and prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations between UTMB and the our institute, quarentteeing, ensuring the good start has a productive results. Hopefully we can sign this kind of memorandum in nest meeting in USA.

>>>

>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.

>>>
>>>Regards to all.
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>
>>>>
>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.
>>>>
>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.
>>>>
>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last week. I believe each of us came away with a similar very positive perspective regarding the meeting, the venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased that you invited so many young people-our future-and I enjoyed discussions with them during the week. As Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on your additional thoughts regarding collaborations after the formal meeting and they will be included in Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint future scientific work and policy discussions, important to all our citizens. We look forward to a meeting in Galveston and continued opportunities to work together.
>>>>
>>>>Best regards, Dave
>>>>
>>>>David R. Franz DVM, Ph.D
>>>>
>>>>(b)(6)
>>>>
>>>>
>>>>
>>>>
>>>>
>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>>
>>>>> Dear Zhiming,
>>>>>
>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.
>>>>>
>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!
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>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

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>>>>>

>>>>> With best wishes,

>>>>>

>>>>> Jim

>>>>>

>>>>> James W. Le Duc, Ph.D.

>>>>> Director

>>>>> Galveston National Laboratory

>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>> (t) 409-266-6500

>>>>> (f) 409-266-6810

>>>>> (m) (b)(6)

From: Yuan Zhiming <yzm@wh.iov.cn>
Sent: Tuesday, October 10, 2017 2:06 AM
To: Rusek, Benjamin
Cc: Shi, Pei yong;Ksiazek, Thomas G.;LeDuc, James W.;'zhanghan';'chenxw';'David Franz'
Subject: Re: Draft NAS GNL invitation letter

Dear Ben,

Thanks for your undated information concerning the coming CAS-NAS meeting. I have no further comment and hope to get your invitaion letter soon, and therefore we could apply the offical approval and visa.

I hope we could sign an agreement betweet WIV and UTMB for future cooperation on emergbing disease control.

Regards

Zhiming

If there is anything I can do, please let me know. >Hi Zhiming,

>

>Sorry for the delay. I have attached a draft invitation letter for your review. The first page incudes a list of the delegation members we discussed with one addition. The text includes details we think the Chinese delegation members will need to apply for their visas. Please let us know if you have comments or edits. I would be happy to send the final version out to each member of the Chinese Delegation on behalf of NAS after you approve the text.

>

>Kind regards,

>

>Ben

>

>Benjamin Rusek

>The U.S. National Academy of Sciences

>1-202-334-3975

>

>-----Original Message-----

>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>Sent: Sunday, August 27, 2017 8:28 PM

>To: Rusek, Benjamin

>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>Subject: Re: RE: RE: RE: RE: Thank you!

>

>Hi, again,

>

>Nice to have your feedback. I had a phone discussion with Peiyong about our concerns and the future activity and we all agree with your proposal. We are looking for your invitation letter and iniate the application precedure.

>

>Regards

>

>Zhiming

>

>

>

>

>>Hi Zhiming,

>>

>>Sorry for the delayed response. Your proposal sounds great. We will prepare invitation letters for the individual you list so each one can apply for official approval and their visa individually. We will send you the letter first to make sure it is ok. The topics look very good as well.

>>

>>Kind regards,

>>

>>Ben

>>

>>Benjamin Rusek

>>The U.S. National Academy of Sciences

>>1-202-334-3975

>>

>>

>>-----Original Message-----

>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]

>>Sent: Wednesday, August 09, 2017 11:25 PM

>>To: Rusek, Benjamin

>>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'

>>Subject: Re: RE: RE: RE: Thank you!

>>Importance: High

>>

>>Dear all,

>>

>>Thanks for US side kindly supports meals, local hotel accommodations and ground transportation for the Chinese group's stay in Galveston for the Sino-USA meeting on emerging disease control, which will be held in the week of January 15, 2018.

>>

>>I have some suggestion for the invited Chinese participants:

>>

>>1) We do not need to emphasize the participants from China's BSL-4 laboratorys, we invite the experts on emerging disease control and laboratory biosafety management.

>>2) We could invite Longding Liu and Yunzhang from Kunming Institute of Medical Biology, Zhigao Bu and another senior person from Harbin Veterinary Research Institute, Chen Xinwen, Yuan Zhiming and Shi Zhengli from Wuhan Institute of Virology.

>>3) We could invite Chengfeng Qin and Cheng Cao from the Academy of Military Medical Sciences.

>>4) Gao Fu and Liang Mifang from CDC.

>>5) Yigong Shi from Tsinghua University

>>6) Zhang Yaping and Sun Hui(Director of department, Internation Cooperation bureau), or another representative from CAS headquarter.

>>

>>I think it might be convenient for you send the invitation letter to the individual directedly and each one can apply the official approval and visa individually.

>>

>>
>>As to the objective of the next GNL meeting, it is to guarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.
>>
>>-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
>>
>>Best regards
>>
>>Zhiming
>>
>>
>>
>>
>>
>>>Benjamin Rusek
>>>The U.S. National Academy of Sciences
>>>1-202-334-3975
>>>
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>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Sunday, July 23, 2017 9:50 PM
>>>To: Rusek, Benjamin
>>>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>>>Subject: Re: RE: RE: Thank you!
>>>Importance: High
>>>
>>>Deare Benjamin,
>>>
>>>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>>>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>>>
>>>Regards
>>>
>>>Zhiming
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>>>
>>>>Greetings Zhiming,
>>>>

>>>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.

>>>>

>>>>What do you think about holding a 2-3 day meeting during one of the following weeks:

>>>>

>>>>November 13 (this week may be too early to get the MOU finalized and

>>>>for the Chinese group to obtain their visas, what do you think?)

>>>>December 11 (meeting would have to take place later in the week as

>>>>Jim is traveling the week before) January 8, 2018 January 15, 2018

>>>>January 22, 2018

>>>>

>>>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.

>>>>

>>>>Kind regards,

>>>>

>>>>Benjamin Rusek

>>>>The U.S. National Academy of Sciences

>>>>1-202-334-3975

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>>>>Sent: Wednesday, June 28, 2017 4:16 PM

>>>>To: 'Yuan Zhiming'; David Franz

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>>>>main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)

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>>>>>

>>>>>David R. Franz DVM, Ph.D

>>>>>

>>>>>(b)(6)

>>>>>

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>>>>>

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>>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

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>>>>>> Jim

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>>>>>> James W. Le Duc, Ph.D.

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>>>>>> (t) 409-266-6500
>>>>>> (f) 409-266-6810
>>>>>> (m) (b)(6)

From: Rusek, Benjamin [BRusek@nas.edu]
Sent: 10/10/2017 8:19:51 AM
To: 'Yuan Zhiming' [yzm@wh.iov.cn]
CC: Shi, Pei yong [peshi@UTMB.EDU]; Ksiazek, Thomas G. [tgksiaze@UTMB.EDU]; LeDuc, James W. [jwleduc@UTMB.EDU]; 'zhanghan' [zhanghan@wh.iov.cn]; 'chenxw' [chenxw@wh.iov.cn]; 'David Franz' [davidfranz@gmail.com]
Subject: RE: Draft NAS GNL invitation letter

Hi Zhiming,

Excellent. We will start sending these out, I will cc you on the invitations since the letter notes that "Zhiming Yuan...will contact you about your flight arrangements for the meeting."

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

-----Original Message-----

From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
Sent: Tuesday, October 10, 2017 3:06 AM
To: Rusek, Benjamin
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Importance: High

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>Hi, again,

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>Nice to have your feedback. I had a phone discussion with Peiyong about our concerns and the future activity and we all agree with your proposal. We are looking for your invitation letter and initiate the application procedure.
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>Regards
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>Zhiming
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>>Hi Zhiming,
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>>Dear all,
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>>4) Gao Fu and Liang Mifang from CDC.
>>5) Yigong Shi from Tsinghua University
>>6) Zhang Yaping and Sun Hui(Director of department, International Cooperation bureau), or another representative from CAS headquarter.
>>
>>I think it might be convenient for you send the invitation letter to the individual directly and each one can apply the official approval and visa individually.
>>
>>
>>As to the objective of the next GNL meeting, it is to guarantee the global health security through combining all efforts and the topics will focus on the emerging disease control and biosafety management.
>>
>>-New approaches and technologies for combating the emerging disease, -The role of high-containment facilities in identifying vector and host virus reservoirs and combating emerging infections; -An overall strategy and creating centers for effective high containment laboratory staff training -Creating and maintaining clinical care facilities in BSL-4 space and training clinical staff -Conducting "well-documented" studies under BSL-4 conditions including practical aspects of non-human primate experimentation in the BSL-4 space -Development and maintenance of best practices for long-term safe and productive BSL-4 operations -Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
>>
>>Best regards
>>
>>Zhiming

>>
>>
>>
>>
>>>
>>>Benjamin Rusek
>>>The U.S. National Academy of Sciences
>>>1-202-334-3975
>>>
>>>-----Original Message-----
>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>Sent: Sunday, July 23, 2017 9:50 PM
>>>To: Rusek, Benjamin
>>>Cc: 'Shi, Pei yong'; 'Tom Ksiazek'; 'JamesW. LeDuc'; 'zhanghan'; 'chenxw'; 'David Franz'
>>>Subject: Re: RE: RE: Thank you!
>>>Importance: High
>>>
>>>Deare Benjamin,
>>>
>>>Nice to hear from you and sorry for my delayed reply. Thanks for your suggestion for the 2-3 day meeting in Galveston, TX. Yes we need to determine the date as soon as possible, let us have enough time for applying the visa. I have no preference to your three suggested period.
>>>There is another issue that we have to consider, how many Chinese scientists you could invited and whether you have any candidates or not?
>>>
>>>Regards
>>>
>>>Zhiming
>>>
>>>
>>>
>>>
>>>
>>>>Greetings Zhiming,
>>>>
>>>>For planning purposes we thought it would be useful to discuss possible dates for the next meeting in Galveston, TX.
>>>>
>>>>What do you think about holding a 2-3 day meeting during one of the following weeks:
>>>>
>>>>November 13 (this week may be too early to get the MOU finalized and
>>>>for the Chinese group to obtain their visas, what do you think?)
>>>>December 11 (meeting would have to take place later in the week as
>>>>Jim is traveling the week before) January 8, 2018 January 15, 2018
>>>>January 22, 2018
>>>>
>>>>NAS can fund the local expenses for the meeting like you did for us in Wuhan. We look forward to hearing back from you.
>>>>
>>>>Kind regards,
>>>>
>>>>Benjamin Rusek
>>>>The U.S. National Academy of Sciences
>>>>1-202-334-3975
>>>>
>>>>-----Original Message-----
>>>>From: Rusek, Benjamin
>>>>Sent: Wednesday, June 28, 2017 4:16 PM
>>>>To: 'Yuan Zhiming'; David Franz
>>>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>>>Subject: RE: RE: Thank you!
>>>>
>>>>Greetings Zhiming,
>>>>
>>>>Great to hear from you, thank you for the note. Would it be possible to translate the summary into Chinese and post both documents on your website? Thank you for offering to fund the travel expenses. Should we also speak to a CAS representative in Beijing about the Texas meeting?
>>>>
>>>>We are discussing the Texas meeting (including possible dates) and will get back to you shortly.
>>>>
>>>>Kind regards,
>>>>

>>>>Ben
>>>>
>>>>Benjamin Rusek
>>>>The U.S. National Academy of Sciences
>>>>1-202-334-3975
>>>>
>>>>-----Original Message-----
>>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>>Sent: Monday, June 26, 2017 3:19 AM
>>>>To: Rusek, Benjamin; David Franz
>>>>Cc: Shi, Pei yong; Tom Ksiazek; JamesW. LeDuc; zhanghan; chenxw
>>>>Subject: Re: RE: Re: Thank you!
>>>>Importance: High
>>>>
>>>>Dear Rusek,
>>>>
>>>>Thanks for your work for the great meeting. I have read the summary that you well prepared and no further comment. As to the our next step for the future cooperaion on emerging disease control and the related consideration on biosafety, biosecurity and biothics, I totally agree with your suggestion, from a good discussion starting to practical action. the Chinese and American scientists and managers could find the common interests, and develop some kinds of cooperation projects, not only on scientific research, but also on the promotion of the understanding the biosaftey, biosecurity and bioethics among publics, academics, enterprnrs.
>>>>
>>>>Thanks for your invitaion of the Chinese scientists to US late this year, and I am glad to have this chance to furtherly discuss with you about the mutual interested topics, and I think the Chinese scientists can also cover their expenses of travel while needed. Besides the scientific communication, I expect some other achievements, such as:
>>>>1) Sign a memo between the UTMB and WIV (we are preparing the memo)
>>>>2) Set up a scientific cooperation working group and identify the
>>>>main players on the topic CCHFV, EBOLA, ABBOVIRUS etc?)
>>>>3) Set up a group on promotion the Science communication, focus on the biosafety, biosecurtly and bioethics, the responsibility of two academies.
>>>>4) Visit the Galveston Lab, and a round table discuss with the scientists and engeneer and leaders.
>>>>
>>>>Surely, we still have time to discuss the objective and the detail and your any suggestion and response are welcome.
>>>>
>>>>Regards
>>>>
>>>>Yuan Zhiming
>>>>
>>>>
>>>>
>>>>
>>>>
>>>>
>>>>
>>>>>Jim, Dave, Pei-yong and I have created a summary document that we might use as the first draft of a brief meeting report that could eventually be translated into Chinese and posted on your website. The summary is written from the NAS perspective so we are very interested in your comments and additions to the document. The summary includes a paragraph listing what (we think) we have agree to do next, the items are:
>>>>>1. Write a joint white paper outlining issues of mutual concern 2.
>>>>>Work to form an official partnership via a memorandum of
>>>>>understanding between the Galveston National Laboratory and the Wuhan Institute of Virology 3. Hold further face-to-face meetings in the United States at the Galveston National Laboratory (GNL) late in 2017.
>>>>>
>>>>>I am happy to facilitate the writing of item 1. Re item 3, we are interested in your thoughts on the possibly of holding a small meeting in the U.S. later this year. NAS has funding to pay for about 7 experts to travel from China to Texas for the meeting (possible topics for discussion are listed in the document).
>>>>>
>>>>>Kind regards,
>>>>>
>>>>>Benjamin Rusek
>>>>>The U.S. National Academy of Sciences
>>>>>1-202-334-3975
>>>>>
>>>>>-----Original Message-----
>>>>>From: Yuan Zhiming [mailto:yzm@wh.iov.cn]
>>>>>Sent: Thursday, May 25, 2017 11:34 PM

>>>>>To: David Franz
>>>>>Cc: Rusek, Benjamin; Shi, Pei yong; Tom Ksiazek; James W. LeDuc;
>>>>>zhanghan; chenxw
>>>>>Subject: Re: Re: Thank you!
>>>>>
>>>>>Dear All friends
>>>>>
>>>>>Thanks you for your contributiion for the excellent 2nd China-US
>>>>>workshop on challenges of emerging infectious, laboratory biosafety
>>>>>and global health security. Without your help, we can not have this
>>>>>good communication chance for the scientists and we can not discuss
>>>>>the important public hearth affires with the previligid scientists
>>>>>from China and USA. During the meeting, the scientists,
>>>>>policymakers, advisors from China and USA exchange the great
>>>>>achievements in science and technology in related areas, discussed
>>>>>the new conception and new strategy for disease control, the roles
>>>>>of biosafety, biosecurity and bioethics in infectious disease
>>>>>control, and discussed for the possibility for future cooperation
>>>>>between the Chinese and American, especially the official
>>>>>coopeation between our institute and Gaveston laboratory. I hope
>>>>>this meeting will be a milestone for futher Sino-US cooperation on
>>>>>infectious disease control, and I hope your stay in Wuhan will be
>>>>>the most precious memory i
>>>>>n your profession.
>>>>>
>>>>>Yes,we need to have a meeting report, indicating our activities, concerns and suggestion for futher
action for both academies, letingthe top leaders understand the effectiveness, practisibility and
prospective of this meeting. And we need to have a draft memorandum of understanding on collaborations
between UTMB and the our institute, quarentteeing, ensuring the good start has a productive results.
Hopefully we can sign this kind of memorandum in nest meeting in USA.
>>>>>
>>>>>We looking forward to seeing you soon in USA, if there is anything I can do, please let me know.
>>>>>
>>>>>Regards to all.
>>>>>
>>>>>Zhiming
>>>>>
>>>>>
>>>>>
>>>>>
>>>>>
>>>>>
>>>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We
would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to
the States.
>>>>>>>
>>>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making
the workshop an outstanding success.
>>>>>>>
>>>>>>>I underscore Jim's thanks to you for organizing and hosting an outstanding meeting in Wuhan last
week. I believe each of us came away with a similar very positive perspective regarding the meeting, the
venue, the city around us and particularly the Chinese colleagues with whom we met. I was also pleased
that you invited so many young people-our future-and I enjoyed discussions with them during the week. As
Jim says, there are numerous opportunities for us to continue collaborations. [Pei Youg has passed on
your additional thoughts regarding collaborations after the formal meeting and they will be included in
Ben's draft notes.] I believe, together, our participants from both sides have planted seeds for joint
future scientific work and policy discussions, important to all our citizens. We look forward to a
meeting in Galveston and continued opportunities to work together.
>>>>>>>
>>>>>>>Best regards, Dave
>>>>>>>
>>>>>>>David R. Franz DVM, Ph.D
>>>>>>>(b)(6)
>>>>>>>
>>>>>>>
>>>>>>>
>>>>>>> On May 23, 2017, at 11:42 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:
>>>>>>>
>>>>>>> Dear Zhiming,
>>>>>>>

>>>>>> Thank you so much for organizing the recent workshop on emerging infections and for bringing together such a distinguished group of experts. The Wanda Realm Hotel was the perfect venue with a beautiful meeting space, excellent food and a convenient location next to Han Street that allowed for a pleasant evening stroll. I thought the talks were especially enlightening and I appreciated very much having the opportunity to hear from the many Chinese experts that attended. It was clear that the gifted scientists who joined us are doing some remarkable research. I look forward to hearing more from them in the future. There are obvious opportunities for collaborations and I trust that in the coming months we will succeed in building new partnerships.

>>>>>>

>>>>>> Thank you also for arranging the tour of the new BSL4 laboratory. You should be very proud of this beautiful facility and we all look forward to it becoming fully operational very soon. I know that this has been a long and arduous process for you and your team!

>>>>>>

>>>>>> We look forward to receiving the draft memorandum of understanding on collaborations between UTMB and the Wuhan Institute of Virology and to building similar partnerships between other centers in China and the USA. As you know, we have a good start on scientific collaborations between our two organizations with the work already underway in Pei-Yong's laboratory and the recent work with Han Xia on tick-borne viruses. We look forward to building on these efforts and expanding to new partnerships.

>>>>>>

>>>>>> We look forward to working with you as we prepare for a follow-up meeting here in the States. We would welcome your suggestions for topics to discuss and the most opportune dates for you to travel to the States.

>>>>>>

>>>>>> Again, thank you and your very accomplished team of assistants for all your hard work in making the workshop an outstanding success.

>>>>>>

>>>>>> With best wishes,

>>>>>>

>>>>>> Jim

>>>>>>

>>>>>> James W. Le Duc, Ph.D.

>>>>>> Director

>>>>>> Galveston National Laboratory

>>>>>> University of Texas Medical Branch Galveston, TX 77555-0610

>>>>>> (t) 409-266-6500

>>>>>> (f) 409-266-6810

>>>>>> (m)



6th EVAg MEETING

Agenda & Logistics – 17.10.2017 – 18.10.2017

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1 Agenda

16.10.2017	
17:30-21:00	<i>Dinner at the Hongyi hotel</i>

1 st DAY – 17.10.2017, leaving from hotel at 9:00	
09:30-10:30	Introduction and Welcome Chairman: Jean-Louis ROMETTE – AMU
20 min	Presentation of WIV by Prof Yanyi WANG, deputy director of the WIV
10 min	General Consulate of France in Wuhan, Mr Olivier GUYONVARCH
15 min	Dr. Qiang WEI – China CDC - Member of the External Expert Advisory Board Title: Project of a Chinese Virus Archive
15 min	Group Photo
10:30-11:30	Capacities set up chaired by Jean-Louis ROMETTE - AMU
15 min	WP3: General presentation coord Sven REICHE – FLI
45 min	WP3: Tasks discussion (association with infraVec 2 and with VetBioNet)
11:30-12:00	Coffee break
30 min	WP4: Current achievements Maurice BARDSLEY – APHA
30 min	WP6: Support to Response chaired by Christian DROSTEN - UKB
13:00-14:30	Lunch (boxed lunch)
14:30-16:30	Capacities set up (continuation by SKYPE) chaired by Jean-Louis ROMETTE - AMU
15 min	WP2: General presentation coord Bruno COUTARD – AMU



45 min	WP2: Tasks Discussion
15 min	WP1 : General presentation - coord Remi CHARREL – AMU
45 min	WP1: Tasks Discussion
16:30-17:00	Coffee break
17:00-18:00	WP7: Providing Access to the EVAg Resource chaired by Christine PRAT – AMU & Jean-Louis ROMETTE – AMU
40 min	Business Analysis: Update on the EVAg DB content Quality of the resource Access provision procedure Relationship with Pharma's: Industrial platform?
20 min	Update of the Nagoya protocole in Europe Christine PRAT- AMU
18:30	End of the 1 st Meeting Day
19:00	Dinner

2nd DAY – 18.10.2017	
8:30-9:30 Transfer by bus from the Hotel to the BSL4 plant. Meeting will continue at BSL4 place	
09:30-10:30	WP8: Transfer of knowledge - dissemination and communication activities chaired by Christine PRAT - AMU
10 min	Updates on EVAg communication strategy and actions Project of collaboration with ProMED Silvia MESCHI – INMI & Christine PRAT – AMU
10 min	E-learning project update Emilie BONNAUD & Florence PRADEL- FMER
40 min	WAVE BSL4 Discussion: what strategy for BSL 4 scientific development in EVAg Stephan Gunther - BNI
10:30-12:00	WP5: Extension of EVAg network and integration of new resources chaired by Hervé BOURHY - IP
15 min	Update on the signature of MoU and collaboration agreements
75 min	Call INFRASUPP : action plan Emilie BONNAUD - IP & JL ROMETTE – AMU

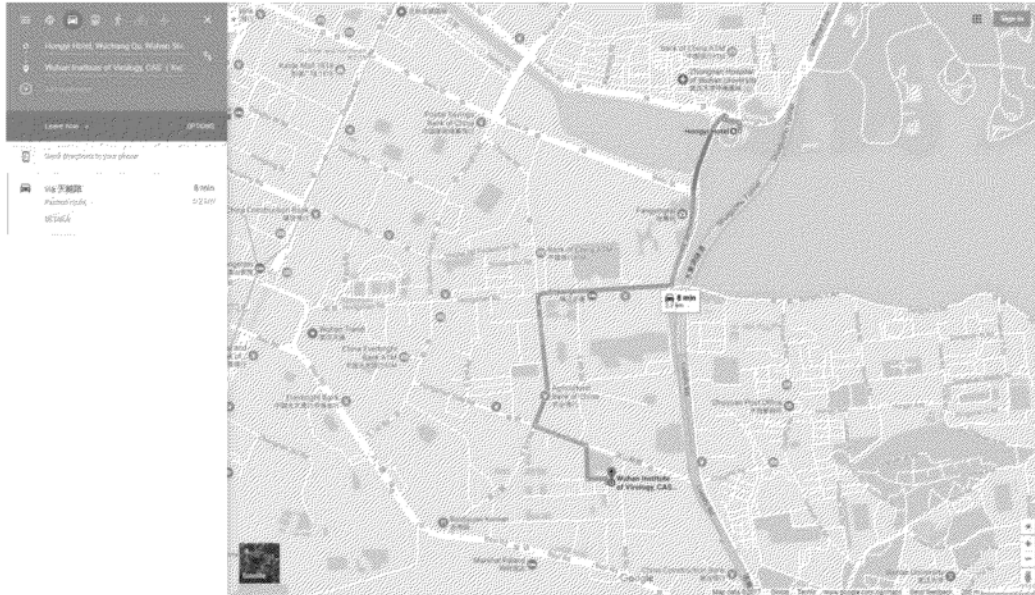


included	Coffee break
12:00-12:20	WP9: Project Management chaired by Jean-Louis ROMETTE – AMU and Alexia CARRILLO - AMU
20 min	Next financial report - Project of budget reallocation
12:20-13:00	Conclusion chaired by Jean-Louis ROMETTE - AMU
30 min	End of the current EVAg and New EVAg project: discussion
10 min	Preparation of the 7 th EVAg meeting
13:00-14:00	Lunch (boxed lunch)
14:00-17:00	BSL4 - WIV visit
30 min	Presentation of the facility by Prof Zhiming YUAN, Director of the BSL4
2 hours	Visit of the BSL4
16:30	End of the visit and transfer by bus to the hotel
18:00	Dinner at hotel (buffet)

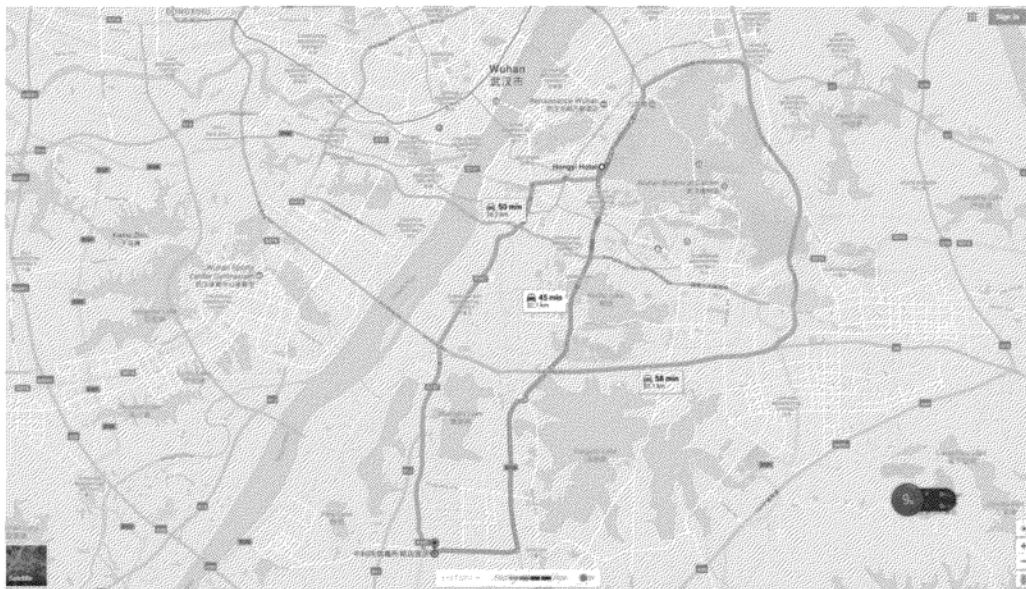
2 Meeting Points

Wuhan Institute of Virology, Chinese Academy of Sciences

- Oct. 17th, 3# Building (2F, meeting room 214), Xiao Hongshan Park, Wuchang, Wuhan



- Oct. 18th, Central Laboratory Building (1F, meeting room 1), Zhengdian Park, Jiangxia, Wuhan



Shuttle bus will be arranged. The distance between the Hongyi hotel to the two meeting points are:

- Oct. 17, about 2.2 km, 8 minutes, by car;
- Oct. 18, about 32 km, 45 minutes, by car.

3 Hotel

★★★★ HONGYI HOTEL

武汉弘毅大酒店

Hongyi Hotel Wuhan

酒店名称：武汉弘毅大酒店

酒店地址：武汉武昌区武昌区东湖路136号(靠东湖边 近楚河汉街)

Address : Wuhan Wuchang 136 Donghu Road, Wuchang. 136, Hubei, China



- Located in the East Lake Scenic Area of Wuhan.
- Wuhan Central Culture Tourist Area, Museum and other entertainment places.
- ~35 km away from Wuhan Tianhe international airport (~48 mins by car)

4 Tourist information About Wuhan

- The capital city of Hubei Province in central China
- The world's third River Yangtze
- One of the top 10 cities in China
- 10 million people
- Rich in culture and history
- Famous for Virology

5 Contact points

Wuhan Institute of Virology	Email	Phone Number
Shuang TANG	ts@wh.iov.cn	+86 15 927 339 212
Wuhan Institute of Virology	Email	Phone Number
Shi JUNMING	(b)(6)	+86 13 164 194 430
Aix-Marseille Université	Email	Phone Number
Jean-Louis ROMETTE	jean-louis.romette@univ-amu.fr	+ 33 (0) 6 62 74 51 34
Aix-Marseille Université	Email	Phone Number
Alexia CARRILLO	alexia.carrillo@univ-amu.fr	+ 33 (0) 7 83 17 80 87



6 Participant list

ORGANISATION	Acronym	First name	Family name	Email
Université d'Aix-Marseille	AMU	Jean-Louis	ROMETTE	jean-louis.romette@univ-amu.fr
		Alexia	CARRILLO	alexia.carrillo@univ-amu.fr
		Christine	PRAT	christine.prat@univ-amu.fr
Bernhard Nocht Institute	BNI	Stephan	GUNTHER	guenther@bni-hamburg.de
Animal and Plant Health Agency	APHA	Maurice	BARDSLEY	Maurice.Bardsley@apha.gsi.gov.uk
		Leigh	THORNE	Leigh.Thorne@apha.gsi.gov.uk
		Guanghui	WU	guanghui.wu@apha.gsi.gov.uk
Public Health England	DH PHE	Roger	Hewson	Roger.Hewson@phe.gov.uk
University of Basel	UNIBAS	Thomas	KLIMKAIT	thomas.klimkait@unibas.ch
Institute of Microbiology and Immunology	UL	Nataša	KNAP GASPER	natasa.knap@mf.uni-lj.si
Institute of Virology	IVSAS	Boris	KLEMPA	boris.klempa@savba.sk
National Institute for Infectious Diseases Lazzaro Spallanzani	INMI	Silvia	MESCHI	silvia.meschi@inmi.it
Erasmus universitair medisch centrum Rotterdam	EMC	Bart	HAAGMANS	b.haagmans@erasmusmc.nl
Institut Pasteur	IP	Emilie	BONNAUD	emilie.bonnaud@pasteur.fr
		Laurent	DACHEUX	laurent.dacheux@pasteur.fr
Friedrich-Loeffler-Institut	FLI	Sven	REICHE	sven.reiche@fli.bund.de
Agricultural Research Council	ARC-OVI	Ernest	Ngoepe	NgoepeE@arc.agric.za
		Claude	SABETA	SabetaC@arc.agric.za
National Institute for Communicable Diseases of the National Health Laboratory Service	NICD/NHLS	Janusz	Paweska	januszp@nicd.ac.za
		Petrus	JANSEN VAN VUREN	petrusv@nicd.ac.za
Chumakov Institute of Poliomyelitis & Viral Encephalitides	IPVE	Alexander	LUKASHEV	(b)(6)



Scientific research Institute of influenza of the Ministry of healthcare of the Russian Federation	RII	Mikhail	EROPKIN	eropkin@influenza.spb.ru
Chinese Academy of Science wuhang	WIV	Zhihong	HU	huzh@wh.iov.cn
		Fei	DENG	df@wh.iov.cn
		Shu	SHEN	shenshu@wh.iov.cn
		Shuang	TANG	ts@wh.iov.cn
		Jiang	LI	lijiang@wh.iov.cn
Commonwealth Scientific and Industrial Research Organisation	CSIRO	Sam	MCCULLOUGH	Sam.Mccullough@csiro.au
		David	WILLIAMS	D.Williams@csiro.au
Swedish Public Health Agency	FoHM	Ali	MIRAZIMI	Ali.Mirazimi@folkhalsomyndigheten.se
St Petersburg Pasteur Institute	St. Petersburg PI	Natalia	ROMANENKOVA	poliospb@nr3854.spb.edu
Institut Pasteur du Cambodge	IPC	Veasna	DUONG	dveasna@pasteur-kh.org
University of Texas Medical Branch	UTMB	Kenneth	PLANTE	ksplante@UTMB.EDU
National Institute for viral disease control and prevention, Chinese center for disease control and prevention	China CDC	Qiang	WEI	weiqiang@chinacdc.cn

MOU:	MOU – for the purpose of developing a research and training program
UTMB:	J. LeDuc
RECIPIENT:	Wuhan Institute of Virology
	Chinese Academy of I Sciences
EXPORT CONTROL:	N/A



**MEMORANDUM OF UNDERSTANDING OF COOPERATION
BETWEEN WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES
AND THE UNIVERSITY OF TEXAS MEDICAL BRANCH
AT GALVESTON**

Wuhan Institute of Virology, Chinese Academy of Sciences, with its legal address and premises at No. 44, Xiao Hong Shan, Wuhan, Hubei Province, China 430071 (hereinafter referred to as "**WIV**")

AND

The University of Texas Medical Branch, with its legal address and premises at 301 University Blvd, Galveston, Texas 77550 (hereinafter referred to as "**UTMB**")

WIV and UTMB hereinafter also individually referred to as a "**Party**" or collectively as the "**Parties**"

The parties reached and confirmed with the Memorandum of Understanding (hereinafter referred to as "**Memorandum**") their consensus to establish exchanges and collaboration in areas of mutual interest and benefit.

I. GENERAL PROVISION

i) Relationship between the parties

Nothing contained herein shall be construed as establishing a relationship of agent and principal or master and servant between the parties. Each party shall have full control of its operations and undertakings and shall have full responsibility for activities and duties carried by it and on its behalf.

ii) Good faith and fairness

- a) The parties undertake to act in good faith with respect to each other's rights under the obligations and objectives of this MoU.
- b) The parties, their representatives, their researchers and personnel shall not, either during or after the term of this MoU, disclose proprietary information relating to the

undertaking by both parties and each other's operations without the consent of the other party.

- c) The parties recognise the impracticality of providing for every contingency, which may arise during or after the life of the MoU and hereby agree to operate fairly and without detriment to the interests of either of them.

iii) Notices

Any notice, request or consent required or permission to be given or made pursuant to this MoU shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered either in person to the authorized representative at the Head Office of the party to whom communication is addressed or when sent by registered mail or by fax to such party at the following address:

For: Wuhan Institute of Virology

The Director General: Dr. Chen Xinwen

PO Box 430071

Xiao Hong Shan No.44

Wuhan, Hubei Province

The People's Republic of China

Tel: (0086)027-87199106

E-mail: chenxw@wh.iov.cn

For: The University of Texas Medical Branch

Dr. James LeDuc

301 University Blvd, 77550

Galveston, Texas

The United States

Tel:

E-mail:

Provided that a party may change its physical address and email for notice hereunder by giving the other party notice of such change pursuant to this clause.

Proof of posting or dispatch shall be deemed to be proof of receipt:

- a) In the case of a letter, on the 10th day after posting

- b) In the case of email, on the day immediately following the date of dispatch, but the sender has to confirm receipt of the same by the other party by telephone.

Without prejudice to the foregoing provisions, any notice shall be sent by the quickest means reasonable available.

II. OBJECTIVES OF THE COOPERATION

The objectives of the cooperation between WIV and UTMB are as follows:

- to promote the research cooperation between China and the United States for controlling infectious diseases, protecting laboratory safety and global health security;
- to deepen the training and education of all parties to this MoU; and
- to strengthen the academic and talent exchanges between the parties.

II. CONTENTS OF THE COOPERATION

To achieve these objectives, WIV and UTMB will, insofar as the means of each allow:

- promote talent and education exchanges by initiating visiting scientists and post-doctoral education programs;
- receive researchers, technicians and students of both parties for periods of training, study and/or research;
- organize symposia, conferences, short courses, workshops and meetings on research issues;
- carry out joint research programs and apply for international grants with joint efforts;
- exchange information pertaining to developments in teaching, faculty, staff and student development and research at each institution and
- exchange the virus resources strictly for the scientific research purposes.

III. MANAGEMENT SYSTEM OF THE MOU

i) WIV and UTMB will provide necessary supports to the MoU. If necessary the parties can communicate for asking other scientific research units in globe to participate in relevant scientific research activities in this MoU.

ii) Each party shall designate a coordinator to oversee and facilitate the implementation of this MoU. The coordinators, working with other appropriate administrators at the respective institutions, shall have the following responsibilities:

- to promote academic collaboration at both researchers, technicians and student levels for research, training and study;
- to act as principal contracts for individual and group activities and to plan and coordinate

all activities under this MoU within their institutions as well as with the other party;

- to distribute to each party information about the faculty, facilities, research, publications, library materials and educational resources of the other party; and
- to meet periodically to review and evaluate past activities and to work out new ideas for future cooperative agreements.

IV. INTELLECTUAL PROPERTY

Both parties do agree that:

- i) Title rights, copy rights, patent rights or any other intellectual rights in Intellectual Property belonging to either party prior to this MoU shall remain with said Party. Title rights, copy rights, patent rights or any other intellectual rights in any Intellectual Property generated from information and data collected and analyzed under the MoU shall be the property of both WIV and UTMB.
- ii) That prior to any disclosure of proprietary information by one party to the other concerning specific aspect of this collaboration, the one party may require the other to execute a confidentiality agreement.
- iii) Once WIV and UTMB are satisfied that a given discovery ("Invention") arising from a joint project under the MoU is worth protecting by a patent, the Parties will negotiate in good faith to establish the terms of an "Inter-Institutional Agreement" or IIA, or such other agreements as may be appropriate, setting forth, amongst other things, the parties' agreement on the control of patent prosecution, administration and maintenance and on the responsibility for further research, development and commercialization of the Invention and associated rights. The parties intend that the terms of any Inter-Institutional Agreement shall outline each Party's assumption of equal responsibilities in administration of any patent obtained under this MoU. Responsibility for expenses relating to registration, administration and further development and exploitation of the invention (including funds to the inventors to carry out further work to bring the invention to a stage where it can be commercially exploited, researching for commercial outlets, advertising expenses, and fees for patent attorneys) will be agreed upon by both parties. Any decision relating to the commercial exploitation or to the manner of disposal of the patent shall be made jointly taking into consideration the patent regulations of each party in particular the role of the inventor with commercialization revenues received for the Invention or the rights therein to be shared equally among the parties according to their shares in the Invention.
- iv) Material for publication or presentation arising from the joint research projects under the MoU shall be submitted for clearance to the two parties to ensure that no patentable discoveries are published prior to protection by patents.

v) Any scientific publications resulting from the collaborative research under the MoU, including scientific papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect where relevant contributions have been made and quoting the names of authors and the two parties as well as the donor agencies if applicable.

V. FUNDING

It is understood and agreed that WIV and UTMB will each be responsible for their own expenses incurred in the performance of the collaborative research programs under this MoU. Neither party is under obligation to fund the portion of the collaborative research program conducted by the other party.

VI. ADMINISTRATION OF THE MOU

Both parties agree (that):

- a. This MoU shall be identified only as the current wish and intent of the Parties regarding the potential for developing a program agreement executed between the parties.
- b. Further agreements concerning any program shall be independent of this MOU and shall each provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties.
- c. Any collaborative research agreement, or similar arrangement related to scientific development and/or discovery, shall be separately negotiated and a written agreement executed by and between the parties for each such arrangement.
- d. To work out mechanisms of reviewing and evaluating the impact of the MoU every year and at the end of the MoU duration and to monitor implementation of any on-going activities.
- e. To advise either party on available areas of collaboration and advise the Chief Executives of the institutions through a written report on the progress of the collaboration or on any need to amend or review the same.

VII. DURATION OF THE MOU

The MoU will remain in force for five (5) years at the end of which both parties will review and may renew the collaboration.

VIII. EFFECTIVE DATE

- i) This memorandum shall become effective immediately from the date of the last signature by the appropriately authorized officers of each of the two institutions.

ii) This memorandum may be extended by both parties' written consent after the expiration of the MoU.

IX. MODIFICATION/AMENDMENTS

i) Modification of the terms and conditions of this MoU may only be made by written agreement between the parties, duly signed by authorized officers of both parties and the same will be incorporated in the annexure of this Memorandum of Understanding.

ii) Either party wishing to modify/ or amend the MoU shall give the other party two (2) months written notice of such intentions and shall send the proposed modifications/amendments within the two (2) months notice period.

iii) The modification/amendment proposal will be discussed between the parties who will make recommendations to the Chief Executives of the institutions who will execute the modified/amended MoU.

X. SUSPENSION

i) In the event of one party not fulfilling its part of the obligations as spelt out in this MoU and the aggrieved party is being adversely affected, the aggrieved party is at liberty to suspend the MoU with immediate effect and call for renegotiating within 7 to 21 days.

ii) In the event of the other party not availing itself for renegotiating with the aggrieved, the aggrieved party may give the other party a notice of termination but in the meantime handle the cause of grievance/dispute in the best way possible to avoid further deterioration/harm occurring.

XI. TERMINATION

i) Either party may terminate the MoU if the other party is in breach of terms and conditions of this MoU. The aggrieved party shall give the other party three (3) months notice of the termination of the MoU; provided that the other party has been given a one (1) month notice and the breach has not been rectified.

ii) Either party may terminate this MoU without cause and without penalty by giving three (3) months written notice to the other Party

iii) In the event of such termination of the MOU any on-going activity under the collaboration shall be dealt with as shall be mutually agreed by the two institutions.

iv) Where such activity involves students, the parties shall ensure that the students shall be able to complete their studies.

v) Any gains or losses in the pursuance of the objectives of this MoU that shall have been incurred at the time of termination shall be shared in mutually agreed ratios.

XII. SETTLEMENT OF DISPUTES

i) The parties shall use their efforts to settle amicably all disputes arising out of or in connection with this MoU and/or its interpretation hereof.

ii) Any dispute, difference or question which may arise at any time between the parties, which cannot be settled amicably within thirty (30) days after receipt by one party of the other party's request for such amicable settlement shall be referred to the decision of a single arbitrator to be agreed upon between the two parties or in default of agreement within 14 days of each party raising such dispute.

iii) Any party not satisfied with the arbitration, shall have the right to seek justice in the Courts of law.

XIII. INDEMNITY

The parties do agree that if a legal suit arises with regard to the management and/or administrative in-capabilities and/or lapses that may arise as a result of action or inaction on the part of the party, which may have led to either party being sued individually, jointly or severally, each party shall be responsible for its own legal fees and expenses.

XIV. EXPORT CONTROL

The parties acknowledge that this Agreement and the performance thereof are subject to compliance with any and all applicable Chinese and United States laws, regulations, or orders, including those that may relate to the export of technical data, and both Parties agree to comply with all such laws, regulations and orders. The Parties agree that if the U.S. export laws and/or those of the People's Republic of China are or become applicable, neither Party will export any Materials or information deemed Export Controlled, received under this Agreement to any countries for which the United States or Chinese government requires an export license or other supporting documentation at the time of export or transfer, unless said Party has obtained prior written authorization from the appropriate authority responsible for such matters.

XV. FORCE MAJEURE

Both parties shall be released from their respective obligation in the event of national emergency, war, prohibitive governments' regulations or of any other cause beyond the reasonable control of the parties or either of those that render the performance of this MoU impossible whereupon moneys due under this agreement shall become due and payable.

The MoU will consist of four numbered copies of equal value. Each Party will retain two copies and can make further copies as required.

XVI. CONFIDENTIALITY

i) All cooperation and exchanges documents, data, details and materials shall be treated as confidential information by the parties.

ii) The party may not make use of their mutual dealings for advertising purposes without the other's prior written consent.

iii) The confidentiality obligation shall be applicable throughout the duration of this MoU and after it has been terminated. The party is entitled to ask the other to destroy and/or return the secret files, materials and equipment without any backups.

In witness whereof the parties have affixed their common seals on thisday of2017..

**WUHAN INSTITUTE OF VIROLOGY,
CHINESE ACADEMY OF SCIENCES**

**THE UNIVERSITY OF TEXAS MEDICAL
BRANCH**

By: _____
Name:
Title:
Date:
Place:

By: (b)(6)
Name: Carolee A. King, JD (b)(6)
Title: Senior VP and General Counsel (b)(6)
Date: 10/20/17
Place: UTMB Galveston, TX

Read and understood:

Signature of WIV Coordinator
Prof. Zhiming Yuan

Read and understood:

(b)(6)

Signature of UTMB Investigator (Coordinator)
Dr. James W. LeDuc

(b)(6)
Content reviewed
(b)(6)

NAS GNL Global Health Meeting

January 15-18, 2018

List of expected guest for room block

1. Benjamin Rusek
2. Bu Zhigao
3. Cao Cheng
4. Chen Xinwen
5. Chen Gong
6. Gao "George" Fu
7. Hu Yunzhang
8. Liang Mifang
9. Liu Longding
10. Qin Chengfeng
11. Shi Zhengli
12. Sun Hui
13. Xi Zhou
14. Yuan Zhiming
15. David R. Franz
16. Margaret Hamburg
17. Peter Palese
18. Diane Griffin
19. Tbd
20. Tbd
21. tbd

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Sent: Monday, October 23, 2017 4:04 PM
To: LeDuc, James W.; Dave Franz (davidrf Franz@gmail.com)
Cc: Shi, Pei yong; Holubar, Connie J.; Guerra, Analilia; Lowenthal, Micah
Subject: RE: Galveston mtg

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Dear all,

I'm fine with the TC at 2:00 pm on Nov 1.

I did send a separate email to George, but have not heard anything from him. Let's give them another week before checking with them again. Many of them need approvals.

Thanks.

Pei-Yong

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NATIONAL ACADEMY OF SCIENCES

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November 1, 2017

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For several years, NAS has worked together to build a strong foundation for collaboration between Chinese and American scientists in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), the Wuhan Institute of Virology of CAS, and other Chinese organizations held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases and to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. **We are pleased to invite you to speak at the next dialogue meeting in Galveston, Texas at the GNL on January 16-18, 2018.**

At the meeting, scientists from China and the U.S. will discuss conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both China and the United States. The topics of discussion for this meeting will also include specific high biocontainment "operational" issues such as:

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500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

NAS can book and pay for your travel arrangements to Galveston, La Tasha Morgan (cced lmorgan@nas.edu) is happy to work with you to arrange your flight. The meeting will take place at the GNL and NAS and the GNL will provide you with local transportation, meals and accommodations for the duration of the meeting. We have reserved a room block at the Hotel Galvez www.hotelgalvez.com on Galveston Island close to the GNL for the group.

Please let us know as soon as possible if you can attend the January meeting. If you need any further supporting information or documentation regarding this meeting, we would be happy to provide it at any time. Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

(b)(6)

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA
202-334-3975
brusek@nas.edu

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James Le Duc, Ph.D
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Deleted: who attended the 2017 meeting in Wuhan.

NAS can book and pay for your travel arrangements to Galveston. La Tasha Morgan (cced lmorgan@nas.edu) is happy to work with you to arrange your flight. The meeting will take place at the GNL and NAS and the GNL will provide you with local transportation, meals and accommodations for the duration of the meeting. We have reserved a room block at the Hotel Galvez www.hotelgalvez.com on Galveston Island close to the GNL for the group.

Deleted: ,

Please let us know as soon as possible if you can attend the January meeting. If you need any further supporting information or documentation regarding this meeting, we would be happy to provide it at any time. Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in [Galveston](#) in January.

Deleted: the United States

Sincerely,

(b)(6)

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA
202-334-3975
brusek@nas.edu

(b)(6)

James Le Duc, Ph.D
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

jwleduc@utmb.edu

Deleted: 1



NATIONAL ACADEMY OF SCIENCES

XXXXXXX

November 1, 2017

Dear **Professor** [REDACTED]

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting is being convened by the U.S. National Academy of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL), University of Texas Medical Branch during the week of January 15, 2018, in Galveston, Texas.

For several years, NAS has worked together to build a strong foundation for collaboration between Chinese and American scientists in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), the Wuhan Institute of Virology of CAS, and other Chinese organizations held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases and to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. **We are pleased to invite you to speak at the next dialogue meeting in Galveston, Texas at the GNL on January 16-18, 2018.**

At the meeting, scientists from China and the U.S. will discuss conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both China and the United States. The topics of discussion for this meeting will also include specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities and training clinical staff for care of patients infected with especially dangerous pathogens
- Conducting "well-documented" studies under Biosafety Level 4 (BSL-4) conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combating emerging infections caused by viral agents requiring high-containment facilities.

At the meeting we hope you can speak on [REDACTED]. A more detailed agenda will be offered in the coming weeks. The invited Chinese experts include leaders of China's three BSL-4 laboratories, the Wuhan Institute of Virology (CAS), the Harbin Veterinary Research Institute (Chinese Academy of Agricultural Sciences), the Kunming Institute of Medical Biology (Chinese Academy of Medical Sciences), senior officials from the Chinese Center for Disease Control and Prevention and other experts who attended the 2017 meeting in Wuhan.

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

NAS can book and pay for your travel arrangements to Galveston, La Tasha Morgan (cced lmorgan@nas.edu) is happy to work with you to arrange your flight. The meeting will take place at the GNL and NAS and the GNL will provide you with local transportation, meals and accommodations for the duration of the meeting. We have reserved a room block at the Hotel Galvez www.hotelgalvez.com on Galveston Island close to the GNL for the group.

Please let us know as soon as possible if you can attend the January meeting. If you need any further supporting information or documentation regarding this meeting, we would be happy to provide it at any time. Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

(b)(6)

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA
202-334-3975
brusek@nas.edu

(b)(6)

James Le Duc, Ph.D
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

From: LeDuc, James W.
Sent: Wednesday, November 15, 2017 3:55 PM
To: Rusek, Benjamin; Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong
Subject: RE: Galveston mtg--draft agenda
Attachments: NAS-CAS mtg Galveston 2018 Draft Agenda(1).docx

Hi Ben,

Thanks for the follow up. **I would definitely go ahead and invite Carol Linden.** I thought we had done so already when Dave indicated that she would be interested in joining us.

Pei Yong and I discussed **Whitehead** from NIAID to talk about the dengue vaccine. *If Dave agrees, I would invite him now as well.*

I would hold off on inviting **Mike Imperiale** until Dave has had a chance to weigh in. I don't think that he's an Academy member and we may wish to find a Member to talk on this subject. **Mike Osterholm** would be a good candidate and I believe that he's in NOM. Dave can chime in, but Mike has been following the avian influenza story closely (including outbreaks in his neighborhood) and would contribute to the agriculture discussions as well. I can call him if we are in agreement. The two are not mutually exclusive; both would add value if the budget permits.

I would go ahead and invite Jamie as I think what we are trying to do is center stage to her efforts and we need to get her and Open Philanthropies involved. I would also like to explore funding opportunities for our training center with her.

Dave Relman is always great and we should see if he's available and interested. If he's not, Megan Palmer is a young lady from his group that is very engaged in this topic and a good speaker, although not an Academy member or of David stature.

As I think you know, Steve Higgs, Ralph Baric and Colleen Kraft have all agreed to join us.

We should probably **explore adding someone on influenza**—if not David Swayne, maybe Dan Jernigan from CDC (he spoke in the Seychelles).

It looks like we will not be able to get a special NASA tour due to foreign national restrictions, but we could do a regular tour if there is interest.

Pei Yong has requested the names of speakers from China but I have yet to see them. Once we have that we can flesh out names from our local experts here at UTMB and in driving distance from Houston. Kristi Murray is a possibility as noted previously. We might need to cover her hotel and mileage if she ends up joining us.

Did you look at the draft agenda and does it meet your contract requirements?

Thanks, Jim

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Wednesday, November 15, 2017 3:21 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>; Dave Franz (davidrf Franz@gmail.com) <davidrf Franz@gmail.com>; Shi, Pei

yong <peshi@UTMB.EDU>

Subject: RE: Galveston mtg--draft agenda

Importance: High

Hi Jim,

Thanks for this. Looks like we need to invite Relman. Which other non-government people should we invite now, Imperiale?

And which gov folks should we invite now? Linden? I ask because the gov folks will get a different invite letter since NAS is using government funding for the meeting.

PS Micah and I had a good talk with Jamie Yassif from Open Philanthropy yesterday. She is very interested in the meeting but is unlikely to be able to attend due to other commitments. I will send her a formal invite (in case she can make it) tonight.

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: LeDuc, James W. [<mailto:jwleduc@UTMB.EDU>]

Sent: Tuesday, November 14, 2017 11:18 AM

To: Dave Franz (davidrf Franz@gmail.com); Rusek, Benjamin; Shi, Pei yong

Subject: Galveston mtg--draft agenda

Importance: High

Please see attached first cut at an agenda for our upcoming meeting. Pei Yong and I discussed briefly yesterday and he has requested a list of confirmed participants from China to help populate the agenda. Please revise and add as needed. Nothing is set, but I'm concerned that we need to finalize/confirm speakers before the Holidays. Maybe a conference call later this week?

Thanks, Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
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(f) 409-266-6810
(m) (b)(6)

Draft Agenda for NAS-CAS meeting in Galveston, 16-18 January 2018

Monday, 15 Jan.

Participants arrive, Hotel Galvez, Galveston

Evening reception (at hotel?) Drinks and light finger-food organized by NAS.

Tuesday, 16 Jan.

Welcome and Opening Presentations (08:00-10:00)

08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30 Welcome, Introductions, Opening Remarks

08:30-08:35 Welcome to UTMB—Dr Callender (President) or Dr Jacobs (Dean, Medical School)

08:35-08:45 Welcome to GNL—Le Duc

09:00-09:20 Keynote talk, China—George Gao? Zhiming Yuan?

09:20-09:40 Keynote talk, US—Reiman? Need NAS member

Coffee Break and Group Photo (10:00-10:30)

10:00-10:30 Coffee Break and group photo

Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

Colleen Kraft/NETEC/staff training

Conduct of regulated studies in biocontainment—product development

Carol Linden/Melissa Eitzen/Trevor Brasel?

Working Lunch (12:30-13:30 pm in GNL Lobby and Conference Room)

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Vector-borne diseases—mosquito and tick-borne

Dennis Bente CCHF?

Scott Weaver or others, Zika, Chik?

Coffee Break (15:00-15:30)

West Nile (Christi Murray (local—Baylor; on longterm follow up?))

Chinese experts

Dinner Le Duc home (18:30-21:00)

Wednesday, 17 Jan.

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

Research in biocontainment on agricultural pathogens

Steve Higgs/Zhigao Bu (director, Harbin)

Scientific talks on Rift Valley fever virus; nipah virus; Avian influenza; others?

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

Coronaviruses: Ralph Baric

Dr Zhengli Shi (lady from Wuhan)

Coffee Break (15:00-15:30)

Filovirus and other high risk pathogen product development: Geisbert (?)

Dengue vaccine development: Whitehead (NIH)?

Seasonal Influenza? Lassa fever?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 Jan.

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations

Corrie/Miguel/

Biotechnology advances—Imperiale?

Open Philanthropies—Yassouf?

Coffee Break (10:00-10:30)

Session 6. Optional Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

-Clinical biocontainment rooms

-GNL and Keiller insectaries

Closing Comments (11:45-12:00)

Comments from NAS/CAS

Signing of MOUs?

Press conference?

Working Lunch (12:00-13:00 GNL Lobby and Conference Rooms)

Optional Bus Tour to NASA (To be confirmed, 13:00-17:00)

Dinner on your own?

NAS Team: Franz; Rusek; NAS member (red indicates funded by NAS)

From: LeDuc, James W.
Sent: Thursday, November 16, 2017 4:50 PM
To: David Franz
Subject: RE: VIP visitors
Attachments: NAS-CAS mtg Galveston 2018 Draft Agenda(1).docx

Dave, please take a look at the draft agenda I sent around previously and the emails about possible speakers. I'm getting very concerned about getting folks identified and invited. With the holidays coming we need to get this finalized asap.

I had suggested Michael Imperiale and/or Mike Osterholm as possible speakers. Also Relman??? Thoughts?

Thanks, Jim

From: David Franz [mailto:davidrf Franz@gmail.com]
Sent: Thursday, November 16, 2017 4:25 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Benjamin Rusek <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Subject: Re: VIP visitors

Excellent! dave

David R. Franz DVM, Ph.D



On Nov 16, 2017, at 5:11 PM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Just FYI, Dr Callender is the President of UTMB and has agreed to make brief opening comments at the NAS-CAS meeting. We will likely need to prepare the text for him.

Jim

From: Lidstone, Sheila
Sent: Thursday, November 16, 2017 2:59 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Pedraza, Mary Ann S. <mypedraz@UTMB.EDU>; Hadley, Stephen D. <sdhadley@UTMB.EDU>; Havard, Mary G. <mghavard@UTMB.EDU>
Subject: RE: VIP visitors

Hi Jim:

Dr. Callender said yes, put him down for 8:30 a.m. on January 16 to welcome our guests.

As we get closer to the date, we'll figure out if there's anything in particular he should say...but for now, it's on the calendar!

Thank you, and Happy Thanksgiving to you and Mary Ellen!

<image001.png>

Sheila S. Lidstone
Vice President and Chief of Staff
Office of the President

301 University Blvd., Galveston, TX 77555-0129
P 409.772-9866
F 409.772-5064 E shlidsto@utmb.edu

<image002.png>

From: LeDuc, James W.
Sent: Wednesday, November 15, 2017 8:40 PM
To: Lidstone, Sheila <shlidsto@UTMB.EDU>
Subject: Re: VIP visitors

No hurry. Just trying to get coordinated a bit ahead of time. After Thanksgiving is Fine.

Thanks. Jim

Sent from my iPhone

On Nov 15, 2017, at 5:07 PM, Lidstone, Sheila <shlidsto@UTMB.EDU> wrote:

Hi Jim---
DLC is travelling...may we have until Friday to get back to you on this?
We'll ask on Friday and either Mary Ann or I will let you know...thanks, S

<image001.png>

Sheila S. Lidstone
Vice President and Chief of Staff
Office of the President

301 University Blvd., Galveston, TX 77555-0129
P 409.772-9866
F 409.772-5064 E shlidsto@utmb.edu

<image002.png>

From: LeDuc, James W.
Sent: Wednesday, November 15, 2017 5:04 PM
To: Lidstone, Sheila <shlidsto@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Holubar, Connie J. <cjholuba@UTMB.EDU>

Subject: VIP visitors

Importance: High

Sheila,

We will be hosting a 2 ½ day meeting here in the GNL 16-18 Jan 2018 for our US National Academy of Sciences and the Chinese Academy of Sciences. The directors of the 3 BSL4 labs constructed in China will be here along with a dozen or so senior Chinese scientists. **I'm wondering if Dr Callender might be available to make some short welcoming remarks at the start of the meeting on Tuesday morning.** He's of course welcome to stay as long as he likes, but this would require him to be here in the morning session around 8:30 or 9:00 am. I will be hosting a dinner at our home that evening that he may wish to attend as well if he likes, but less important. We have also established formal MOUs with each of these BSL4 laboratories and we could have a formal signing ceremony then or later in the meeting, with or without some press coverage (I have not explored a signing ceremony or press coverage yet). All this is in the planning stage now, but I wanted to alert you and see if he might be available. If he's not, we'll ask Dr Jacobs.

Thanks, Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

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Coffee Break and Group Photo (10:00-10:30)

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Clinical management of high risk patients

Colleen Kraft/NETEC/staff training

Conduct of regulated studies in biocontainment—product development

Carol Linden/Melissa Eitzen/Trevor Brasel?

Working Lunch (12:30-13:30 pm in GNL Lobby and Conference Room)

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne diseases—mosquito and tick-borne

Dennis Bente CCHF?

Scott Weaver or others, Zika, Chik?

Coffee Break (15:00-15:30)

West Nile (Christi Murray (local—Baylor; on longterm follow up?)

Chinese experts

Dinner Le Duc home (18:30-21:00)

Wednesday, 17 Jan.

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

Research in biocontainment on agricultural pathogens

Steve Higgs/Zhigao Bu (director, Harbin)

Scientific talks on Rift Valley fever virus; nipah virus; Avian influenza; others?

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

Coronaviruses: Ralph Baric

Dr Zhengli Shi (lady from Wuhan)

Coffee Break (15:00-15:30)

Filovirus and other high risk pathogen product development: Geisbert (?)

Dengue vaccine development: Whitehead (NIH)?

Seasonal Influenza? Lassa fever?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 Jan.

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations

Corrie/Miguel/

Biotechnology advances—Imperiale?

Open Philanthropies—Yassouf?

Coffee Break (10:00-10:30)

Session 6. Optional Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

-Clinical biocontainment rooms

-GNL and Keiller insectaries

Closing Comments (11:45-12:00)

Comments from NAS/CAS

Signing of MOUs?

Press conference?

Working Lunch (12:00-13:00 GNL Lobby and Conference Rooms)

Optional Bus Tour to NASA (To be confirmed, 13:00-17:00)

Dinner on your own?

NAS Team: Franz; Rusek; NAS member (red indicates funded by NAS)

From: David Franz <davidrf Franz@gmail.com>
Sent: Thursday, November 16, 2017 5:20 PM
To: LeDuc, James W.
Subject: Re: VIP visitors
Attachments: drfNAS-CAS mtg Galveston 2018 Draft Agenda(1).docx

I made a few comment with track changes. It looks like it's pretty balanced to me. dave

David R. Franz DVM, Ph.D



On Nov 16, 2017, at 5:49 PM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

<NAS-CAS mtg Galveston 2018 Draft Agenda(1).docx>

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08:35-08:45 Welcome to GNL—Le Duc

09:00-09:20 Keynote talk, China—George Gao? Zhiming Yuan? Do we know from George yet? I emailed with Zhiming again today; he seems to be looking forward to it.

09:20-09:40 Keynote talk, US—Relman? Need NAS member I think Mike O or Mike I (I don't know if Mike I is NAM/NAS?) might be good choices, just because we use David so much....and they are both pure ID guys. Mike O could talk about Ebola 14 or flu and drift into generic viral threats regional or global.

Coffee Break and Group Photo (10:00-10:30)

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Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

Colleen Kraft/NETEC/staff training (I was with Ted Cieslak in Beijing; they treated three patients and he's a good speaker...if Colleen doesn't work for some reason.

Conduct of regulated studies in biocontainment—product development

Carol Linden/Melissa Eitzen/Trevor Brasel?

Working Lunch (12:30-13:30 pm in GNL Lobby and Conference Room)

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Thursday, 18 Jan.

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Training in biosafety, biosecurity and facilities operations

Corrie/Miguel/

Might you consider doing something on management of biocontainment facility?

Biotechnology advances—Imperiale?---Mike would be good here.

Open Philanthropies—Yassouf?

Coffee Break (10:00-10:30)

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Dinner on your own?

NAS Team: Franz; Rusek; NAS member (red indicates funded by NAS)

(Don't know if you saw that Sergey will be in DC during that time. We might even consider my staying back to spend some time with him. If so, I think we should brainstorm some possible meeting topics for one held, possibly, in a third country???)

From: LeDuc, James W.
Sent: Friday, November 17, 2017 10:16 AM
To: Yuan Zhiming
Cc: Benjamin Rusek; Shi, Pei yong; David Franz; Lowenthal, Micah
Subject: RE: List if Chinese participants
Attachments: NAS-CAS mtg Galveston 2018 Draft Agenda(2).docx

Hi Zhiming,

Attached please find a current draft of our proposed agenda for the upcoming meeting in Galveston. As you will see, there are still some major gaps where we need to identify speakers. We would like to balance the US-side presentations to those being made by your Chinese experts in an effort to facilitate future collaborations. Have you had any success in identifying the Chinese participants?

Please review the agenda and make any comment or suggestions as needed. As you will see, we have tentatively arranged into 6 sessions to cover (1) clinical care and product development in biocontainment, (2) vector-borne diseases, (3) agricultural research in biocontainment, (4) recent advances in research on high hazard pathogens, (5) biosafety, biosecurity and biocontainment operations, and (6) optional tours of some of the specialized facilities that we have on campus. We are attempting to arrange a tour on the last afternoon, perhaps to NASA or a local museum, if folks are interested.

I would appreciate your thoughts and comments on the draft agenda and especially on the Chinese speakers likely to participate so that we can extend invitation to other speakers as soon as possible.

Thanks,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

From: Shi, Pei yong
Sent: Monday, November 13, 2017 1:49 PM
To: Yuan Zhiming <yzm@wh.iov.cn>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; Benjamin Rusek <BRusek@nas.edu>; David Franz <davidrfranz@gmail.com>
Subject: List if Chinese participants

Hi Zhiming,

Jim and I were discussing the scientific program of our January meeting. Would you please send us a list of Chinese participants who have already committed to attend the meeting? Please also indicate each individuals' expertise. We will formulate the program and send you and the team for review.

Thanks!

Pei-Yong

Pei-Yong Shi, Ph.D.
I.H. Kempner Professor of Human Genetics
Vice Chair for Innovation and Commercialization
Department of Biochemistry & Molecular Biology
University of Texas Medical Branch
Galveston, Texas 77555
Phone: 409-772-6370
Email: peshi@utmb.edu
<http://www.hbcg.utmb.edu/faculty/shi.asp>

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Carol Linden (FDA) Invitation extended, awaiting response/Melissa Eitzen/Trevor
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Steve Higgs/Zhigao Bu (director, Harbin)

Scientific talks on Rift Valley fever virus; nipah virus; Avian influenza; others-mix of US and Chinese experts—need to identify speakers

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Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

Coronaviruses: Ralph Baric

Dr Zhengli Shi (from Wuhan)—accepted?

Coffee Break (15:00-15:30)

Filovirus and other high risk pathogen product development: Geisbert (?)

Dengue vaccine development: Whitehead (NIH) invitation extended; awaiting response

Seasonal Influenza? Lassa fever? Mix of US and Chinese experts—need to identify

Bus to Hotel

Dinner organized by NAS

Thursday, 18 Jan.

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations

Corrie/Miguel/

Biotechnology advances—Need speaker

Open Philanthropies—Yassif? Invitation extended but probably not able to attend

Need to work on speakers for this session.

Coffee Break (10:00-10:30)

Session 6. Optional Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

-Clinical biocontainment rooms

-GNL and Keiller insectaries

Closing Comments (11:45-12:00)

Comments from NAS/CAS

Signing of MOUs?

Press conference?

Working Lunch (12:00-13:00 GNL Lobby and Conference Rooms)

Optional Bus Tour TBD

Dinner on your own?

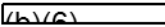
NAS Team: Franz; Rusek; (red indicates funded by NAS)

From: LeDuc, James W.
Sent: Monday, November 20, 2017 9:55 AM
To: 袁志明
Cc: Benjamin Rusek; Shi, Pei yong; David Franz; Lowenthal, Micah; 张晗
Subject: RE: RE: List if Chinese participants

Thank you very much Zhiming. I would appreciate it if when you next speak to your colleagues that you would ask them about the title of their presentations.

With best wishes,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) 

From: 袁志明 [mailto:yzm@wh.iov.cn]
Sent: Monday, November 20, 2017 3:17 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Benjamin Rusek <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>; David Franz <davidrfranz@gmail.com>; Lowenthal, Micah <mlowenth@nas.edu>; 张晗 <zhanghan@wh.iov.cn>
Subject: Re: RE: List if Chinese participants
Importance: High

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Thanks for your information and your preparation for the coming CAS-NAS meeting. I have no further comment about the agenda and you already well prepared.
In our Institute, Dr. Chen Xinwen, Shi Zhengli, Zhou Xi and me are scheduled to attend the meeting and our visit was just approved by CAS, hopefully we can get the visa in time.

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I have no further information about other guests, maybe someone has replied Benjamin after they received the invitation.

Ben, would you please give me a list of your invitation, and marked their reply? I will try to call them to figure out their situation.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-11-18 00:16:24 (星期六)

收件人: "Yuan Zhiming" <yzm@wh.iov.cn>

抄送: "Benjamin Rusek" <BRusek@nas.edu>, "Shi, Pei yong" <peshi@UTMB.EDU>, "David Franz" <davidrf Franz@gmail.com>, "Lowenthal, Micah" <mlowenth@nas.edu>

主题: RE: List if Chinese participants

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Please review the agenda and make any comment or suggestions as needed. As you will see, we have tentatively arranged into 6 sessions to cover (1) clinical care and product development in biocontainment, (2) vector-borne diseases, (3) agricultural research in biocontainment, (4) recent advances in research on high hazard pathogens, (5) biosafety, biosecurity and biocontainment operations, and (6) optional tours of some of the specialized facilities that we have on campus. We are attempting to arrange a tour on the last afternoon, perhaps to NASA or a local museum, if folks are interested.

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(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

From: Shi, Pei yong

Sent: Monday, November 13, 2017 1:49 PM

To: Yuan Zhiming <yzm@wh.iov.cn>

Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; Benjamin Rusek <BRusek@nas.edu>; David Franz

(b)(6)

Subject: List if Chinese participants

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Thanks!

Pei-Yong

Pei-Yong Shi, Ph.D.
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Vice Chair for Innovation and Commercialization
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University of Texas Medical Branch
Galveston, Texas 77555
Phone: 409-772-6370
Email: peshi@utmb.edu
<http://www.hbcg.utmb.edu/faculty/shi.asp>

From: 袁志明 <yzm@wh.iov.cn>
Sent: Monday, November 20, 2017 5:34 PM
To: LeDuc, James W.
Cc: 张晗
Subject: Re: RE: RE: List if Chinese participants

Hi, Jim,

I will collect the presentation titles of Chinese speakers and let you know soon. Prof. Li Dexin from CDC, Liang Mifang's husband, will be present for this meeting.

Regards

Zhiming

-----原始邮件-----

发件人: "LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间: 2017-11-20 23:55:25 (星期一)

收件人: "袁志明" <yzm@wh.iov.cn>

抄送: "Benjamin Rusek" <BRusek@nas.edu>, "Shi, Pei yong" <peshi@UTMB.EDU>, "David Franz" <davidrfranz@gmail.com>, "Lowenthal, Micah" <mloewent@nas.edu>, "张晗" <zhanghan@wh.iov.cn>

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(m) 637/63

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抄送: "Benjamin Rusek" <BRusek@nas.edu>, "Shi, Pei yong" <peshi@UTMB.EDU>, "David Franz" <davidrfranz@gmail.com>, "Lowenthal, Micah" <mlowenth@nas.edu>

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Galveston, Texas 77555

Phone: 409-772-6370

Email: peshi@utmb.edu

<http://www.hbcg.utmb.edu/faculty/shi.asp>

From: Shi, Pei yong
Sent: Friday, November 24, 2017 10:22 AM
To: baiyu@im.ac.cn
Cc: 'gaof@im.ac.cn'; Benjamin Rusek; LeDuc, James W.; David Franz
Subject: RE: RE: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018

Hi Yu Bai,
The conference will pay for hotel, meals during the meeting, and registration. Dr. Gao will cover the flight cost.
We look forward to George's visit!
Pei-Yong

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From: baiyu@im.ac.cn [mailto:baiyu@im.ac.cn]
Sent: Thursday, November 23, 2017 8:20 PM
To: Shi, Pei yong <peshi@UTMB.EDU>
Subject: Re: RE: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018

Dear Prof. Shi,

Hope this email finds you well. This is Yu Bai, Dr. Gao's assistant. Dr. Gao will attend the meeting of U.S. and Chinese experts and we would like to know whether the conference organizers will offer his trip airfare, accommodation and registration fees. Thanks.

Best Regards,

Yu Bai
Assistant of Professor Dr. George F Gao
CAS Key Laboratory of Pathogenic Microbiology and Immunology

Institute of Microbiology
Chinese Academy of Sciences
Beijing 100101
P.R.China
Tel: 86-10-64807688
Fax: 86-10-64807882

白玉
中国科学院微生物研究所 高福助理
北京市朝阳区北辰西路1号院3号, 100101
电话: 86-10-64807688
传真: 86-10-64807882

From: Shi, Pei yong
Date: 2017-10-18 07:43
To: 'gaof@im.ac.cn'
Subject: RE: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018

Hi George,
Hope you could attend the January meeting at UTMB. Please let me know if you need anything we should prepare.
Best,
Pei-Yong

From: Rusek, Benjamin [<mailto:BRusek@nas.edu>]
Sent: Friday, October 13, 2017 2:30 PM
To: 'gaof@im.ac.cn' <gaof@im.ac.cn>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; LeDuc, James W. <jwleduc@UTMB.EDU>; 'zhanghan' <zhanghan@wh.iov.cn>; 'David Franz' <davidrf Franz@gmail.com>; Morgan, LaTasha <LMorgan@nas.edu>; 'yzm@wh.iov.cn' <yzm@wh.iov.cn>
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Importance: High

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Kind regards,

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Senior Program Officer
Policy and Global Affairs Division
The U.S. National Academy of Sciences
Phone: 001-202-334-3975
Cell: (b)(6)
Fax: 001-202-334-1730
Skype: (b)(6)

From: baiyu@im.ac.cn
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CC: 'gaof@im.ac.cn'; Benjamin Rusek; LeDuc, James W.; David Franz
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U.S.-Japan Cooperative Medical Sciences Program (USJCMSP)
20th International Conference on Emerging Infectious Diseases (EID) in the Pacific Rim

January 8-9, 2018
Venue: The Coli Hotel
Shenzhen, China

MEETING DESCRIPTION

The focus of this conference is on the pathogenesis and protective immunity of viral diseases of importance in the Asia-Pacific region. The objectives of this conference are to share current research findings and foster existing and potential international research collaborations that engage investigators and institutions in the Asia-Pacific region and the United States.

If you will be using Twitter or Instagram, please use the hashtag #CMSPEID.

<u>Monday, 8 January 2018</u>	
7:00-8:00	Registration
8:00-8:30	WELCOME REMARKS
	Master of Ceremony: Gray Handley , Associate Director for International Research Affairs, National Institute of Allergy and Infectious Diseases (NIAID), U.S.A.
	TBD , Consulate/Embassy of Japan in China
	TBD , U.S. Consulate/Embassy in China
	George Fu Gao , Director and Professor, CAS Key Laboratory of Pathogenic Microbiology and Immunology, Institute of Microbiology, Chinese Academy of Sciences (IM/CAS)
	Diane E. Griffin , University Distinguished Service Professor, Johns Hopkins Bloomberg School of Public Health, U.S.A. / U.S. Delegation Chair, USJCMSP
	Aikichi Iwamoto , Managing Director, Department of Research Promotion, Japan Agency for Medical Research and Development (AMED), Japan
8:30-9:00	La Montagne-Heilman Lectureship Introduced by Gray Handley, NIAID, U.S.A. Mary K. Estes , Baylor College of Medicine, U.S.A.
9:00-9:30	Shimao-Takeda Lectureship Introduced by Aikichi Iwamoto, AMED, Japan Takaji Wakita , National Institute of Infectious Diseases (NIID), Japan
9:30-9:40	Announcements
9:40-10:00	Break

SESSION 1: Recent Trends of Viral Infections in Asia and the Pacific Rim	
10:00-10:20	Recent Progress in the Molecular Pathogenesis of Highly Pathogenic and Low-Grade Avian Influenza Viruses Malik Peiris , <i>The University of Hong Kong, Hong Kong SAR China</i>
10:20-10:40	Endemic Prevalence of Hepatitis Viruses in Mongolia Naranbaatar Dashdorj , <i>Onom Foundation, Mongolia</i>
10:40-11:00	Dengue Usa Thisyakorn , <i>Chulalongkorn University, Thailand</i>
11:00-11:20	Current State of ZIKV Epidemiology Scott Weaver , <i>University of Texas Medical Branch, U.S.A.</i>
11:20-11:40	HIV Prevalence in Asia Ying Ru Lo , <i>WHO Western Pacific Region (WPRO), Malaysia</i>
11:40-12:00	CCHF: Expansion in Asia Roger Hewson , <i>Public Health England, United Kingdom</i>
12:00-12:15	Q&A
12:15-13:15	Lunch Break and Poster Viewing
SESSION 2: Pathogenesis of Viral Infections	
13:15-13:35	Immune Recovery After Antiviral Cure of Chronic Hepatitis C Georg Lauer , <i>Harvard University, U.S.A.</i>
13:35-13:55	MERS Pathogenesis Mark Denison , <i>Vanderbilt University, U.S.A.</i>
13:55-14:15	Understanding of the Pathogenesis of EV71 Infection Based on the Identification of the Receptors Hiroyuki Shimizu , <i>NIID, Japan</i>
14:15-14:35	Ebola George F. Gao , <i>IM/CAS, China</i>
14:35-14:55	HIV: Cryo-EM Structures and Atomic Model of the HIV-1 Strand Transfer Complex Intasome Dmitry Lyumkis , <i>The Salk Institute, U.S.A.</i>
14:55-15:10	Q&A
15:10-15:30	Break
15:30-15:50	SFTS: Pathogenesis and Treatment Mi-Fang Liang , <i>National Institute for Viral Disease Control and Prevention, China</i>

15:50-16:10	Pathogenesis of Bat Reovirus, Emerging Zoonosis in Asia Takeshi Kobayashi , <i>Research Institute for Microbial Diseases, Japan</i>
16:10-16:30	Molecular Pathogenesis of Hepatitis B Virus Infection Wenhui Li , <i>The National Institute of Biological Sciences in Beijing, China</i>
16:30-16:50	Mother-to-Child-Transmission of Zika Virus Albert Ko , <i>Yale School of Public Health, U.S.A.</i>
16:50-17:00	Short Talk from Poster Session
17:00-17:15	Q&A
17:15-18:00	Poster Session
<u>Tuesday, 9 January 2018</u>	
SESSION 2: Pathogenesis of Viral Infections (CONTINUED)	
8:00-8:20	Immunopathogenesis in Dengue Virus Infections Alan Rothman , <i>University of Rhode Island, U.S.A.</i>
8:20-8:40	CTL and Viral Escape / HIV & HLA Diversity in Vietnam Masafumi Takiguchi , <i>Kumamoto University, Japan</i>
8:40-8:45	Q&A
SESSION 3: Hepatitis Virus Infection and Liver Cancer	
8:45-9:05	Molecular Virology and Immunology of Hepatitis B Virus Jinlin Hou , <i>Nanfang Hospital, China</i>
9:05-9:25	Antibody Therapeutics for the Treatment of Liver Cancer Mitchell Ho , <i>National Cancer Institute, U.S.A.</i>
9:25-9:45	Genomic Mutations in HCC Tatsuhiro Shibata , <i>National Cancer Center Research Institute, Japan</i>
9:45-10:05	Host Factors Related to Hepatitis Virus Infection Masashi Mizokami , <i>National Center for Global Health and Medicine, Japan</i>
10:05-10:25	Chemical-Viral Interaction Between Aflatoxin and Human Hepatitis B Virus in Induction of Liver Cancer John Groopman , <i>Johns Hopkins Bloomberg School of Public Health, U.S.A.</i>
10:25-10:45	Integrated Genomics to Identify Drivers of Human Liver Cancers Xin Wei Wang , <i>National Cancer Institute, U.S.A.</i>
10:45-11:00	Q&A

11:00-11:20	Break
SESSION 4: Vaccines	
11:20-11:40	Dengue Steve Whitehead , NIAID, U.S.A.
11:40-12:00	State of Zika Vaccines Pei-Yong Shi , University of Texas Medical Branch, U.S.A.
12:00-12:20	Ebola - Efficacy Trial and Moving the Vaccine into Other Outbreak Settings Yap Boum , Epicentre Africa, Médecins Sans Frontières, Cameroon
12:20-12:30	Q&A
FLASH TALK SESSION: 2016 USJCMSP Collaborative Awards	
12:30-12:40	Flash Talks from Recipients of a 2016 USJCMSP Collaborative Award
12:40-13:40	Lunch Break and Poster Viewing
13:40-14:00	RSV Mark Peeples The Research Institute at Nationwide Children's Hospital, U.S.A.
14:00-14:20	HIV – Thai Cohort Studies Eugène Kroon , SEARCH, Thai Red Cross AIDS Research Centre, Thailand
14:20-14:40	Universal Influenza Vaccine and Antigenic Shifts Florian Krammer , Icahn School of Medicine at Mount Sinai, U.S.A.
14:40-15:00	EV71 – Development of Vaccine and to the Market Hongjie YU , Fudan University, China
15:00-15:20	Measles-Based CHIKV Vaccine Matthias Muellner , Themis Bioscience, Austria
15:20-15:35	Q&A
15:35-15:55	Break
SESSION 5: New Approach to Define Protective Immunity and Drug Discovery	
15:55-16:15	HIV Maureen Goodenow , Office of AIDS Research, National Institutes of Health, U.S.A.
16:15-16:35	Norovirus Kazuhiko Katayama , Kitasato University, Japan

16:35-16:55	Structure-Based Zika Drug Discovery Yi Shi , <i>Beijing Institutes of Life Science, Chinese Academy of Sciences, and Shenzhen Third People's Hospital, China</i>
16:55-17:15	Nucleic Acid-Sensing TLRs for Infection and Immunity Kensuke Miyake , <i>University of Tokyo, Japan</i>
17:15-17:30	Q&A
17:30-17:55	CLOSING REMARKS
	Aikichi Iwamoto , Managing Director, Department of Research Promotion, Japan Agency for Medical Research and Development (AMED), Japan
	TBD , China
	TBD , U.S.A.
17:55	Adjournment

21 Nov 2017

Produced in Native

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Sent: Tuesday, November 28, 2017 12:48 PM
To: Shi, Pei yong; David Franz
Subject: RE: Attendance of George Gao RE: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018
Attachments: NAS-CAS mtg Galveston 2018 Draft Agenda(2).docx

Attached is the most recent draft agenda.

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Please review the attached revised agenda that includes many of the speaker that have accepted.

- We need to identify a NAS representative.
- Please note that I scheduled for 30 min talks. OK?
- Also, there are still gaps to be filled. Did we decide to invite David Swayne?
- Should we invite Kristi Murray from Houston? Not sure if there would be a cost associated—maybe not.
- Need to get confirmation of participation and title from Harbin and Kunming.

We need clarity on the budget available for coffee/dinners.

I think we need to get this fairly well fleshed out before the end of the first week of December.

Suggestions/modifications welcome.

Thanks, Jim

James W. Le Duc, Ph.D.
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09:30-10:00 Keynote talk, US—Relman (accepted)

Coffee Break and Group Photo (10:00-10:30)

10:00-10:30 Coffee Break and group photo

Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

10:30-11:00 Colleen Kraft (accepted)/NETEC/staff training

11:00-11:30 Carol Linden (FDA-accepted)

11:30-12:00 Conduct of regulated studies in biocontainment—product development

Melissa Eitzen/Trevor Brasel from UTMB?

12:00-12:30 Chinese speaker—Maybe the representative from Kunming?

Another talk or discussion or break for lunch?

Working Lunch (12:30-13:30 pm in GNL Lobby and Conference Room)

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne diseases—mosquito and tick-borne

- 13:30-14:00 Dennis Bente & Han Xia collaboration on CCHF (accepted)
14:00-14:30 Scott Weaver or others, Zika, Chik? (not yet invited)
14:30-15:00 Gong Cheng: Mosquito acquisition of arbovirus infection

Coffee Break (15:00-15:30)

- 15:00-15:30 Mifang Liang: Hemorrhagic viral pathogens in China
15:30-16:00 West Nile (Christi Murray—Baylor; longterm follow up?-not yet invited)
16:00-16:30 Pei-Yong Shi: Zika vaccine development

Dinner Le Duc home (18:30-21:00)

Wednesday, 17 Jan.

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

- 08:30-09:00 Steve Higgs BRI, Kansas (accepted)
09:00-09:30 Zhigao Bu (director, Harbin—need to confirm participation and get title)
09:30-10:00 Scientific talk on Rift Valley fever virus;
10:00-10:30 ***Coffee Break***
10:30-11:00 Scientific talk on nipah virus;
11:00-11:30 Scientific talk on Avian influenza (did we invite David Swayne?)
11:30- 12:00 others-mix of US and Chinese experts—need to identify speakers

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

- 13:00-13:30 Coronaviruses: Ralph Baric (accepted)
- 13:30-14:00 Dr Zhengli Shi (from Wuhan)—Coronavirus from bats (need to confirm participation and title)
- 14:00-14:30 Zhiming Yuan: High containment pathogens in China
- 14:30-15:00 Xi Zhou: Mammalian RNAi antiviral and host-virus interaction

Coffee Break (15:00-15:30)

- 15:30-16:00 Filovirus and other high risk pathogen product development: Geisbert (?) not yet invited
- 16:00-16:30 Dengue vaccine development: Whitehead (NIH); awaiting response
- 16:30-17:00 Open discussion or another talk?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 Jan.

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations

Corrie/Miguel/

Biotechnology advances—Need speaker

Open Philanthropies—Yassif? Invitation extended but probably not able to attend

Need to work on speakers for this session.

Coffee Break (10:00-10:30)

Session 6. Optional Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

-Clinical biocontainment rooms

-GNL and Keiller insectaries

Closing Comments (11:45-12:00)

Comments from NAS/CAS

Signing of MOUs?

Press conference?

Working Lunch (12:00-13:00 GNL Lobby and Conference Rooms)

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek; (red indicates funded by NAS)

From: 袁志明 <yzm@wh.iov.cn>
Sent: Monday, December 4, 2017 6:26 PM
To: LeDuc, James W.
Cc: Shi, Pei yong;张晗;金凤银;Benjamin Rusek
Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

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I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏茵" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

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With best wishes,

Jim

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Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏菡 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

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Thanks for your help!

All the best,

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Thanks for your help!

All the best,

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From: LeDuc, James W.
Sent: Monday, December 4, 2017 8:28 PM
To: 袁志明
Cc: Shi, Pei yong;张晗;金凤银;Benjamin Rusek
Subject: Re: question about visit your IBTC and GNL

Thank you for the update Zhiming. We're still working on the agenda and I will send as soon as we finalize.

I will be at the meeting in Lyon and I look forward to seeing you there.

Best wishes

Jim

Sent from my iPhone

On Dec 4, 2017, at 6:25 PM, 袁志明 <yzm@wh.iov.cn> wrote:

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发送时间: 2017-12-04 22:06:50 (星期一)

收件人: "夏菡" <hanxia@wh.iov.cn>

抄送: "袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M."

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From: LeDuc, James W.
Sent: Tuesday, December 5, 2017 10:03 AM
To: Shi, Pei yong; Benjamin Rusek
Cc: 张晗;袁志明;金凤银;Dave Franz (davidrf Franz@gmail.com)
Subject: RE: RE: question about visit your IBTC and GNL

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Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

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发送时间: 2017-12-04 22:06:50 (星期一)

收件人: "夏菡" <hanxia@wh.iov.cn>

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All the best,

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Sent: Tuesday, December 5, 2017 12:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong;张晗;袁志明;金凤银;Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

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Benjamin Rusek <BRusek@nas.edu>

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Thanks for your help!

All the best,

https://www.utsystem.edu/utopen

Han

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Wednesday, December 6, 2017 6:16 PM
To: LeDuc, James W.; Shi, Pei yong; 张晗
Cc: 袁志明; 金凤银; Dave Franz (davidrfranz@gmail.com)
Subject: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b)(6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu w
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Chen
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu v
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	Visa more than 9 months in
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu v
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is contac
(b)(6)		y	?		No response, Li Dexin's stud
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek
 The U.S. National Academy of Sciences
 1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.

Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)

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From: 袁志明 [mailto:yzm@wh.iov.cn]

Sent: Monday, December 04, 2017 6:26 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>;

Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

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YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
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发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

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CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	Visa more than 9 months i
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is conta
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The U.S. National Academy of Sciences

1-202-334-3975

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Sent: Tuesday, December 05, 2017 1:15 PM

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Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)

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Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

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To: Rusek, Benjamin
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YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is contac
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1-202-334-3975

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I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

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发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

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James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)

From: 夏菡 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

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Thanks for your help!

All the best,

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CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 1
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris)
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming
Li	Dexin	y	y		on 12/15 franz said
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 1
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 1
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave
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1-202-334-3975

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Yes and yes for DAVID Swayne and Steve Whitehead.

Thanks. Jim

Sent from my iPhone

On Dec 7, 2017, at 1:30 AM, Rusek, Benjamin <BRusek@nas.edu> wrote:

Greetings,

Just so we are all on the same page, as far as I know these are the Americans who have agreed to attend:

Ralph	Baric
Stephen	Higgs
Colleen	Kraft
Carol	Linden
David	Relman

Along with Franz, and maybe Jamie Yassif for one or two days. Am I missing anyone?

Who else from the U.S. (outside of Galveston) do you want to invite?

Happy to invite Steve Whitehead as Jim says, also David Swayne?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 06, 2017 7:16 PM
To: LeDuc, James W.; Shi, Pei yong; 张晗
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抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia"

<anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>,

"Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie"

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Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

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Sent: Monday, December 04, 2017 12:49 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 袁院长 <yzm@wh.iov.cn>
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Thanks for your help!

All the best,

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From: LeDuc, James W.
Sent: Thursday, December 7, 2017 4:43 AM
To: Rusek, Benjamin
Cc: Shi, Pei yong; Dave Franz (davidrf Franz@gmail.com); Morgan, LaTasha
Subject: Re: question about visit your IBTC and GNL

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Sent from my iPhone

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1-202-334-3975

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CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming s
CHENG	CAO	y	y	(b)(6)	said yes to franz on
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) V
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming s
Li	Dexin	y	y		on 12/15 franz said
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming s
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave
(b)(6)	(b)(6)	y	?		No response, Li Dex
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

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GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Z
Li	Dexin	y	y		on 12/15 fr
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Z
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to
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SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe
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Attachments: NAS-CAS mtg Galveston Draft agent Nov 29 2017 bjr edit.docx

Greetings,

Here are my comments on the agenda (in track changes), please feel free to add/subtract/edit.

PS Embassy Beijing has requested more info about the meeting (to help expedite visas) so I would like to get them a draft agenda as soon as we can.

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From: Rusek, Benjamin
Sent: Wednesday, December 06, 2017 7:38 PM
To: 'LeDuc, James W.'; 'Shi, Pei yong'; 'Dave Franz (davidrf Franz@gmail.com)'
Subject: RE: question about visit your IBTC and GNL

And one other quick question. What do you want to formally call the event?

The Third China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security?
Something else?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 06, 2017 7:31 PM
To: 'LeDuc, James W.'; 'Shi, Pei yong'
Cc: 'Dave Franz (davidrf Franz@gmail.com)'; Morgan, LaTasha
Subject: RE: question about visit your IBTC and GNL
Importance: High

Greetings,

Just so we are all on the same page, as far as I know these are the Americans who have agreed to attend:

Ralph	Baric
Stephen	Higgs
Colleen	Kraft
Carol	Linden
David	Relman

Along with Franz, and maybe Jamie Yassif for one or two days. Am I missing anyone?

Who else from the U.S. (outside of Galveston) do you want to invite?

Happy to invite Steve Whitehead as Jim says, also David Swayne?

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 06, 2017 7:16 PM
To: LeDuc, James W.; Shi, Pei yong; 张晗
Cc: 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b)(6) Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu w
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Chen
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu v
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu v
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader

SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is contact
(b)(6)		y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrfranz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong
Sent: Monday, December 04, 2017 8:27 PM
To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,
Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,
It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人: "LeDuc, James W." <jwleduc@UTMB.EDU>
发送时间: 2017-12-04 22:06:50 (星期一)
收件人: "夏菡" <hanxia@wh.iov.cn>
抄送: "袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>
主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating

in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏菡 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han



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**U.S. China Dialogue on the Challenges of Emerging Infections,
Laboratory Safety and Global Health Security**

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (at hotel?)

Tuesday, 16 January

08:00-10:00 Welcome and Opening Presentations

08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30-09:00 Welcome, Introductions, Opening Remarks

Welcome to UTMB— David L. Callender, President, University of Texas
Medical Branch (UTMB Health)

Welcome to GNL— James Le Duc, director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences

09:00-09:30 Keynote address, China, George (Fu) Gao, director, Chinese Center for
Disease Control and Chinese Academy of Sciences

09:30-10:00 Keynote talk, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

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Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

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11:00-11:30 Conduct of regulated studies and product development in biocontainment, Carol Linden, FDA

11:30-12:00 Melissa Eitzen/Trevor Brasel from UTMB?

12:00-12:30 (presentation title) Longding Liu, Kunming Institute of Medical Biology

Another talk or discussion or break for lunch?

12:30-13:30 pm Working Lunch

GNL Lobby and Conference Room

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne (mosquito and tick-borne) diseases

13:30-14:00 Dennis Bente & Han Xia collaboration on CCHF

14:00-14:30 Scott Weaver or others, Zika, Chik? (not yet invited)

14:30-15:00 Mosquito acquisition of arbovirus infection, Gong Cheng, Tsinghua University

Coffee Break (15:00-15:30)

15:00-15:30 Hemorrhagic viral pathogens in China, Mifang Liang, Chinese Center for Disease Control

15:30-16:00 West Nile (Christi Murray—Baylor; longterm follow up?-not yet invited)

16:00-16:30 Zika vaccine development, Pei-Yong Shi, UTMB

18:30-21:00 Dinner

Le Duc home

Wednesday, 17 January

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

08:30-09:00 Research and operations at the BRI agriculture biocontainment laboratory, Steve Higgs BRI, Kansas

09:00-09:30 (presentation title) Zhigao Bu, director, Harbin Veterinary Research Institute

09:30-10:00 Scientific talk on Rift Valley fever virus;

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10:00-10:30 **Coffee Break**

10:30-11:00 Scientific talk on nipah virus;

11:00-11:30 Avian influenza and collaborating on influenza, David Swayne (invited)

11:30- 12:00 others-mix of US and Chinese experts—need to identify speakers

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

13:00-13:30 Coronaviruses, Ralph Baric

13:30-14:00 Coronavirus from bats, Zhengli Shi, Wuhan Institute of Virology

14:00-14:30 High containment pathogens in China, Zhiming Yuan, Wuhan Institute of Virology

14:30-15:00 Mammalian RNAi antiviral and host-virus interaction, Xi Zhou, State Key Laboratory of Virology, Wuhan Institute of Virology

Coffee Break (15:00-15:30)

15:30-16:00 Filovirus and other high risk pathogen product development, Geisbert (?) not yet invited

16:00-16:30 Dengue vaccine development, Stephen Whitehead (NIH), (invited)

16:30-17:00 Open discussion or another talk?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 January

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations, Corrie/Miguel/

Biotechnology advances—Need speaker

Open Philanthropies—Yassif? (invited, probably not able to attend)

Need to work on speakers for this session (Franz? Zhigao Bu? Other Chinese speakers?)

Coffee Break (10:00-10:30)

Session 6. Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

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-Clinical biocontainment rooms

-GNL and Keiller insectaries

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of MOUs?

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek; (red indicates issue to address)

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Dr Zhengli Shi (from Wuhan)—

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**U.S. China Dialogue on the Challenges of Emerging Infections,
Laboratory Safety and Global Health Security**

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

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08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

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Welcome to UTMB— David L. Callender, President, University of Texas
Medical Branch (UTMB Health)

Welcome to GNL— James Le Duc, director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences

09:00-09:30 Keynote address, China, George (Fu) Gao, director, Chinese Center for
Disease Control and Chinese Academy of Sciences

09:30-10:00 Keynote talk, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

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Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

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Le Duc home

Wednesday, 17 January

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DRAFT 12-7-17

10:00-10:30 **Coffee Break**

10:30-11:00 Scientific talk on nipah virus;

11:00-11:30 Avian influenza and collaborating on influenza, David Swayne (invited)

11:30- 12:00 others-mix of US and Chinese experts—need to identify speakers

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

13:00-13:30 Coronaviruses, Ralph Baric

13:30-14:00 Coronavirus from bats, Zhengli Shi, Wuhan Institute of Virology

14:00-14:30 High containment pathogens in China, Zhiming Yuan, Wuhan Institute of Virology

14:30-15:00 Mammalian RNAi antiviral and host-virus interaction, Xi Zhou, State Key Laboratory of Virology, Wuhan Institute of Virology

Coffee Break (15:00-15:30)

15:30-16:00 Filovirus and other high risk pathogen product development, (Geisbert, not yet invited)

16:00-16:30 Dengue vaccine development, Stephen Whitehead (NIH), (invited)

16:30-17:00 Open discussion or another talk?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 January

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations, Corrie/Miguel/

Biotechnology advances—Need speaker

Open Philanthropy—Jaime Yassif (invited)

Need to work on speakers for this session (Franz? Zhigao Bu? Other Chinese speakers?)

Coffee Break (10:00-10:30)

Session 6. Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

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DRAFT 12-7-17

-Clinical biocontainment rooms

-GNL and Keiller insectaries

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of MOUs?

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek; (red indicates issue TBD)

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From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Sunday, December 10, 2017 9:48 PM
To: 'David Franz'; Shi, Pei yong
Cc: Lowenthal, Micah; LeDuc, James W.
Subject: RE: GNL Lab Meeting Invitation
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2.docx

Hi Dave,

Should these changes go on top of the agenda draft I made late last week? (attached, with no track changes). If so I will incorporate them into that draft and send it out to the group.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: David Franz [mailto:davidfranz@gmail.com]
Sent: Sunday, December 10, 2017 6:16 PM
To: Shi, Pei yong
Cc: Rusek, Benjamin; Lowenthal, Micah; James W. LeDuc
Subject: Re: GNL Lab Meeting Invitation

Ok, Will do what I can. Safe travels. **Below are what appear to be the holes.** d

Tuesday, 16th

1. Talk or no-talk after Longding's 12:30 talk—I say go to lunch
2. 14:00—Pei-Yong—What do you think of inviting Scott to speak here?
3. 15:00—I don't think we can count on Mifang (re. VISA)
Are all the Chinese already assigned?
Anyone at UTMB who can do this Hemorrhagic Fever talk
4. 15:30—Ben, did I see that Christi Murray said “no”....or was it “yes”?

Wednesday, 17th

1. Pei-yong, can you ask Zhigao Bu for a title?
2. 9:30—Rift talk—Is John Morrill still around or could he come out for this talk?
3. 10:30—Nipah talk—How about Ksiazek give this talk?
4. 11:00—David S has asked USDA for approval to come; let's wait to hear from him
5. 11:30—How about all the speakers in this session do a panel on “Ag Biocontainment issues”?
6. 15:30—I say go with Tom G for filovirus and other high risk pathogen product development
7. 16:00—Ben, what did we hear from Whitehead? I recall a “not available”. If so can we invite someone from WRAIR on Dengue etc. ...of Pie-yong, could you do this talk...on something you didn't cover in Wuhan?
8. 16:30—Open discussion

Thursday, 18th

1. 8:30—Pei-yong, can you pick Corrie or Miguel and ask them to do a training talk...or ask Tom K who to use?
2. 9:00—Biotech Advances———Maybe we drop this one??
3. 9:30—How about we have the four BSL-4 Directors lead a discussion on training needs?

David R. Franz DVM, Ph.D



On Dec 10, 2017, at 2:40 PM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

I'm going to be out of the office all week so please try to finalize the agenda as you see fit.

Thanks. Jim

Sent from my iPhone

On Dec 10, 2017, at 8:26 AM, David Franz <davidrf Franz@gmail.com> wrote:

Regrets from Cheng Cao below, dave

David R. Franz DVM, Ph.D



Begin forwarded message:

From: caoc@bmi.ac.cn

Subject: Re: GNL Lab Meeting Invitation

Date: December 10, 2017 at 3:18:04 AM EST

To: "david franz" <davidrf Franz@gmail.com>

Dear Dave,

I really hope I can meet you there, but I'm afraid that I am not able to join you in January because it usually take 3 or more months for us to obtain the government approval and US Visa.

Best,

Cheng

-----原始邮件-----

发件人:"David Franz" <davidrfranz@gmail.com>

发送时间:2017-12-07 02:58:25 (星期四)

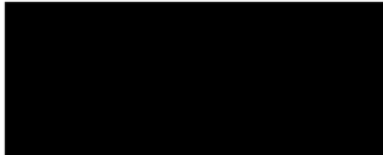
收件人: "cao cheng" <cao_c@yahoo.com>, "Cheng Cao" <caoc@nic.bmi.ac.cn>

抄送: "Benjamin Rusek" <BRusek@nas.edu>

主题: GNL Lab Meeting Invitation

Dear Cheng, Just a note to see if you can confirm that you will be able to join us in Texas the week of 15 January. I hope you will be able to be there. I've attached the letter of invitation again. Best, dave

David R. Franz DVM, Ph.D



Begin forwarded message:

From: "Rusek, Benjamin" <BRusek@nas.edu>

Subject: FW: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018

Date: December 6, 2017 at 7:17:18 PM EST

To: "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

Tuesday, 16 January

08:00-10:00 Welcome and Opening Presentations

08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30-09:00 Welcome, Introductions, Opening Remarks

Welcome to UTMB— David L. Callender, President, University of Texas
Medical Branch (UTMB Health)

Welcome to GNL— James Le Duc, director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences

09:00-09:30 Keynote address, China, George (Fu) Gao, director, Chinese Center for
Disease Control and Chinese Academy of Sciences

09:30-10:00 Keynote talk, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

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Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

DRAFT 12-7-17

- 10:30-11:00 The care and management of Ebola patients, Colleen Kraft, Emory University Medical School
- 11:00-11:30 Conduct of regulated studies and product development in biocontainment, Carol Linden, FDA
- 11:30-12:00 Melissa Eitzen/Trevor Brasel from UTMB?
- 12:00-12:30 (presentation title) Longding Liu, Kunming Institute of Medical Biology
- Another talk or discussion or break for lunch?

12:30-13:30 pm Working Lunch

GNL Lobby and Conference Room

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne (mosquito and tick-borne) diseases

- 13:30-14:00 Dennis Bente & Han Xia collaboration on CCHF
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18:30-21:00 Dinner

Le Duc home

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NAS Team: Franz; Rusek; (red indicates issue TBD)

DRAFT

From: LeDuc, James W.
Sent: Monday, December 11, 2017 9:29 AM
To: Jacobs, Danny O.
Cc: Shi, Pei yong; Dave Franz (davidrf Franz@gmail.com); Benjamin Rusek (BRusek@nas.edu); Holubar, Connie J.; Guerra, Analilia; Moreno, Michelle E.
Subject: Welcome comments 16 Jan?
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2.docx

Dear Dr Jacobs,

We will be hosting the third US-China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security here at the GNL on 16-18 January 2018. The current draft agenda is attached. The meeting is sponsored by the US National Academy of Sciences in association with the Chinese Academy of Sciences and invitees will include representatives of the three Chinese BSL4 laboratories that have been constructed and are about to begin formal operations.

Dr Callender had originally agreed to make some brief welcoming remarks but unfortunately his schedule has changed and he can no longer welcome our distinguished colleagues. I wonder if you could fit in some time to make brief welcoming remarks to the group on Tuesday morning, 16 January 2018 at about 8:30 am. We will help prepare brief comments for you if you like and we are looking for only about 5 minutes.

Thank you,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

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DRAFT

From: LeDuc, James W.
Sent: Monday, December 11, 2017 10:17 AM
To: Niesel, David W.
Cc: Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Benjamin Rusek (BRusek@nas.edu); Guerra, Analilia; Holubar, Connie J.
Subject: US-China meeting intro 16 Jan?
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2.docx

Dear Dr Niesel,

We will be hosting the third US-China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security here at the GNL on 16-18 January 2018. The current draft agenda is attached. The meeting is sponsored by the US National Academy of Sciences in association with the Chinese Academy of Sciences and invitees will include representatives of the three Chinese BSL4 laboratories that have been constructed and are about to begin formal operations.

Dr Callender had originally agreed to make some brief welcoming remarks but unfortunately his schedule has changed and he can no longer welcome our distinguished colleagues. I wonder if you could fit in some time to make brief welcoming remarks to the group on Tuesday morning, 16 January 2018 at about 8:30 am. We will help prepare brief comments for you if you like and we are looking for only about 5 minutes.

Thank you,

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

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08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30-09:00 Welcome, Introductions, Opening Remarks

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Medical Branch (UTMB Health)

Welcome to GNL— James Le Duc, director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences

09:00-09:30 Keynote address, China, George (Fu) Gao, director, Chinese Center for
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09:30-10:00 Keynote talk, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

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Clinical management of high risk patients

DRAFT 12-7-17

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- 11:30-12:00 Melissa Eitzen/Trevor Brasel from UTMB?
- 12:00-12:30 (presentation title) Longding Liu, Kunming Institute of Medical Biology
- Another talk or discussion or break for lunch?

12:30-13:30 pm Working Lunch

GNL Lobby and Conference Room

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18:30-21:00 Dinner

Le Duc home

Wednesday, 17 January

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16:30-17:00 Open discussion or another talk?

Bus to Hotel

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Thursday, 18 January

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Training in biosafety, biosecurity and facilities operations, Corrie/Miguel/

Biotechnology advances—Need speaker

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-Biosafety training center

DRAFT 12-7-17

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Sent: Monday, December 11, 2017 11:17 AM
To: kmurray@bcm.edu
Cc: Benjamin Rusek (BRusek@nas.edu); Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Guerra, Analilia; Holubar, Connie J.
Subject: Invitation to speak
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2.docx

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I would like to invite you to offer a presentation on your follow up work with West Nile virus patients on Tuesday, 16 January 2018 from 15:30-16:00. Please plan on talking for about 20 minutes and leaving the remainder of time for discussion. I am sure that the group will be fascinated with your recent findings.

Ben Rusek from the U. S. National Academy of Sciences will follow up with you on details and I'm happy to discuss informally by phone—unfortunately I don't have your new number.

I hope that you will be able to join us!

With best regards,

Jim

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Wednesday, 17 January

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To: Freiberg, Alexander N.
Cc: Benjamin Rusek (BRusek@nas.edu); Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong; Guerra, Analilia; Holubar, Connie J.
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DRAFT 12-7-17

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12:30-13:30 pm Working Lunch

GNL Lobby and Conference Room

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Vector-borne (mosquito and tick-borne) diseases

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18:30-21:00 Dinner

Le Duc home

Wednesday, 17 January

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11:30- 12:00 Panel discussion on Agricultural Research in Biocontainment (all speakers)

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

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16:00-16:30 Dengue vaccine development—need speaker

16:30-17:00 Open discussion or another talk?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 January

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Training in biosafety, biosecurity and facilities operations, Corrie/Miguel-UTMB/(invited)

Biotechnology advances—Need speaker

Open Philanthropy—Jaime Yassif (invited)

Need to work on speakers for this session (Franz? Zhigao Bu? Other Chinese speakers?)

Coffee Break (10:00-10:30)

Session 6. Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of MOUs?

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek; (red indicates issue TBD)

DRAFT

From: LeDuc, James W.
Sent: Monday, December 11, 2017 11:40 AM
To: Geisbert, Thomas W.
Cc: Dave Franz (davidrfranz@gmail.com); Benjamin Rusek (BRusek@nas.edu); Shi, Pei yong; Holubar, Connie J.; Guerra, Analilia
Subject: Invitation to speak
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2 (004).docx

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I would like to invite you to offer a presentation on your work on high risk pathogen product development on Wednesday, 17 January 2018 from 15:30-16:00. Please plan on talking for about 20 minutes and leaving the remainder of time for discussion. I am sure that the group will be fascinated by your recent advances in the field. This will be in a session dedicated to Recent Advances in Research on High Hazard Pathogens.

Ben Rusek from the U. S. National Academy of Sciences will follow up with you on details and I'm happy to discuss informally at your convenience.

I hope that you will be able to join us!

Jim

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(m) (b)(6)



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Cc: Benjamin Rusek (BRusek@nas.edu);Dave Franz (davidrf Franz@gmail.com);Shi, Pei yong;Holubar, Connie J.;Guerra, Analilia
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Pei Yong and I are happy to discuss informally at your convenience.

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DRAFT 12-7-17

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Thursday, 18 January

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-Biosafety training center

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of MOUs?

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek; (red indicates issue TBD)

DRAFT

From: LeDuc, James W. <jwleduc@UTMB.EDU>
Sent: Monday, December 11, 2017 11:57 AM
To: Weaver;Scott
Cc: Benjamin Rusek (BRusek_nas.edu);Dave Franz (davidrf Franz_gmail.com);Shi;Pei yong;Guerra;Analilia;Holubar;Connie J.
Subject: US-China meeting
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2 (004).docx

Hi Scott,

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I would like to invite you to offer a presentation on your work on vector-borne viruses on Tuesday, 16 January 2018 from 14:00-14:30. Please plan on talking for about 20 minutes and leaving the remainder of time for discussion. I am sure that the group will be fascinated by your recent advances in the field. This will be in a session dedicated to Vector-borne Diseases.

Pei Yong and I are happy to discuss informally at your convenience.

I hope that you will be able to join us!

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) 63763



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

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Le Duc home

Wednesday, 17 January

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NAS Team: Franz; Rusek; (red indicates issue TBD)

DRAFT

From: LeDuc, James W.
Sent: Monday, December 11, 2017 12:02 PM
To: Eitzen, Melissa M.;Brasel, Trevor
Cc: Benjamin Rusek (BRusek@nas.edu);Dave Franz (davidrf Franz@gmail.com);Shi, Pei yong;Guerra, Analilia;Holubar, Connie J.
Subject: Invitation to speak
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2 (004).docx

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Ben Rusek from the U. S. National Academy of Sciences will follow up with you on details and I'm happy to discuss informally at your convenience.

I hope that you will be able to join us!

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
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(m) (b)(6)



NATIONAL ACADEMY OF SCIENCES



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NAS Team: Franz; Rusek; (red indicates issue TBD)

DRAFT

From: Shi, Pei yong
Sent: Monday, December 11, 2017 3:57 PM
To: LeDuc, James W.;David Franz;Benjamin Rusek
Cc: Micah Lowenthal
Subject: RE: GNL Lab Meeting Invitation
Attachments: NAS-CAS mtg Galveston Draft agent 12-11-17.docx

Dear all,
I have added another speaker (Dr. Shinji Makino from UTMB) on coronavirus.
We don't need speaker on dengue vaccine any more.
We still need to add Dexing Li to the agenda (to replace Mifang?).
Please see the updated agenda.
Thanks.
Pei-Yong

From: LeDuc, James W.
Sent: Monday, December 11, 2017 12:18 PM
To: David Franz <davidrf Franz@gmail.com>; Benjamin Rusek <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>
Cc: Micah Lowenthal <mlowenth@nas.edu>
Subject: RE: GNL Lab Meeting Invitation

I spoke to Pei Yong this morning about the draft agenda and I have since sent our invitations to the UTMB folks we had penciled in. I copied everyone on the notes and it looks like everyone from here will be able to join us with the exception of Scott Weaver—I have not yet heard from him. I have also not heard back from Kristy Murray at Baylor.

Pei Yong will follow up with the Chinese tomorrow (Tuesday) so that we should be able to flesh out their presentations soon.

We still need to resolve a speaker on Dengue vaccine and there is still another slot to fill. Note that Tom Geisbert may be able to add a second topic if needed, and Bobo Paessler from UTMB is doing some exciting work on Lassa in Nigeria that he may be willing to discuss (not sure as this is just getting started and he may be reluctant to talk too much about it quite yet.)

We also still need to work on the Thursday morning session.

I'll be at the WHO meeting of BSL4 lab directors the remainder of the week but will try to follow and contribute by email.

Thanks, Jim

From: David Franz [<mailto:davidrf Franz@gmail.com>]
Sent: Monday, December 11, 2017 11:29 AM
To: Benjamin Rusek <BRusek@nas.edu>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; Micah Lowenthal <mlowenth@nas.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>
Subject: Re: GNL Lab Meeting Invitation

Ben, I actually meant for this to be a worksheet which might allow us to focus on the holes and then, as we find answers, we could update the agenda. If someone has a better approach I'm happy to adopt it. d

David R. Franz DVM, Ph.D



On Dec 10, 2017, at 10:47 PM, Rusek, Benjamin <BRusek@nas.edu> wrote:

Hi Dave,

Should these changes go on top of the agenda draft I made late last week? (attached, with no track changes). If so I will incorporate them into that draft and send it out to the group.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: David Franz [<mailto:davidrf Franz@gmail.com>]
Sent: Sunday, December 10, 2017 6:16 PM
To: Shi, Pei yong
Cc: Rusek, Benjamin; Lowenthal, Micah; James W. LeDuc
Subject: Re: GNL Lab Meeting Invitation

Ok, Will do what I can. Safe travels. **Below are what appear to be the holes.** d

Tuesday, 16th

1. Talk or no-talk after Longding's 12:30 talk—I say go to lunch
2. 14:00—Pei-Yong—What do you think of inviting Scott to speak here?
3. 15:00—I don't think we can count on Mifang (re. VISA)
Are all the Chinese already assigned?
Anyone at UTMB who can do this Hemorrhagic Fever talk
4. 15:30—Ben, did I see that Christi Murray said “no”....or was it “yes”?

Wednesday, 17th

1. Pei-yong, can you ask Zhigao Bu for a title?
2. 9:30—Rift talk—Is John Morrill still around or could he come out for this talk?
3. 10:30—Nipah talk—How about Ksiazek give this talk?
4. 11:00—David S has asked USDA for approval to come; let's wait to hear from him
5. 11:30—How about all the speakers in this session do a panel on “Ag Biocontainment issues”?

6. 15:30—I say go with Tom G for filovirus and other high risk pathogen product development
7. 16:00—Ben, what did we hear from Whitehead? I recall a “not available”. If so can we invite someone from WRAIR on Dengue etc. ...of Pie-yong, could you do this talk...on something you didn't cover in Wuhan?
8. 16:30—Open discussion

Thursday, 18th

1. 8:30—Pei-yong, can you pick Corrie or Miguel and ask them to do a training talk...or ask Tom K who to use?
2. 9:00—Biotech Advances—————Maybe we drop this one??
3. 9:30—How about we have the four BSL-4 Directors lead a discussion on training needs?

David R. Franz DVM, Ph.D



On Dec 10, 2017, at 2:40 PM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

I'm going to be out of the office all week so please try to finalize the agenda as you see fit.

Thanks. Jim

Sent from my iPhone

On Dec 10, 2017, at 8:26 AM, David Franz <davidrf Franz@gmail.com> wrote:

Regrets from Cheng Cao below, dave

David R. Franz DVM, Ph.D



Begin forwarded message:

From: caoc@bmi.ac.cn
Subject: Re: GNL Lab Meeting Invitation
Date: December 10, 2017 at 3:18:04 AM EST
To: "david franz" <davidrf Franz@gmail.com>

Dear Dave,

I really hope I can meet you there, but I'm afraid that I am not able to join you in January because it usually takes 3 or more months for us to obtain the government approval and US Visa.

Best,
Cheng

-----原始邮件-----

发件人: "David Franz" <davidrf Franz@gmail.com>

发送时间: 2017-12-07 02:58:25 (星期四)

收件人: "cao cheng" <cao_c@yahoo.com>, "Cheng Cao" <caoc@nic.bmi.ac.cn>

抄送: "Benjamin Rusek" <BRusek@nas.edu>

主题: GNL Lab Meeting Invitation

Dear Cheng, Just a note to see if you can confirm that you will be able to join us in Texas the week of 15 January. I hope you will be able to be there. I've attached the letter of invitation again. Best, dave

David R. Franz DVM, Ph.D



Begin forwarded message:

From: "Rusek, Benjamin" <BRusek@nas.edu>

Subject: FW: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018

Date: December 6, 2017 at 7:17:18 PM EST

To: "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

<NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2.docx>



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DRAFT 12-7-17

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To: 'David Franz'; Shi, Pei yong; LeDuc, James W.
Cc: Lowenthal, Micah
Subject: RE: GNL Lab Meeting Invitation
Attachments: NAS-CAS mtg Galveston Draft agent 12-11-17 for Embassy.docx

Greetings,

I modified a draft of the agenda to include everyone we invited from China (might want to take a look at the last session). I sent it with the table below to my contacts at the US Embassy in Beijing to hopefully help expedite visa processing for the group.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

Family name	Given name	Invited	Email	Affiliation
BU	ZHIGAO	y	buzhigao@caas.cn	Harbin Veterinary Research Institute
CHEN	XINWEN	y	chenxl@wh.iov.cn	Wuhan Institute of Virology
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn	Tsinghua University
GAO	FU (George)	y	gaof@im.ac.cn	Chinese Center for Disease Control and Prevention
HU	YUNZHANG	y	(b)(6)	Kunming Institute of Medical Biology
Li	Dexin	y	dexinli@public.bta.net.cn	National Institute for Viral Disease Control and Prevention
LIANG	MIFANG	y	mifangl@vip.sina.com	Chinese Center for Disease Control and Prevention
LIU	LONGDING	y	(b)(6)	Kunming Institute of Medical Biology
SHI	ZHENGLI	y	zshi@wh.iov.cn	Wuhan Institute of Virology
XI	ZHOU	y	zhouxi@wh.iov.cn	State Key Laboratory of Virology Wuhan Institute of Virology
YUAN	ZHIMING	y	yzm@wh.iov.cn	Wuhan Institute of Virology
SUN	HUI	y	sunhui@cashq.ac.cn	Chinese Academy of Sciences
(b)(6)		y		National Institute for Viral Disease Control and Prevention

From: David Franz [mailto:davidrf Franz@gmail.com]
Sent: Monday, December 11, 2017 9:31 PM
To: Shi, Pei yong
Cc: James W. LeDuc; Rusek, Benjamin; Lowenthal, Micah
Subject: Re: GNL Lab Meeting Invitation

Good catch on Dexin, Pei-Yong. When I talked with her last, he was still planning to come. Thanks, dave

David R. Franz DVM, Ph.D



On Dec 11, 2017, at 4:57 PM, Shi, Pei yong <peshi@UTMB.EDU> wrote:

Dear all,
I have added another speaker (Dr. Shinji Makino from UTMB) on coronavirus.
We don't need speaker on dengue vaccine any more.
We still need to add Dexing Li to the agenda (to replace Mifang?).
Please see the updated agenda.
Thanks.
Pei-Yong

From: LeDuc, James W.

Sent: Monday, December 11, 2017 12:18 PM

To: David Franz <davidrfranz@gmail.com>; Benjamin Rusek <BRusek@nas.edu>; Shi, Pei yong <peshi@UTMB.EDU>

Cc: Micah Lowenthal <mloventh@nas.edu>

Subject: RE: GNL Lab Meeting Invitation

I spoke to Pei Yong this morning about the draft agenda and I have since sent our invitations to the UTMB folks we had penciled in. I copied everyone on the notes and it looks like everyone from here will be able to join us with the exception of Scott Weaver—I have not yet heard from him. I have also not heard back from Kristy Murray at Baylor.

Pei Yong will follow up with the Chinese tomorrow (Tuesday) so that we should be able to flesh out their presentations soon.

We still need to resolve a speaker on Dengue vaccine and there is still another slot to fill. Note that Tom Geisbert may be able to add a second topic if needed, and Bobo Paessler from UTMB is doing some exciting work on Lassa in Nigeria that he may be willing to discuss (not sure as this is just getting started and he may be reluctant to talk too much about it quite yet.)

We also still need to work on the Thursday morning session.

I'll be at the WHO meeting of BSL4 lab directors the remainder of the week but will try to follow and contribute by email.

Thanks, Jim

From: David Franz [<mailto:davidrfranz@gmail.com>]

Sent: Monday, December 11, 2017 11:29 AM

To: Benjamin Rusek <BRusek@nas.edu>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; Micah Lowenthal <mloventh@nas.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>

Subject: Re: GNL Lab Meeting Invitation

Ben, I actually meant for this to be a worksheet which might allow us to focus on the holes and then, as we find answers, we could update the agenda. If someone has a better approach I'm happy to adopt it. d

David R. Franz DVM, Ph.D



On Dec 10, 2017, at 10:47 PM, Rusek, Benjamin <BRusek@nas.edu> wrote:

Hi Dave,

Should these changes go on top of the agenda draft I made late last week? (attached, with no track changes). If so I will incorporate them into that draft and send it out to the group.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: David Franz [<mailto:davidrf Franz@gmail.com>]
Sent: Sunday, December 10, 2017 6:16 PM
To: Shi, Pei yong
Cc: Rusek, Benjamin; Lowenthal, Micah; James W. LeDuc
Subject: Re: GNL Lab Meeting Invitation

Ok, Will do what I can. Safe travels. **Below are what appear to be the holes.** d

Tuesday, 16th

1. Talk or no-talk after Longding's 12:30 talk—I say go to lunch
2. 14:00—Pei-Yong—What do you think of inviting Scott to speak here?
3. 15:00—I don't think we can count on Mifang (re. VISA)
Are all the Chinese already assigned?
Anyone at UTMB who can do this Hemorrhagic Fever talk
4. 15:30—Ben, did I see that Christi Murray said “no”...or was it “yes”?

Wednesday, 17th

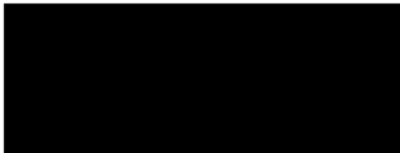
1. Pei-yong, can you ask Zhigao Bu for a title?
2. 9:30—Rift talk—Is John Morrill still around or could he come out for this talk?
3. 10:30—Nipah talk—How about Ksiazek give this talk?
4. 11:00—David S has asked USDA for approval to come; let's wait to hear from him
5. 11:30—How about all the speakers in this session do a panel on “Ag Biocontainment issues”?
6. 15:30—I say go with Tom G for filovirus and other high risk pathogen product development

7. 16:00—Ben, what did we hear from Whitehead? I recall a “not available”. If so can we invite someone from WRAIR on Dengue etc. ...of Pie-yong, could you do this talk...on something you didn't cover in Wuhan?
8. 16:30—Open discussion

Thursday, 18th

1. 8:30—Pei-yong, can you pick Corrie or Miguel and ask them to do a training talk...or ask Tom K who to use?
2. 9:00—Biotech Advances—Maybe we drop this one??
3. 9:30—How about we have the four BSL-4 Directors lead a discussion on training needs?

David R. Franz DVM, Ph.D



On Dec 10, 2017, at 2:40 PM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

I'm going to be out of the office all week so please try to finalize the agenda as you see fit.

Thanks. Jim

Sent from my iPhone

On Dec 10, 2017, at 8:26 AM, David Franz <davidrf Franz@gmail.com> wrote:

Regrets from Cheng Cao below, dave

David R. Franz DVM, Ph.D



Begin forwarded message:

From: caoc@bmi.ac.cn
Subject: Re: GNL Lab Meeting Invitation
Date: December 10, 2017 at 3:18:04 AM EST
To: "david franz" (b)(6)

Dear Dave,
I really hope I can meet you there, but I'm afraid that I am not able to join you in January because it usually take 3 or more months for us to obtain the government approval and US Visa.
Best,
Cheng

-----原始邮件-----

发件人:"David Franz" <davidrf Franz@gmail.com>
发送时间:2017-12-07 02:58:25 (星期四)
收件人: "cao cheng" <cao_c@yahoo.com>, "Cheng Cao" <caoc@nic.bmi.ac.cn>
抄送: "Benjamin Rusek" <BRusek@nas.edu>
主题: GNL Lab Meeting Invitation

Dear Cheng, Just a note to see if you can confirm that you will be able to join us in Texas the week of 15 January. I hope you will be able to be there. I've attached the letter of invitation again. Best, dave

David R. Franz DVM, Ph.D



Begin forwarded message:

From: "Rusek, Benjamin" <BRusek@nas.edu>
Subject: FW: NAS GNL invitation to participate in a meeting of U.S. and Chinese experts, Jan 16-18 2018
Date: December 6, 2017 at 7:17:18 PM EST
To: "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

<NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2.docx>

<NAS-CAS mtg Galveston Draft agent 12-11-17.docx>



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

Tuesday, 16 January

08:00-10:00 Welcome and Opening Presentations

08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30-09:00 Welcome, Introductions, Opening Remarks

Welcome to UTMB— David L. Callender, President, University of Texas
Medical Branch (UTMB Health)

Welcome to GNL— James Le Duc, director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by **Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences** and **Hui Sun, Chinese Academy of Sciences**

09:00-09:30 Keynote address, China, **George (Fu) Gao, director, Chinese Center for
Disease Control and Chinese Academy of Sciences**

09:30-10:00 Keynote address, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

10:00-10:30 Coffee Break and group photo

Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

10:30-11:00 The care and management of Ebola patients, Colleen Kraft, Emory
University Medical School

DRAFT 12-11-17

11:00-11:30 Conduct of regulated studies and product development in
biocontainment, Carol Linden, FDA

11:30-12:00 Melissa Eitzen/Trevor Brasel from UTMB

12:00-12:30 (presentation title) **Longding Liu, Kunming Institute of Medical Biology**

12:30-13:30 pm Working Lunch

GNL Lobby and Conference Room

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne (mosquito and tick-borne) diseases

13:30-14:00 Dennis Bente & Han Xia collaboration on CCHF

14:00-14:30 Scott Weaver or others, Zika, Chik? (not yet invited)

14:30-15:00 Mosquito acquisition of arbovirus infection, **Gong Cheng, Tsinghua University**

Coffee Break (15:00-15:30)

15:00-15:30 Hemorrhagic viral pathogens in China, **Mifang Liang, Chinese Center for Disease Control**

15:30-16:00 West Nile (Christi Murray—Baylor; longterm follow up?-just invited)

16:00-16:30 Zika vaccine development, Pei-Yong Shi, UTMB

16:30-17:00 Important virus disease challenges facing China, **Dexin Li, National Institute for Viral Disease Control and Prevention China CDC**

18:30-21:00 Dinner

Le Duc home

Wednesday, 17 January

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

08:30-09:00 Research and operations at the BRI agriculture biocontainment laboratory, Steve Higgs BRI, Kansas

09:00-09:30 (presentation title) **Zhigao Bu, director, Harbin Veterinary Research Institute**

09:30-10:00 Scientific talk on Rift Valley fever virus—Tom Ksiazek

DRAFT 12-11-17

10:00-10:30 **Coffee Break**

10:30-11:00 Scientific talk on nipah virus—Alex Freiberg, UTMB (invited)

11:00-11:30 Avian influenza and collaborating on influenza, David Swayne, U.S. Department of Agriculture

11:30- 12:00 Panel discussion on Agricultural Research in Biocontainment (all speakers)

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

13:00-13:30 Coronaviruses, Ralph Baric

13:30-14:00 Coronavirus from bats, **Zhengli Shi, Wuhan Institute of Virology**

14:00-14:30 Coronavirus-host interactions, Shinji Makino, UTMB

14:30-15:00 High containment pathogens in China, **Zhiming Yuan, Wuhan Institute of Virology**

Coffee Break (15:00-15:30)

15:30-16:15 Filovirus and other high risk pathogen product development, Geisbert, (invited)

16:15-16:45 Mammalian RNAi antiviral and host-virus interaction, **Xi Zhou, State Key Laboratory of Virology, Wuhan Institute of Virology**

16:45-17:00 Open discussion

Bus to Hotel

Dinner organized by NAS

Thursday, 18 January

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations, Corrie/Miguel-UTMB/(invited)

Training in biosafety, biosecurity and facilities operations in China, **Yunzhang Hu Kunming Institute of Medical Biology**

Biotechnology advances, Jaime Yassif, Open Philanthropy (invited, schedule TBD)

Biotechnology advances in China, **Xinwin Chen, Wuhan Institute of Virology**

Coffee Break (10:00-10:30)

Session 6. Tours of Facilities (10:30-11:45)

DRAFT 12-11-17

-GNL

-Biosafety training center

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of final Memorandum of Understanding (MOUs) between GNL, the Wuhan Institute of Virology, the Kunming Institute of Medical Biology and the Harbin Veterinary Research Institute

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek (red indicates issue TBD)

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Tuesday, December 12, 2017 5:21 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong
Subject: RE: RE: question about visit your IBTC and GNL
Attachments: LIU Jinxiong NAS GNL Galveston Meeting Invitation.pdf

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get his visa in time.

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人:"LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送:"袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b)(6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu v
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is conta
(b)(6)		y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong
Sent: Monday, December 04, 2017 8:27 PM
To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [<mailto:yzm@wh.iov.cn>]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人: "LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间: 2017-12-04 22:06:50 (星期一)

收件人: "夏菡" <hanxia@wh.iov.cn>

抄送: "袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han



NATIONAL ACADEMY OF SCIENCES

Dr. Jinxiong LIU
Harbin Veterinary Research Institute
Chinese Academy of Agricultural Sciences
Tel: 86-451-51997177

December 11, 2017

Dear Dr. Liu,

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting, the "U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security" is being convened by the U.S. National Academy of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas, USA.

For several years, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases and to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. We are pleased that this fruitful dialogue will continue in 2018 at a meeting in Galveston, Texas at the GNL on January 16-18, 2018. Your participation is essential to help the group work through details of future collaboration between institutes and experts in the United States and institutes and experts in China, and other conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both of our countries.

The topics of discussion for this meeting will include specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities and training clinical staff for care of patients infected with especially dangerous pathogens
- Conducting "well-documented" studies under Biosafety Level 4 (BSL-4) conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combating emerging infections caused by viral agents requiring high-containment facilities.

A more detailed agenda will be offered in the coming weeks. Yuan Zhiming, Director of BSL-4 laboratory, Wuhan Institute of Virology, CAS (yzm@wh.iov.cn), who is leading the Chinese delegation, will contact you about your flight arrangements for the meeting. The group will meet at the GNL and NAS and the GNL will provide you with local transportation, accommodation and meals for the duration of the meeting.

Because your participation is central to these efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

(b)(6)

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA

(b)(6)

James Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Tuesday, December 12, 2017 5:21 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong
Subject: RE: RE: question about visit your IBTC and GNL
Attachments: LIU Jinxiong NAS GNL Galveston Meeting Invitation.pdf

Importance: High

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get (b)(6)

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人:"LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送:"袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

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CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10
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(b)(6)		y	?		No response, Li Dexin's stu
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Kind regards,

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The U.S. National Academy of Sciences

1-202-334-3975

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To: LeDuc, James W.
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Thanks, Jim

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Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

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Thanks and best,

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Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

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发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

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With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The

purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han



NATIONAL ACADEMY OF SCIENCES

Dr. Jinxiong LIU
Harbin Veterinary Research Institute
Chinese Academy of Agricultural Sciences
Tel: 86-451-51997177

December 11, 2017

Dear Dr. Liu,

We are pleased to invite you to participate in a meeting of U.S. and Chinese experts working to counter infectious disease and improve global health. The meeting, the "U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security" is being convened by the U.S. National Academy of Sciences (NAS) and will be hosted by the Galveston National Laboratory (GNL) during the week of January 15, 2018, in Galveston, Texas, USA.

For several years, we have worked together to build a strong foundation for collaboration between your organization and U.S. counterparts in the fields of infectious disease control and prevention. In May 2017, the NAS, the Chinese Academy of Sciences (CAS), and the Wuhan Institute of Virology of CAS held the *Second China-U.S. Workshop on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security* in Wuhan, China to address the interconnected life science challenges associated with emerging infectious diseases and to further enhance cooperation between China and the United States in the areas of global health, biosafety, and biosecurity. We are pleased that this fruitful dialogue will continue in 2018 at a meeting in Galveston, Texas at the GNL on January 16-18, 2018. Your participation is essential to help the group work through details of future collaboration between institutes and experts in the United States and institutes and experts in China, and other conceptual and practical issues of concern related to disease surveillance and response, biosafety, and biosecurity that effect both of our countries.

The topics of discussion for this meeting will include specific high biocontainment "operational" issues such as:

- An overall strategy and creating centers for effective high containment laboratory staff training
- Creating and maintaining clinical care facilities and training clinical staff for care of patients infected with especially dangerous pathogens
- Conducting "well-documented" studies under Biosafety Level 4 (BSL-4) conditions including practical aspects of non-human primate experimentation in the BSL-4 space
- Development and maintenance of best practices for long-term safe and productive BSL-4 operations
- Community relations and outreach efforts and the differences and similarities between interacting with the communities surrounding laboratories in China and the U.S.
- Conducting vector studies to identify animal virus reservoirs and combating emerging infections caused by viral agents requiring high-containment facilities.

A more detailed agenda will be offered in the coming weeks. Yuan Zhiming, Director of BSL-4 laboratory, Wuhan Institute of Virology, CAS (yzm@wh.iov.cn), who is leading the Chinese delegation, will contact you about your flight arrangements for the meeting. The group will meet at the GNL and NAS and the GNL will provide you with local transportation, accommodation and meals for the duration of the meeting.

Because your participation is central to these efforts, we are pleased to support your application for a visa to travel to the United States. Please apply for your visa with this invitation at the United States embassy or a consulate in China. If you need any further supporting information or documentation regarding our cooperative projects or your role in those projects, we would be happy to provide it at any time.

Again, we thank you for your commitment to our joint efforts and we look forward to seeing you in the United States in January.

Sincerely,

(b)(6)

Benjamin Rusek
Senior Program Officer
Policy and Global Affairs Division
U.S. National Academy of Sciences
Washington, DC, USA

(b)(6)

James Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, Texas, USA

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.3975 Fax 202.334.1730 E-mail brusek@nas.edu www.nas.edu/pga

From: 张晗 <zhanghan@wh.iov.cn>
Sent: Tuesday, December 12, 2017 8:24 PM
To: Rusek, Benjamin
Cc: LeDuc, James W.; Shi, Pei yong
Subject: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

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CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)		
XI	ZHOU	y	zhouxi@wh.iov.cn			
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	

QIN	CHENG FENG	n	(b)(6)		/	/	
(b)(6)		?					
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn		/	/	
Liu	Jinxiong	y	(b)(6)				

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发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人:"张晗" <zhanghan@wh.iov.cn>

抄送:"jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

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Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

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CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlishi@wh.iov.cn	(b)(6)		
XI	ZHOU	y	zhouxi@wh.iov.cn			
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	

SUN	HUI	y	sunhui@cashq.ac.cn	approved	just attending the workshop, but not presenting	
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抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

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CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Ch
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang i
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifan
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is cont
(b)(6)		y	?		No response, Li Dexin's st
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]

Sent: Monday, December 04, 2017 6:26 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]
Sent: Monday, December 04, 2017 12:49 AM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 袁院长 <yzm@wh.iov.cn>
Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: 张晗 <zhanghan@wh.iov.cn>
Sent: Tuesday, December 12, 2017 8:26 PM
To: Rusek, Benjamin
Cc: LeDuc, James W.; Shi, Pei yong
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

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CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	

(b)	(b)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人:"Rusek, Benjamin" <BRusek@nas.edu>

抄送:"jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

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CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes
GAO	FU	y	gaof@im.ac.cn		
HU	YUNZHANG	y	(b)(6)		
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/

LIU	LONGDING	y	(b)(6)		
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	
XI	ZHOU	y	zhouxi@wh.iov.cn		
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting
QIN	CHENGFENG	n	(b)(6)	/	/
(b)(6)	(b)(6)	?			
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/
Liu	Jinxiong	y	(b)(6)		

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get (b)(6)

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b) (6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said CH
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifar
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Li
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 1
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is con
(b) (6)	(b) (6)	y	?		No response, Li Dexin's s
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin

Sent: Tuesday, December 05, 2017 1:15 PM

To: LeDuc, James W.

Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)

Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

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I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

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Sent: Monday, December 04, 2017 6:26 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>;

Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

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I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

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With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

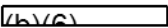
Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) 

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: 张晗 <zhanghan@wh.iov.cn>
Sent: Tuesday, December 12, 2017 8:26 PM
To: Rusek, Benjamin
Cc: LeDuc, James W.; Shi, Pei yong
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL

Importance: High

My apology, please see the table in this email.

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Status of Chinese expert invitations to WIV as of 12/13

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GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
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SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	

QIN	CHENG FENG	n	(b)(6)	/	/	/
(b)	(b)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	/
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

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Li	Dexin	y	lidx@chinacdc.cn		ust attending the workshop, but not presenting

LIANG	MIFANG	n	mifangl@vip.sina.com	/	/
LIU	LONGDING	y	(b)(6)		
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	
XI	ZHOU	y	zhouxi@wh.iov.cn		
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting
QIN	CHENGFENG	n	(b)(6)	/	/
(b)	(b)	?			
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/
Liu	Jinxiong	y	(b)(6)		

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

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Kind regards,

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Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

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Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>

主题: RE: question about visit your IBTC and GNL

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Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said CH
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifar
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Li
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 1
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is con
(b) (6)	(b) (6)	y	?		No response, Li Dexin's s
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin

Sent: Tuesday, December 05, 2017 1:15 PM

To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong
Sent: Monday, December 04, 2017 8:27 PM
To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]

Sent: Monday, December 04, 2017 6:26 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>;

Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Wednesday, December 13, 2017 10:47 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong; Dave Franz (davidfranz@gmail.com)
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

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CHEN	XINWEN	y	chenxl@wh.iov.cn			V
CHENG	CAO	y	(b)(6)			A
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	T
GAO	FU	y	gaof@im.ac.cn			C

HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
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CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zshi@wh.iov.cn	(b)(6)		
XI	ZHOU	y	zhouxi@wh.iov.cn			
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get (b)(6)

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b) (6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, if would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is conta
(b) (6)	(b) (6)	y	?		No response, Li Dexin's stu

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

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Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong
Sent: Monday, December 04, 2017 8:27 PM
To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [<mailto:yzm@wh.iov.cn>]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>;

Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

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发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The

purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Wednesday, December 13, 2017 10:47 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong; Dave Franz (davidrf Franz@gmail.com)
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

Importance: High

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
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CHENG	CAO	y	(b)(6)			A
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	T

GAO	FU	y	gaof@im.ac.cn	approved		
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENG FENG	n	(b)(6)	/	/	
(b)	(b)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

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SHI	ZHENGLI	y	zshi@wh.iov.cn	(b)(6)		
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SUN	HUI	y	sunhui@cashq.ac.cn		Just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人: "Rusek, Benjamin" <BRusek@nas.edu>

发送时间: 2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

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Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b) (6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, if would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is conta
(b) (6)	(b) (6)	y	?		No response, Li Dexin's stu

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong
Sent: Monday, December 04, 2017 8:27 PM
To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [<mailto:yzm@wh.iov.cn>]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>;

Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The

purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: Shi, Pei yong
Sent: Thursday, December 14, 2017 8:22 AM
To: Rusek, Benjamin
Cc: LeDuc, James W.; 'Dave Franz (davidrf Franz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL
Attachments: NAS-CAS mtg Galveston Draft agent 12-11-17 for Embassy.docx

Hi Ben,
Please see the updated version with some new information. If you need any detailed information about the UTMB speakers, please ask Connie Holubar for details. In addition, it would be good if Connie could check the presentation titles with each of the speakers.
Thanks!
Pei-Yong

From: Rusek, Benjamin [mailto:BRusek@nas.edu]
Sent: Wednesday, December 13, 2017 10:47 PM
To: '张晗' <zhanghan@wh.iov.cn>
Cc: LeDuc, James W. <jwleduc@UTMB.EDU>; Shi, Pei yong <peshi@UTMB.EDU>; Dave Franz (davidrf Franz@gmail.com) <davidrf Franz@gmail.com>
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)			
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)"

<peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)		
XI	ZHOU	y	zhouxi@wh.iov.cn			
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENG FENG	n	(b)(6)	/	/	
(b)	(b)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	

Liu	Jinxiong	y	(b)(6)			
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-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get his visa in time.

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [<mailto:zhanghan@wh.iov.cn>]

Sent: Tuesday, December 12, 2017 5:41 AM

To: Rusek, Benjamin

Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

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Chinese Academy of Agricultural Sciences,
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Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

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发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b) (6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
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CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu

Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	Visa more than 9 months i
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENGFENG	y	?	(b)(6)	no response, Dave is conta
(b)	(b)	y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

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Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

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Thanks and best,

Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>,

"Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [<mailto:hanxia@wh.iov.cn>]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

Tuesday, 16 January

08:00-10:00 Welcome and Opening Presentations

08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30-09:00 Welcome, Introductions, Opening Remarks

Welcome to UTMB— David Diesel, Vice President and Dean of the
Graduate School of Biological Sciences, UTMB

Welcome to GNL— James Le Duc, Director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by **Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences** and **Hui Sun, Chinese Academy of Sciences**

09:00-09:30 Keynote address, China, **George (Fu) Gao, Director, Chinese Center for
Disease Control and Chinese Academy of Sciences**

09:30-10:00 Keynote address, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

10:00-10:30 Coffee Break and group photo

Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

10:30-11:00 The care and management of Ebola patients, Colleen Kraft, Emory
University Medical School

DRAFT 12-11-17

- 11:00-11:30 Conduct of regulated studies and product development in biocontainment, Carol Linden, FDA
- 11:30-12:00 Melissa Eitzen, **Director, Regulatory Operations**
Institutional Office of Regulated Nonclinical Studies, UTMB
- Trevor Brasel, Study Director, Regulated Studies, Institutional Office of Regulated Nonclinical Studies, UTMB
- 12:00-12:30 (presentation title) **Longding Liu, Kunming Institute of Medical Biology**

12:30-13:30 pm Working Lunch
GNL Lobby and Conference Room

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne (mosquito and tick-borne) diseases

- 13:30-14:00 Crimean-Congo hemorrhagic fever virus, Dennis Bente, UTMB
- 14:00-14:30 Arbovirus and public health, Scott Weaver, UTMB
- 14:30-15:00 Story of Arboviral Lifecycle: Acquisition Mechanism from Hosts to Mosquitoes,
Gong Cheng, Tsinghua University

Coffee Break (15:00-15:30)

- 15:00-15:30 Hemorrhagic viral pathogens in China, Mifang Liang, Chinese Center for Disease Control
- 15:30-16:00 West Nile (Christi Murray—Baylor; longterm follow up?-just invited)
- 16:00-16:30 Zika vaccine development, Pei-Yong Shi, UTMB
- 16:30-17:00 Important virus disease challenges facing China, Dexin Li, National Institute for Viral Disease Control and Prevention China CDC

18:30-21:00 Dinner

Le Duc home

Wednesday, 17 January

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

Commented [SPy1]: Please ask Connie Holubar to confirm with Scott Weaver

DRAFT 12-11-17

08:30-09:00 Research and operations at the BRI agriculture biocontainment laboratory, Steve Higgs BRI, Kansas

09:00-09:30 (presentation title) **Zhigao Bu, director, Harbin Veterinary Research Institute**

09:30-10:00 Scientific talk on Rift Valley fever virus—Tom Ksiazek

10:00-10:30 **Coffee Break**

10:30-11:00 Scientific talk on nipah virus—Alex Freiberg, UTMB (invited)

11:00-11:30 Avian influenza and collaborating on influenza, David Swayne, U.S. Department of Agriculture

11:30- 12:00 Panel discussion on Agricultural Research in Biocontainment (all speakers)

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

13:00-13:30 Coronaviruses, Ralph Baric

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Dinner organized by NAS

Thursday, 18 January

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Training in biosafety, biosecurity and facilities operations, Corrie/Miguel-UTMB/(invited)

Training in biosafety, biosecurity and facilities operations in China, **Yunzhang Hu Kunming Institute of Medical Biology**

Biotechnology advances, Jaime Yassif, Open Philanthropy (invited, schedule TBD)

DRAFT 12-11-17

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Coffee Break (10:00-10:30)

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Closing Comments (11:45-12:00)

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Press conference?

12:00-13:00 Working Lunch

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NAS Team: Franz; Rusek (red indicates issue TBD)

From: Shi, Pei yong
Sent: Monday, December 18, 2017 10:03 AM
To: zlshi
Cc: 周鹏;Xie, Xuping
Subject: RE: Request for help

Dear Zhengli,
Jim LeDuc and I look forward to hosting you guys at Galveston in January. Congratulations for your recent work! They are amazing.
I'm copying Xuping for the plasmid arrangement.
Happy Holidays to you and your family!
Best,
Pei-Yong

From: zlshi [mailto:zlshi@wh.iov.cn]
Sent: Monday, December 18, 2017 4:20 AM
To: Shi, Pei yong <peshi@UTMB.EDU>
Cc: 周鹏 <peng.zhou@wh.iov.cn>
Subject: Request for help

Dear Pei-yong,

It's nice we will be visiting your lab next month. (b)(6)

May I ask you to give me a favor. We are applying the CRISPER for our research. We need to buy the following plasmids which are provided by the Addgene, but we can't buy them in China. Can you please help us to buy them?

- 1, LSL-Cas9-Rosa26TV: <http://www.addgene.org/61408/>
Purpose: construct a loxP controlled Cre-dependent "ready-for-KO" mouse
- 2, pcDNA3.1-sfCherry(1-10): <https://www.addgene.org/70222/>
Purpose: express mCherry 1-10 (split GFP)
- 3, pcDNA3.1-GFP(1-10): <https://www.addgene.org/70219/>
Purpose: express GFP 1-10 (split GFP)

Thank you in advance!

Best regards,

Zhengli,

SHI Zhengli, Ph. D
Senior Scientist & Professor
Wuhan Institute of Virology, Chinese Academy of Sciences
44 Xiao Hong Shan
430071 Wuhan, Hubei
China

Tel & Fax: (0086) 27 87197240

Email: zlshi@wh.iov.cn

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Sent: Monday, December 18, 2017 12:26 PM
To: LeDuc, James W.; Dave Franz (davidrf Franz@gmail.com); Shi, Pei yong
Cc: Holubar, Connie J.; Morgan, LaTasha
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Attachments: NAS-CAS mtg Galveston Draft agent 12-15-17.docx

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1-202-334-3975

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NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

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08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

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DRAFT 12-12-17

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DRAFT 12-12-17

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- 13:00-13:30 Coronaviruses, Ralph Baric, The University of North Carolina
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- 14:00-14:30 Coronavirus-host interactions, Shinji Makino, UTMB
- 14:30-15:00 High containment pathogens in China, Zhiming Yuan, Wuhan Institute of Virology

Coffee Break (15:00-15:30)

- 15:30-16:15 Filovirus and other high risk pathogen product development, Tom Geisbert, UTMB
- 16:15-16:45 Mammalian RNAi antiviral and host-virus interaction, Xi Zhou, State Key Laboratory of Virology, Wuhan Institute of Virology
- 16:45-17:00 Open discussion

Bus to Hotel

Dinner organized by NAS

Thursday, 18 January

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations, Corrie/Miguel-UTMB

Training in biosafety, biosecurity and facilities operations in China (title pending)
Yunzhang Hu, Kunming Institute of Medical Biology

DRAFT 12-12-17

Biotechnology advances in China, (title pending) *Xinwin Chen, Wuhan Institute of Virology*

Commented [SPy3]: I don't think these two will give talks. We need replacement or stop after Corrie/Miguel's talk.

Coffee Break (10:00-10:30)

Session 6. Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of final Memorandum of Understanding (MOUs) between GNL, the Wuhan Institute of Virology, the Kunming Institute of Medical Biology and the Harbin Veterinary Research Institute

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek (red indicates issue TBD)

From: 石正丽 <zlshi@wh.iov.cn>
Sent: Monday, December 18, 2017 8:07 PM
To: Shi, Pei yong
Cc: 周鹏;Xie, Xuping
Subject: Re: RE: Request for help

Dear Pei-Yong,

Thank you very much for your help.

Wish you a nice holiday and happy new year.

Looking forward to seeing you soon.

Best regards,

Zhengli,

-----原始邮件-----

发件人:"Shi, Pei yong" <peshi@UTMB.EDU>
发送时间:2017-12-19 00:02:47 (星期二)
收件人: zlshi <zlshi@wh.iov.cn>
抄送: "周鹏" <peng.zhou@wh.iov.cn>, "Xie, Xuping" <xuxie@UTMB.EDU>
主题: RE: Request for help

Dear Zhengli,

Jim LeDuc and I look forward to hosting you guys at Galveston in January. Congratulations for your recent work! They are amazing.

I'm copying Xuping for the plasmid arrangement.

Happy Holidays to you and your family!

Best,

Pei-Yong

From: zlshi [mailto:zlshi@wh.iov.cn]
Sent: Monday, December 18, 2017 4:20 AM
To: Shi, Pei yong <peshi@UTMB.EDU>

Cc: 周鹏 <peng.zhou@wh.iov.cn>

Subject: Request for help

Dear Pei-yong,

It's nice we will be visiting your lab next month. (b)(6)

May I ask you to give me a favor. We are applying the CRISPER for our research. We need to buy the following plasmids which are provided by the Addgene, but we can't buy them in China. Can you please help us to buy them?

1, LSL-Cas9-Rosa26TV: <http://www.addgene.org/61408/>

Purpose: construct a loxP controlled Cre-dependent "ready-for-KO" mouse

2, pcDNA3.1-sfCherry(1-10): <https://www.addgene.org/70222/>

Purpose: express mCherry 1-10 (split GFP)

3, pcDNA3.1-GFP(1-10): <https://www.addgene.org/70219/>

Purpose: express GFP 1-10 (split GFP)

Thank you in advance!

Best regards,

Zhengli,

SHI Zhengli, Ph. D

Senior Scientist & Professor

Wuhan Institute of Virology, Chinese Academy of Sciences

44 Xiao Hong Shan

430071 Wuhan, Hubei

China

Tel & Fax: (0086) 27 87197240

Email: zlshi@wh.iov.cn

From: 石正丽 <zlshi@wh.iov.cn>
Sent: Tuesday, December 19, 2017 12:05 AM
To: Xie, Xuping
Cc: Shi, Pei yong;周鹏
Subject: Re: Re: Request for help

Dear Xuping,

Thank you very much for your help.

Wish you a nice holiday and happy new year.

Best regards,

Zhengli,

-----原始邮件-----

发件人:"Xie, Xuping" <xuxie@UTMB.EDU>

发送时间:2017-12-19 10:17:29 (星期二)

收件人: "石正丽" <zlshi@wh.iov.cn>

抄送: "Shi, Pei yong" <peshi@UTMB.EDU>, "周鹏" <peng.zhou@wh.iov.cn>

主题: Re: Request for help

Dear Zhengli,

I am going to get a quotation soonest. Will keep you posted once I have them here.

Have a fantastic holiday and Merry Christmas!

Xuping

Sent from my iPhone

On Dec 18, 2017, at 8:07 PM, 石正丽 <zlshi@wh.iov.cn> wrote:

Dear Pei-Yong,

Thank you very much for your help.

Wish you a nice holiday and happy new year.

Looking forward to seeing you soon.

Best regards,

Zhengli,

-----原始邮件-----

发件人:"Shi, Pei yong" <peshi@UTMB.EDU>

发送时间:2017-12-19 00:02:47 (星期二)

收件人: zlschi <zlschi@wh.iov.cn>

抄送: "周鹏" <peng.zhou@wh.iov.cn>, "Xie, Xuping" <xuxie@UTMB.EDU>

主题: RE: Request for help

Dear Zhengli,

Jim LeDuc and I look forward to hosting you guys at Galveston in January. Congratulations for your recent work! They are amazing.

I'm copying Xuping for the plasmid arrangement.

Happy Holidays to you and your family!

Best,

Pei-Yong

From: zlschi [mailto:zlschi@wh.iov.cn]
Sent: Monday, December 18, 2017 4:20 AM
To: Shi, Pei yong <peshi@UTMB.EDU>
Cc: 周鹏 <peng.zhou@wh.iov.cn>
Subject: Request for help

Dear Pei-yong,

It's nice we will be visiting your lab next month. (b)(6)

(b)(6)

May I ask you to give me a favor. We are applying the CRISPER for our research. We need to buy the following plasmids which are provided by the Addgene, but we can't buy them in China. Can you please help us to buy them?

1, LSL-Cas9-Rosa26TV: <http://www.addgene.org/61408/>

Purpose: construct a loxP controlled Cre-dependent "ready-for-KO" mouse

2, pcDNA3.1-sfCherry(1-10): <https://www.addgene.org/70222/>

Purpose: express mCherry 1-10 (split GFP)

3, pcDNA3.1-GFP(1-10): <https://www.addgene.org/70219/>

Purpose: express GFP 1-10 (split GFP)

Thank you in advance!

Best regards,

Zhengli,

SHI Zhengli, Ph. D

Senior Scientist & Professor

Wuhan Institute of Virology, Chinese Academy of Sciences

44 Xiao Hong Shan

430071 Wuhan, Hubei

China

Tel & Fax: (0086) 27 87197240

Email: zlshi@wh.iov.cn

From: Eitzen, Melissa M.
Sent: Tuesday, December 19, 2017 12:33 PM
To: D'Agostino, Toni
Subject: FW: Invitation to speak
Attachments: NAS-CAS mtg Galveston Draft agent 12-7-17 bjr edit no track changes v2 (004).docx

Toni—here's the agenda.

me

From: LeDuc, James W.
Sent: Monday, December 11, 2017 12:02 PM
To: Eitzen, Melissa M. <mmeitzen@utmb.edu>; Brasel, Trevor <trbrasel@UTMB.EDU>
Cc: Benjamin Rusek (BRusek@nas.edu) <BRusek@nas.edu>; Dave Franz (davidrf Franz@gmail.com) <davidrf Franz@gmail.com>; Shi, Pei yong <peshi@UTMB.EDU>; Guerra, Analilia <anaguerr@UTMB.EDU>; Holubar, Connie J. <cjholuba@UTMB.EDU>
Subject: Invitation to speak
Importance: High

Hi Melissa and Trevor,

We will be hosting the third US-China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security on 16-18 January 2018 here at the GNL. The current draft agenda is attached. The meeting is sponsored by the US National Academy of Sciences in association with the Chinese Academy of Sciences and invitees will include representatives of the three Chinese BSL4 laboratories that have been constructed and are about to begin formal operations.

I would like to invite you to offer a presentation on your work in product test and evaluation in biocontainment on Tuesday, 16 January 2018 from 11:30-12:00. Please plan on talking for about 20 minutes and leaving the remainder of time for discussion. I am sure that the group will be fascinated by the recent advances in the field. This will be in a session dedicated to Clinical Care and Product Development in Biocontainment and is an area of special interest to our Chinese colleagues.

Ben Rusek from the U. S. National Academy of Sciences will follow up with you on details and I'm happy to discuss informally at your convenience.

I hope that you will be able to join us!

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) (b)(6)



NATIONAL ACADEMY OF SCIENCES



U.S. China Dialogue on the Challenges of Emerging Infections, Laboratory Safety and Global Health Security

Galveston National Laboratory
Galveston, Texas
16-18 January 2018

Monday, 15 January

Participants arrive, Hotel Galvez, Galveston

Informal evening reception (location?)

Tuesday, 16 January

08:00-10:00 Welcome and Opening Presentations

08:00 Hotel shuttle bus transport to GNL, pass through security (be sure to bring photo ID)

08:30-09:00 Welcome, Introductions, Opening Remarks

Welcome to UTMB— David L. Callender, President, University of Texas
Medical Branch (UTMB Health)

Welcome to GNL— James Le Duc, director, Galveston National
Laboratory (GNL)

Comments by NAS representative, David Relman, Stanford University and
NAM member, Benjamin Rusek, NAS staff

Comments by Zhiming Yuan, Wuhan Institute of Virology and Chinese
Academy of Sciences

09:00-09:30 Keynote address, China, George (Fu) Gao, director, Chinese Center for
Disease Control and Chinese Academy of Sciences

09:30-10:00 Keynote talk, U.S., David Relman, Stanford University

10:00-10:30 Coffee Break and Group Photo

10:00-10:30 Coffee Break and group photo

Session 1. Clinical Care and Product Development in Biocontainment (10:30-12:30)

Clinical management of high risk patients

DRAFT 12-7-17

- 10:30-11:00 The care and management of Ebola patients, Colleen Kraft, Emory University Medical School
- 11:00-11:30 Conduct of regulated studies and product development in biocontainment, Carol Linden, FDA
- 11:30-12:00 Melissa Eitzen/Trevor Brasel from UTMB?
- 12:00-12:30 (presentation title) Longding Liu, Kunming Institute of Medical Biology

12:30-13:30 pm Working Lunch

GNL Lobby and Conference Room

Session 2. Vector-borne Diseases (13:30-17:00)

Vector-borne (mosquito and tick-borne) diseases

- 13:30-14:00 Dennis Bente & Han Xia collaboration on CCHF
- 14:00-14:30 Scott Weaver or others, Zika, Chik? (not yet invited)
- 14:30-15:00 Mosquito acquisition of arbovirus infection, Gong Cheng, Tsinghua University

Coffee Break (15:00-15:30)

- 15:00-15:30 Hemorrhagic viral pathogens in China, Mifang Liang, Chinese Center for Disease Control
- 15:30-16:00 West Nile (Christi Murray—Baylor; longterm follow up?-just invited)
- 16:00-16:30 Zika vaccine development, Pei-Yong Shi, UTMB

18:30-21:00 Dinner

Le Duc home

Wednesday, 17 January

Session 3. Agricultural Research in Biocontainment (08:30-12:00)

- 08:30-09:00 Research and operations at the BRI agriculture biocontainment laboratory, Steve Higgs BRI, Kansas
- 09:00-09:30 (presentation title) Zhigao Bu, director, Harbin Veterinary Research Institute)
- 09:30-10:00 Scientific talk on Rift Valley fever virus—Tom Ksiazek invited;

DRAFT 12-7-17

10:00-10:30 **Coffee Break**

10:30-11:00 Scientific talk on nipah virus—Alex Freiberg (UTMB) invited;

11:00-11:30 Avian influenza and collaborating on influenza, David Swayne (accepted)

11:30- 12:00 Panel discussion on Agricultural Research in Biocontainment (all speakers)

Working Lunch (12:00-13:00 in GNL Lobby and Conference Room)

Session 4. Recent Advances in Research on High Hazard Pathogens (13:00-17:00)

13:00-13:30 Coronaviruses, Ralph Baric

13:30-14:00 Coronavirus from bats, Zhengli Shi, Wuhan Institute of Virology

14:00-14:30 High containment pathogens in China, Zhiming Yuan, Wuhan Institute of Virology

14:30-15:00 Mammalian RNAi antiviral and host-virus interaction, Xi Zhou, State Key Laboratory of Virology, Wuhan Institute of Virology

Coffee Break (15:00-15:30)

15:30-16:00 Filovirus and other high risk pathogen product development, (Geisbert, just invited)

16:00-16:30 Dengue vaccine development—need speaker

16:30-17:00 Open discussion or another talk?

Bus to Hotel

Dinner organized by NAS

Thursday, 18 January

Session 5. Biosafety, Biosecurity and Biocontainment Facilities Operation (08:30-10:00)

Training in biosafety, biosecurity and facilities operations, Corrie/Miguel-UTMB/(invited)

Biotechnology advances—Need speaker

Open Philanthropy—Jaime Yassif (invited)

Need to work on speakers for this session (Franz? Zhigao Bu? Other Chinese speakers?)

Coffee Break (10:00-10:30)

Session 6. Tours of Facilities (10:30-11:45)

-GNL

-Biosafety training center

Closing Comments (11:45-12:00)

Closing comments from GNL NAS/CAS

Signing of MOUs?

Press conference?

12:00-13:00 Working Lunch

GNL Lobby and Conference Rooms

Optional Bus Tour TBD

Dinner on your own?

NAS Team: Franz; Rusek; (red indicates issue TBD)

DRAFT

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Tuesday, December 19, 2017 5:57 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong; 'Dave Franz (davidrf Franz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

Hi Han,

Any update on the visa statue for the “still pending” and blank participants?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 13, 2017 11:47 PM
To: '张晗'
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU); Dave Franz (davidrf Franz@gmail.com)
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)		
XI	ZHOU	y	zhouxi@wh.iov.cn			
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFEENG	n	(b)(6)	/	/	

(b)	(b)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get (b)(6)

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]

Sent: Tuesday, December 12, 2017 5:41 AM

To: Rusek, Benjamin

Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>



发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrf Franz@gmail.com)" <davidrf Franz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and   (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu v

CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is conta
(b)	(b)	y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人: "LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间: 2017-12-04 22:06:50 (星期一)

收件人: "夏菡" <hanxia@wh.iov.cn>

抄送: "袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Tuesday, December 19, 2017 5:57 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong; 'Dave Franz (davidrf Franz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

Hi Han,

Any update on the visa statue for the “still pending” and blank participants?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 13, 2017 11:47 PM
To: '张晗'
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU); Dave Franz (davidrf Franz@gmail.com)
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)		
XI	ZHOU	y	zhouxi@wh.iov.cn			
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFEENG	n	(b)(6)	/	/	

(b)	(b)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get (b)(6)

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]

Sent: Tuesday, December 12, 2017 5:41 AM

To: Rusek, Benjamin

Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>



发送时间:2017-12-07 08:15:59 (星期四)

收件人: "LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送: "袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and   (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, it would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu v

CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is conta
(b)	(b)	y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6). I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]

Sent: Monday, December 04, 2017 6:26 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送: "袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>
主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Tuesday, December 19, 2017 6:02 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong; 'Dave Franz (davidrf Franz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

If you tell me which visas are still being processed by the US Embassy I can try to get the Embassy to expedite those applications.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 19, 2017 6:57 PM
To: '张晗'
Cc: 'jwleduc@UTMB.EDU'; 'Shi, Pei yong (peshi@UTMB.EDU)'; 'Dave Franz (davidrf Franz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

Hi Han,

Any update on the visa statue for the "still pending" and blank participants?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 13, 2017 11:47 PM
To: '张晗'
Cc: 'jwleduc@UTMB.EDU'; Shi, Pei yong (peshi@UTMB.EDU); Dave Franz (davidrf Franz@gmail.com)
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			V
CHENG	CAO	y	(b)(6)			A
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	T
GAO	FU	y	gaof@im.ac.cn			C
HU	YUNZHANG	y	(b)(6)			H
Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting	M
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	C
LIU	LONGDING	y	(b)(6)			H
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	V
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	S

YUAN	ZHIMING	y	yzm@wh.iov.cn	(b)(6)	Biosafety management of high-level biosafety laboratory for emerging disease control	V
SUN	HUI	y	sunhui@cashq.ac.cn	(b)(6)	Just attending the workshop, but not presenting	C
QIN	CHENGFENG	n	(b)(6)	/	/	A
(b)(6)	(b)(6)	?				F
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	T
Liu	Jinxiong	y	(b)(6)			H

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	A
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	H
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CHENG	CAO	y	(b)(6)			A
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	T
GAO	FU	y	gaof@im.ac.cn			C
HU	YUNZHANG	y	(b)(6)			H

Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/
LIU	LONGDING	y	(b)(6)		
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	
XI	ZHOU	y	zhouxi@wh.iov.cn		
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting
QIN	CHENGFENG	n	(b)(6)	/	/
(b)(6)	(b)(6)	?			
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/
Liu	Jinxiong	y	(b)(6)		

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get his visa in time.

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人:"LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送:"袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b) (6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, if would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

Status of Chinese expert invitations to Galveston as of 12/6					
		invited	Plans to attend?	Email	Info about invitation
BU	ZHIGAO	y	y	buzhigao@caas.cn	on 11/20 Zhiming said Bu v
CHEN	XINWEN	y	y	chenxl@wh.iov.cn	on 11/20 Zhiming said Che
CHENG	CAO	y	y	(b)(6)	said yes to franz on 11/5
CHENG	GONG	y	y	gongcheng@mail.tsinghua.edu.cn	said yes to rusek 10/21
GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is conta
(b) (6)	(b) (6)	y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

Kind regards,

Ben

On Dec 5, 2017, at 8:05 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

Hi Ben,

Could you please send us the complete list of those invited to the Galveston meeting from China. We need to finalize the agenda as soon as possible but we need to be sure that those invited will have visas.

Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong
Sent: Monday, December 04, 2017 8:27 PM
To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

Hi Han, once we have received the list of invited Chinese participants from Ben, would you please contact each of them for their visa status and potential presentation title? We will need those who have already obtained visa to build our scientific program.

Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [mailto:yzm@wh.iov.cn]
Sent: Monday, December 04, 2017 6:26 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>
Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人:"夏菡" <hanxia@wh.iov.cn>

抄送:"袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

From: Rusek, Benjamin <BRusek@nas.edu>
Sent: Tuesday, December 19, 2017 6:02 PM
To: '张晗'
Cc: LeDuc, James W.; Shi, Pei yong; 'Dave Franz (davidrfranz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

If you tell me which visas are still being processed by the US Embassy I can try to get the Embassy to expedite those applications.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 19, 2017 6:57 PM
To: '张晗'
Cc: 'jwleduc@UTMB.EDU'; 'Shi, Pei yong (peshi@UTMB.EDU)'; 'Dave Franz (davidrfranz@gmail.com)'
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL

Hi Han,

Any update on the visa statue for the "still pending" and blank participants?

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: Rusek, Benjamin
Sent: Wednesday, December 13, 2017 11:47 PM
To: '张晗'
Cc: 'jwleduc@UTMB.EDU'; Shi, Pei yong (peshi@UTMB.EDU); Dave Franz (davidrfranz@gmail.com)
Subject: RE: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

Hi Han,

Thank you for this information. I sent my contacts at the U.S. Embassy in Beijing the list of Chinese participants and information about the meeting, they have promised to quickly process visas for the group. I hope it helps those that are still seeking their visas, especially Dr. Zhiming Yuan! Please do let us know the status of those from the Kunming Institute of Medical Biology (Dr. Hu and Dr. Liu) when you hear from them.

Kind regards,

Ben

Benjamin Rusek
The U.S. National Academy of Sciences
1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 9:26 PM
To: Rusek, Benjamin
Cc: jwleduc@UTMB.EDU; Shi, Pei yong (peshi@UTMB.EDU)
Subject: Re: Re: RE: RE: question about visit your IBTC and GNL
Importance: High

My apology, please see the table in this email.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			
Li	Dexin	y	lidx@chinacdc.cn		just attending the workshop, but not presenting	
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/	
LIU	LONGDING	y	(b)(6)			
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	Emergence risk of bat coronaviruses in China	
XI	ZHOU	y	zhouxi@wh.iov.cn		The mechanism of arbovirus evasion of antiviral immunity	

YUAN	ZHIMING	y	yzm@wh.iov.cn	(b)(6)	Biosafety management of high-level biosafety laboratory for emerging disease control	
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting	
QIN	CHENGFENG	n	(b)(6)	/	/	
(b)(6)	(b)(6)	?				
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/	
Liu	Jinxiong	y	(b)(6)			

-----原始邮件-----

发件人:"张晗" <zhanghan@wh.iov.cn>

发送时间:2017-12-13 10:23:50 (星期三)

收件人: "Rusek, Benjamin" <BRusek@nas.edu>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: Re: RE: RE: question about visit your IBTC and GNL

Dear Ben and all,

For your information, I added the required information in the table below. Some invitees said that they are not able to attend the meeting. Some of them did not respond my email yet. I will contact them to collect the info soon.

Han

Status of Chinese expert invitations to WIV as of 12/13

		Plans to attend?	Email	Visa Information	Presentation Title	
BU	ZHIGAO	y	buzhigao@caas.cn	(b)(6)	Development of candidate vaccines against MERS-CoV for camel and human	
CHEN	XINWEN	y	chenxl@wh.iov.cn			
CHENG	CAO	y	(b)(6)			
CHENG	GONG	y	gongcheng@mail.tsinghua.edu.cn		Story of Arboviral Lifecycle: Acquisition Mechanism From Hosts to Mosquitoes	
GAO	FU	y	gaof@im.ac.cn			
HU	YUNZHANG	y	(b)(6)			

Li	Dexin	y	lidx@chinacdc.cn	(b)(6)	just attending the workshop, but not presenting
LIANG	MIFANG	n	mifangl@vip.sina.com	/	/
LIU	LONGDING	y	(b)(6)		
SHI	ZHENGLI	y	zlshi@wh.iov.cn	(b)(6)	
XI	ZHOU	y	zhouxi@wh.iov.cn		
YUAN	ZHIMING	y	yzm@wh.iov.cn		Biosafety management of high-level biosafety laboratory for emerging disease control
SUN	HUI	y	sunhui@cashq.ac.cn		just attending the workshop, but not presenting
QIN	CHENGFENG	n	(b)(6)	/	/
(b)(6)	(b)(6)	?			
SHI	YIGONG	n	shi-lab@tsinghua.edu.cn	/	/
Liu	Jinxiong	y	(b)(6)		

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-13 07:21:00 (星期三)

收件人: "张晗" <zhanghan@wh.iov.cn>

抄送: "jwleduc@UTMB.EDU" <jwleduc@UTMB.EDU>, "Shi, Pei yong (peshi@UTMB.EDU)" <peshi@UTMB.EDU>

主题: RE: RE: question about visit your IBTC and GNL

Hi Han,

I have attached an invitation letter for Dr. Jinxiong LIU. Please send it to him but could you send me his email address as well? I hope he will be able to get his visa in time.

Also could you update us on the status of the Chinese groups' visa applications?

Kind regards,

Ben

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: 张晗 [mailto:zhanghan@wh.iov.cn]
Sent: Tuesday, December 12, 2017 5:41 AM
To: Rusek, Benjamin
Subject: Re: RE: question about visit your IBTC and GNL

Dear Ben,

Hope this letter finds you well.

For your information, when I contacted with Prof. Zhigao BU, he said he would like to ask his assistant, Dr. Jinxiong LIU to go with him to attend the meeting. Here I am helping him to request the invitation letter. His information is as below:

Dr. Jinxiong LIU
Harbin Veterinary Research Institute,
Chinese Academy of Agricultural Sciences,
678 Haping Road, Harbin 150069, Heilongjiang Province, P.R.China
Tel: 86-451-51997177
Fax: 86-451-51997166

Thank you very much. Once you send me his invitation letter, I will forward to them.

With best wishes,

Han

-----原始邮件-----

发件人:"Rusek, Benjamin" <BRusek@nas.edu>

发送时间:2017-12-07 08:15:59 (星期四)

收件人:"LeDuc, James W." <jwleduc@UTMB.EDU>, "Shi, Pei yong" <peshi@UTMB.EDU>, "张晗" <zhanghan@wh.iov.cn>

抄送:"袁志明" <yzm@wh.iov.cn>, "金凤银" <jfy@wh.iov.cn>, "Dave Franz (davidrfranz@gmail.com)" <davidrfranz@gmail.com>

主题: RE: question about visit your IBTC and GNL

Greetings,

Sorry for the delay. Below is the list of invited Chinese participants. It seems that we have only not heard from Qin Chengfeng and (b) (6) (Li Dexin's student). As you know Shi Yigong can't make it.

Han, as Pei-yong instructs, if would be helpful if you could contact each of them and ask about their visa status and get their presentation title.

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		invited	Plans to attend?	Email	Info about invitation
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GAO	FU	y	y	gaof@im.ac.cn	Yes, Xiaoqi (Doris) Wang is
HU	YUNZHANG	y	y	(b)(6)	on 11/20 Zhiming said Hu
Li	Dexin	y	y		on 12/15 franz said mifang
LIANG	MIFANG	y	y	mifangl@vip.sina.com	(b)(6)
LIU	LONGDING	y	y	(b)(6)	on 11/20 Zhiming said Liu
SHI	ZHENGLI	y	y	zlshi@wh.iov.cn	said yes to rusek 10/15
XI	ZHOU	y	y	zhouxi@wh.iov.cn	said yes to rusek 10/15
YUAN	ZHIMING	y	y	yzm@wh.iov.cn	Delegation leader
SUN	HUI	y	maybe	sunhui@cashq.ac.cn	said maybe to rusek on 10/
QIN	CHENG FENG	y	?	(b)(6)	no response, Dave is conta
(b) (6)	(b) (6)	y	?		No response, Li Dexin's stu
SHI	YIGONG	y	n	shi-lab@tsinghua.edu.cn	said no on 10/15

Kind regards,

Benjamin Rusek

The U.S. National Academy of Sciences

1-202-334-3975

From: Rusek, Benjamin
Sent: Tuesday, December 05, 2017 1:15 PM
To: LeDuc, James W.
Cc: Shi, Pei yong; 张晗; 袁志明; 金凤银; Dave Franz (davidrf Franz@gmail.com)
Subject: Re: question about visit your IBTC and GNL

Greetings,

Back from Asia, just landed in (b)(6) I will be traveling for a few more hours but will send the list as soon as possible.

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Ben

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Also, did you invite Steve Whitehead from NIH (the dengue vaccine guy)? It would be great to include him if possible.

I'm going to be out of the office for much of the next two weeks so please include Pei Yong on all correspondence regarding the meeting.

Thanks, Jim

From: Shi, Pei yong

Sent: Monday, December 04, 2017 8:27 PM

To: 袁志明 <yzm@wh.iov.cn>; LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: RE: RE: question about visit your IBTC and GNL

Thanks, Zhiming

Hi Ben, would you please share the list of invited attendants with emails from China?

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Once we have those information, Jim and I will finalize the Scientific Program and share with the team.

Thanks and best,

Pei-Yong

From: 袁志明 [<mailto:yzm@wh.iov.cn>]

Sent: Monday, December 04, 2017 6:26 PM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: Shi, Pei yong <peshi@UTMB.EDU>; 张晗 <zhanghan@wh.iov.cn>; 金凤银 <jfy@wh.iov.cn>; Benjamin Rusek <BRusek@nas.edu>

Subject: Re: RE: question about visit your IBTC and GNL

Dear Jim,

It is coming the CAS-NAS meeting and hope everything is well prepared. As I told you, in Chinese side, Dr. Chen Xinwen, Shi Zhengli, Zhouxi, Bu Zhigao, Li Dexin, Gao Fu are scheduled to participate the meeting, Liang Xifang (b)(6) I have no information about the other invited people.

Would you please send us the final program and the hotel information?

I will present the WHO meeting next week in Lyon, and I noticed Jim is included in the participant list. You will be there during the meeting, maybe we could find the time for discussing the CAS-NAS meeting.

Regards

Zhiming

-----原始邮件-----

发件人:"LeDuc, James W." <jwleduc@UTMB.EDU>

发送时间:2017-12-04 22:06:50 (星期一)

收件人: "夏菡" <hanxia@wh.iov.cn>

抄送: "袁院长" <yzm@wh.iov.cn>, "Guerra, Analilia" <anaguerr@UTMB.EDU>, "Holubar, Connie J." <cjholuba@UTMB.EDU>, "Newton, Je t'aime M." <jmnewton@utmb.edu>, "Ntiforo, Corrie" <contifor@UTMB.EDU>

主题: RE: question about visit your IBTC and GNL

Dear Han,

You and your colleagues are of course welcome at any time. Please send me their names and information prior to the visit so that we can schedule accordingly. If they are interested in participating in our training program, please let us know. I have copied our team here who manages the training program and they can assist with scheduling.

With best wishes,

Jim

James W. Le Duc, Ph.D.

Director

Galveston National Laboratory

University of Texas Medical Branch

Galveston, TX 77555-0610

(t) 409-266-6500

(f) 409-266-6810

(m) (b)(6)

From: 夏茵 [mailto:hanxia@wh.iov.cn]

Sent: Monday, December 04, 2017 12:49 AM

To: LeDuc, James W. <jwleduc@UTMB.EDU>

Cc: 袁院长 <yzm@wh.iov.cn>

Subject: question about visit your IBTC and GNL

Dear Dr. Leduc,

I hope everything is going well for you and your family!

Could you please tell me if it's possible for a small group (around 5-6 persons) in our side visiting (short visit) your IBTC and GNL in the March or April next year (2018)?

The group members will come from Wuhan institute of Virology, Wuhan University, Shanghai Public Health Clinical Center, Chinese Academy of Military Medical Sciences, and Guangdong Entry-Exit Inspection and Quarantine Bureau. They are the persons in charge of the biosafety training or their Biosafety labs. The purpose for the visit will be the experience communication of biosafety training or biosafety lab management.

Thanks for your help!

All the best,

Han

NO#	Name	Institution	Title
1	Jing AN	Capital Medical University	Professor
2	Wuchun CAO	Academy of Military Medical Sciences	Researcher
3	Hualan CHEN	Harbin Veterinary Research Institute, Chinese Academy of Agricultural Sciences	Researcher
4	Hui HOU	Wuhan University	Professor
5	Zhihong HU	Wuhan Institute of Virology, Chinese Academy of Sciences	Researcher
6	Lubin JIANG	Institute Pasteur of Shanghai, Chinese Academy of Sciences	Researcher
7	Taijiao JIANG	Center of Systems Medicine Chinese Academy of Medical Sciences, Institute of Systems Medicine, Suzhou Institute of Systems Medicine	Researcher
8	Qiyong LIU	National Institute for Communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention	Researcher
9	Jinhua LIU	China Agricultural University	Professor
10	Wenjun LIU	Institute of Microbiology, Chinese Academy of Sciences	Researcher
11	Di LIU	Institute of Microbiology, Chinese Academy of Sciences	Researcher

12	Jiahai LU	Sun Yat-Sen University	Professor
13	Juncai MA	Institute of Microbiology, Chinese Academy of Sciences	Researcher
14	Chengfeng QIN	Academy of Military Medical Sciences	Researcher
15	Yuelong SHU	Sun Yat-Sen University (Shenzhen)	Researcher
16	Changchun TU	Academy of Military Medical Sciences	Researcher
17	Jianguo XU	Chinese Center for Disease Control and Prevention	Researcher (Academician)
18	Hongjie YU	Fudan University	Chief Physician
19	Yongzhen ZHANG	National Institute for Communicable Disease Control and Prevention; Chinese Center for Disease Control and Prevention	Researcher
20	Xi ZHOU	Wuhan Institute of Virology, Chinese Academy of Sciences	Researcher
21	Zhen ZOU	Institute of Zoology, Chinese Academy of Sciences	Researcher

Cannot attend

1	Gong CHENG	Tsinghua University	Researcher
2	Xiaoguang CHEN	Southern Medical University	Professor

3	Zhengli SHI	Wuhan Institute of Virology, Chinese Academy of Sciences	Professor
4	Chiyu ZHANG	Institute Pasteur of Shanghai, the Chinese Academy of Sciences	Researcher

Research Fields	Address
Microbiology,Human virology	(b) (6)
Epidemiology of infectious diseases, endemiology, Other pathogenic microorganisms & infection and host immunity, human virology, Epidemiological methods and health statistics	
Virology, influenza virus	
Virus\virus infection and host immunity, inflammation\infection and Immunity	
Virology, tick borne viruses	
Microbiology, genetics and bioinformatics, Medical pathogen and infection	
Bioinformatics,epidemic prediction	
Vector & surveillance of infectious disease,risk assessment,surveillance and control	
Veterinary medicine	
Etiology,prevention of veterinary infectious diseases,animal virology,immunity adjustment	
Bioinformatics,epidemic prediction	

Epidemiology of infectious diseases	(b) (6)
Bioinformatics	
Virology, Arbovirus	
Human virology,Medical pathogen and infection, influenza virus	
Etiology, animal virology	
Bacteria & archaea taxonomy,interaction, propagation rule,infection immunity	
Preventive medicine,epidemiology of infectious diseases	
Virology, biodiversity	
Arbovirus,invertebrate immunity	
Arthropod immunity	
Arbovirus	(b) (6)
Parasite\Parasitic infection and host immunity,Vector of infectious diseases,veterinary parasitology,etiology	

Animal virology, virus\virus infection and host immunity,etiology	(b) (6)
Pathogenic microorganism mutationdrug & resistance,diagnosis of pathogenic microorganism and infection,epidemiology of infectious diseases	

E-mail
anjing@ccmu.edu.cn
caowc@bmi.ac.cn
(b) (6) _____yahoo.com
houwei@whu.edu.cn
huzh@wh.iov.cn
lbjiang@ips.ac.cn
taijiao@ibms.pumc.edu.cn
liuqiyong@icdc.cn
ljh@cau.edu.cn
liuwj@im.ac.cn
liud@im.ac.cn

lujiahai@mail.sysu.edu.cn
ma@im.ac.cn
chengfeng_qin@126.com
yshu@cnic.org.cn
(b) (6) hotmail.com
xujianguo@icdc.cn
cfetpyhj@vip.sina.com
zhangyongzhen@icdc.cn
zhouxi@whu.edu.cn
zouzhen@ioz.ac.cn

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zhangcy1999@ips.ac.cn