

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 05/01/2017 10:42:02 AM (-07:00)  
**To:** "Tracey Goldstein" <goldstein@ucdavis.edu>; "Wang Linfa" [REDACTED];  
"Lipkin, Ian W." <wil2001@cumc.columbia.edu>  
**Cc:** "Briese, Thomas" <tb2047@cumc.columbia.edu>; "Brooke Watson"  
<watson@ecohealthalliance.org>; "Kahn, Eleanor J." <ejk2162@cumc.columbia.edu>; "Danielle Anderson"  
[REDACTED]; "Claes, Filip (FAORAP)" [REDACTED]; "Alison Andre"  
<andre@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Morzaria, Subhash (FAORAP)"  
[REDACTED]  
**Subject:** RE: Coordinating the two GVP lab working groups

Thanks for the input Tracey and Filip – this is great and ties in nicely with what’s been proposed by the Lab Platform WG.

Brooke and I will insert your comments and suggestions into the Lab Platform WG plan before we circulate to the whole group.

Cheers,

Peter

**Peter Daszak**  
*President*

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*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

**From:** [REDACTED] **On Behalf Of** Tracey Goldstein  
**Sent:** Monday, May 1, 2017 12:47 PM  
**To:** Wang Linfa; Lipkin, Ian W.  
**Cc:** Briese, Thomas; Brooke Watson; Kahn, Eleanor J.; Danielle Anderson; Claes, Filip (FAORAP); Peter Daszak; Alison Andre; Jonna Mazet; Morzaria, Subhash (FAORAP)  
**Subject:** Re: Coordinating the two GVP lab working groups

Dear All,

Thank you for sharing the Lab Platform concept note.

Please find the update from the Lab Implementation team attached. We include some information on challenges of implementation in country, some information on comparison of lab methods, as well as suggestions for coordination between the two lab groups.

Brooke are you collating all files for the May 1 deadline?

Best, Tracey and Filip

On Mon, May 1, 2017 at 12:08 AM, Wang Linfa [REDACTED] wrote:  
Dear Thomas,

Thanks for taking the leadership on this.

Attached pls find the added edits/comments from us (me and Danielle).

All the best,

LF

*Linfa (Lin-Fa) WANG, PhD FTSE*  
Professor & Director  
Programme in Emerging Infectious Disease

[REDACTED]

---

**From:** Briese, Thomas [mailto:[tb2047@cumc.columbia.edu](mailto:tb2047@cumc.columbia.edu)]

**Sent:** Friday, 28 April, 2017 4:27 AM

**To:** Wang Linfa; Lipkin, Ian W.

**Cc:** Brooke Watson; Kahn, Eleanor J.; Danielle Anderson; Claes, Filip (FAORAP); Tracey Goldstein; Peter Daszak; Alison Andre

**Subject:** Re: Coordinating the two GVP lab working groups

Hi Linfa and Danielle,

Attached I'm sending our concept draft for your comments and input.

Best wishes, Thomas

---

**From:** Wang Linfa [REDACTED]

**Date:** Saturday, April 22, 2017 at 7:53 AM

**To:** "Lipkin, Ian W." <[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)>

**Cc:** Brooke Watson <[watson@ecohealthalliance.org](mailto:watson@ecohealthalliance.org)>, "Kahn, Eleanor J." <[ejk2162@cumc.columbia.edu](mailto:ejk2162@cumc.columbia.edu)>, Thomas Briese <[tb2047@cumc.columbia.edu](mailto:tb2047@cumc.columbia.edu)>, Danielle Anderson [REDACTED], "Claes, Filip (FAORAP)" <[Filip.Claes@fao.org](mailto:Filip.Claes@fao.org)>, Tracey Goldstein <[goldstein@ucdavis.edu](mailto:goldstein@ucdavis.edu)>, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>

**Subject:** Re: Coordinating the two GVP lab working groups

Ok thanks.

Sent from my iPhone

On 22 Apr 2017, at 7:27 PM, Lipkin, Ian W. <[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)> wrote:

We have a ME/CFS center grant due at NIH on May 2. Fortunately, Thomas isn't involved in that proposal. I'll circle back with him tomorrow/Monday.

Ian

On Apr 22, 2017, at 1:20 AM, Wang Linfa <**REDACTED**> wrote:

Thanks Brooke.

Ian and Thomas, at the last tel conf you stated that you will have a go with the drafting and then circulate. Can we have a draft by 26 April pls? I and Danielle will then work on it before the due date.

Thanks

LF

*Linfa (Lin-Fa) WANG, PhD FTSE*  
Professor & Director  
Programme in Emerging Infectious Disease  
Duke-NUS Medical School,

**REDACTED**

**From:** Brooke Watson [<mailto:watson@ecohealthalliance.org>]

**Sent:** Thursday, 20 April, 2017 11:44 PM

**To:** Lipkin, Ian W.; Kahn, Eleanor J.; Briese, Thomas; Wang Linfa; Danielle Anderson; Claes, Filip (FAORAP); Tracey Goldstein; Peter Daszak; Alison Andre

**Subject:** Coordinating the two GVP lab working groups

Dear colleagues,

As we approach May, I want to ensure that all the Science and Technology working group co-chairs have had the opportunity to coordinate with their corresponding Implementations thematic area co-chairs. Copied on this email are all co-chairs (and deputy co-chairs) from the **Lab Platform** and **Laboratory and Biosafety Implementation** working groups. I hope this email will provide an opportunity to open communication channels and synchronize your working group plans if you have not already been in conversation.

As the Science Thematic areas work toward their working group concept notes for May 1, please share drafts and seek feedback from your Implementation partners. Likewise, if the Implementation leads have specific questions about the Science and Technology platforms, please feel free to reach out to your colleagues.

Please let me know if you have any questions or need assistance setting up a conference line. We look forward to receiving your concept notes on May 1.

Best,

Brooke Watson

--

**Brooke Watson, MSc**

*Research Scientist*

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--

Tracey Goldstein, PhD  
One Health Institute  
School of Veterinary Medicine  
University of California  
Davis, CA 95616  
Phone: (530) 752-0412  
Fax: (530) 752-3318  
E-mail: [tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 05/03/2017 6:56:17 PM (-07:00)  
**To:** "Leilani Francisco" <francisco@ecohealthalliance.org>  
**Cc:** "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Behavior Plan

I have availability between 12:30 and 3:30 Pacific.

Thanks,  
J

On Wed, May 3, 2017 at 5:30 PM, Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)> wrote:

Perfect, this all sounds great, thanks so much.

Any time after 12:30 pm CA time on Wednesday works for me.

I can send an invite as a placeholder if that would be helpful. If yes, please let me know what window works best and I'll coordinate with Chris and Peter to firm up a time.

Best,  
Leilani

On May 3, 2017, at 8:06 PM, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Great that you guys are well coordinated. I'm good with you adding that content, sounds enriching.

Monday is fully booked & my first day back to the office and whatever that will bring.

Could you send drat Monday and then we could discuss Wednesday? If I have major issues on first glance, I could get you some quick feedback prior to a call. I have opening Wednesday midday.

Let us know,  
Jonna

On Wed, May 3, 2017 at 3:18 PM, Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)> wrote:

Hi again,

Would it be possible to set up a time on Monday to discuss the presentation?

For now, based on our latest discussions, I plan to focus on the communication plan (I'm working with Aiah and Tracey on updates as we speak).

We can also use the previously reviewed presentation deck.

I was wondering if it would be ok to add some content to the deck, e.g., content on behavior change theory and program evaluation concepts (to illustrate the link to the end goal), etc. Chris mentioned today that this would be ok and I'd really like to add this if it's ok with you. Please let me know if all of this sounds ok and if there's anything that you'd like me to focus on/include/exclude and I'd be happy to accommodate.

Many thanks,

Leilani

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**From:** Leilani Francisco [mailto:[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)]  
**Sent:** Wednesday, May 3, 2017 3:31 PM  
**To:** 'Jonna Mazet' <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Cc:** 'Christine Kreuder Johnson' <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** RE: Behavior Plan

Hi Jonna,

Thanks for checking in, hope the travels are going well and great news about the call.

I touched base with Chris today on content for the slides.

Would it be ok if I get the slides to you on Monday?

Best,

Leilani

**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Wednesday, May 3, 2017 3:10 PM  
**To:** Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)>  
**Cc:** Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Behavior Plan

Hi Leilani,

Just checking in from New Zealand on the Behavior Plan that will be shared with USAID on May 12. I want to make sure we don't get into the same situation as last time with a very short opportunity to review, weigh-in, and revise.

Could you provide us with the anticipated schedule?

Also, looks like I will likely be able to join the call now.

Looking forward to it,

Jonna

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 12/22/2017 7:48:17 AM (-08:00)  
**To:** "Amanda Fine" <[REDACTED]>; "Damien Joly" <djoly@metabiota.com>; "Dawn Zimmerman" <Zimmermand@si.edu>; "Eddy Rubin" <erubin@metabiota.com>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Karen Saylor" <ksaylor@metabiota.com>; "Leilani Franciso" <francisco@ecohealthalliance.org>; "Murray, Suzan" <MurrayS@si.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Woutrina A Smith" <wasmith@ucdavis.edu>; "Simon Anthony" <sja2127@columbia.edu>; "Sarah Olson" <[REDACTED]> "William Karesh" <karesh@ecohealthalliance.org>; "Tammie O'Rourke" <torourke@metabiota.com>  
**Cc:** "David John Wolking" <djw@gmx.ucdavis.edu>; "Alison Andre" <andre@ecohealthalliance.org>; "Amanda Andre" <amanda.andre@ecohealthalliance.org>; "Ava Sullivan" <sullivan@ecohealthalliance.org>; "Brian Bird" <bhbird@ucdavis.edu>; "Brooke Genovese" <bgenovese@ucdavis.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Corina Grigorescu Monagin" <cgmonagin@ucdavis.edu>; [REDACTED] <[REDACTED]> "Emma Lane" <lane@ecohealthalliance.org>; "Evelyn Luciano" <luciano@ecohealthalliance.org>; [REDACTED] <[REDACTED]> "Molly Turner" <turner@ecohealthalliance.org>; "predict@ucdavis.edu" <predict@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>  
**Subject:** Happy Holidays & UCD Closure

Dear Predict,  
Thank you for an amazingly productive 2017.  
We're looking forward to an even more fun and fantastic 2018!  
The Davis office will be closed between now and January 2nd. If you need me for emergencies or outbreaks, please text [REDACTED]  
Hopefully you all will have a peaceful and relaxing holiday.  
Talk to you in the New Year!  
Jonna

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 02/13/2020 10:17:37 AM (-08:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Cc:** "JMHUGHE@emory.edu" <jmhughe@emory.edu>; "rcolwell@umiacs.umd.edu" <rcolwell@umiacs.umd.edu>; "Saif, Linda" <saif.2@osu.edu>; "William B. Karesh" <karesh@ecohealthalliance.org>; "Hume Field" <hume.field@ecohealthalliance.org>; "Hongying Li" <li@ecohealthalliance.org>; "Alison Andre" <andre@ecohealthalliance.org>; "Aleksei Chmura" <chmura@ecohealthalliance.org>  
**Subject:** Re: Invitation to act as a signatory on a Statement of Support for Scientists and Health Professionals of China Combatting 2019-nCoV

Peter says I'm already on, but just in case -- yes,  
Jonna AK Mazet

Jonna AK Mazet, DVM, MPVM, PhD  
Professor of Epidemiology & Disease Ecology  
Executive Director, One Health Institute  
Director, One Health Workforce – Next Generation of USAID Emerging Threats Division  
Director Emeritus, PREDICT Project of USAID Emerging Threats Division

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For scheduling and logistical issues, please contact:  
Ms. Mary Radford  
[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)  
+1-530-752-3630

On Sun, Feb 9, 2020 at 9:20 PM Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

Dear Fellow Scientists and Colleagues,

Like most of you, I've been following the events around the emergence of 2019-nCoV in China very closely and have been dismayed by the spreading of rumors, misinformation and conspiracy theories on its origins. Some of these are now specifically targeting scientists and health professionals with whom we've all collaborated for many years, and who have been working extremely hard to fight this outbreak and share data with unprecedented speed, openness and transparency. These conspiracy theories threaten to undermine the very global collaborations that we need to deal with a disease that has already spread across continents. They have been condemned by many of you, including today by the WHO DG, Dr. Tedros Adhanom Ghebreyesus.

**Drs. Linda Saif, Jim Hughes, Rita Colwell, William Karesh and Hume Field** have drafted a simple statement of support for scientists, public health and medical professionals of China fighting this outbreak (attached), and we invite you to join us as the first signatories (a full list of invited signatories is also attached). If you agree, we will add your name and affiliation, and make this letter public, with a sign-up webpage for others to show their support. I will also personally present this at my plenary lecture during the International Congress on Infectious Diseases (ICID) conference in Malaysia in just under two weeks, with



the goal of sending our message directly to the region under most pressure from this outbreak. We will also circulate a copy of the letter in Mandarin so that our Chinese colleagues are directly communicated with.

I sincerely hope you can join us in this statement. If you agree to add your support, please reply-all to:

a) confirm your support (a simple 'yes' is fine);

b) confirm your full name and affiliation exactly as you would like these to appear on the statement

Thank you for your consideration and support of the scientific and public health community around the world!

Yours sincerely,

Peter

**Peter Daszak**

*President*

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Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

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**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 01/04/2017 10:54:56 AM (-08:00)  
**To:** "Catherine Machalaba" <Machalaba@ecohealthalliance.org>  
**Cc:** "Billy Karesh" <karesh@ecohealthalliance.org>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Kevin J. Olival" <olival@ecohealthalliance.org>; "Anthony, Simon J." <sja2127@cumc.columbia.edu>; "Alison Andre" <andre@ecohealthalliance.org>  
**Subject:** One Health Short-course Training - Tanzania and Rwanda  
**Attachments:** rx-one-health-2017-flyer.pdf

Dear Catherine,

I'm looking forward to seeing you & catching up. As I know you are acutely aware, there is an ongoing need for more training for on-boarding individuals in One Health, especially those coming into project leadership positions. Attached is an announcement for our summer Rx One Health short course offered by UC Davis, University of Rwanda, and Sokoine University of Agriculture developed as an adjunct to other training programs to help fill some of the void.

We have been developing this course idea for several years. In fact, it builds upon our previously very successful Envirovet Summer Institute. That course was also for health professionals but with a more specific wildlife and veterinary focus. We decided to reinvent the course after a hiatus, now offering it with a solid One Health focus. Especially with GHSA and rapid on-boarding needs for local and global projects in health, we are finding that the pool of local professionals trained in One Health and available for hire is quite shallow. The Tanzania portion of the course is being primarily developed by me, Woutrina Smith, our medical school and veterinary faculty, Prof Kazwala, and our fabulous Tanzanian collaborators. The Rwanda portion is being led by Kirsten Gilardi from our side with the same med & vet school faculty, as well as University of Rwanda and our other Rwandan collaborators.

We hope to have a mix of international trainees. I would appreciate your support in circulating the flyer to those who you think might be interested in attending and able to participate.

Happy New Year & see you in the Spring!  
Jonna

[Jonna AK Mazet, DVM, MPVM, PhD](#)

Professor of Epidemiology & Disease Ecology

Executive Director, One Health Institute

Global Director, PREDICT Project of USAID Emerging Pandemic Threats Program

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For scheduling and logistical issues, please contact:

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[+1-530-752-3630](tel:+15307523630)



# Rx One Health 2017



**Interested in One Health problem-solving at the animal/human/environmental health interface?**

Want to learn as a part of an interdisciplinary team working in the field? Do you want to gain skills related to leadership, communication, cultural competency, and field & laboratory assessments? If so, then this educational Rx (or prescription) is just right for you!

Join us for an intensive **4-week course** (4 June - 30 June 2017) aimed at early career health, agriculture, and conservation professionals who wish to gain knowledge and skills in the principles and practices of **One Health**. A maximum of 22 participants, mentored by dozens of faculty experts, will be accepted for the program, so please apply early!

More information: <http://rx.onehealth.institute>

**Course Fee:** US \$4,500/participant inclusive of all travel within & between Tanzania and Rwanda during the course.

*Enrolled participants will be responsible for their own travel costs to Tanzania at the start of the course and from Rwanda at the end of the course.*

**Application packets are due by:**  
5 pm PST on January 30, 2017

## Part 1: TANZANIA

**4 – 16 June: Southern Highlands and Coast**

Building transdisciplinary collaborations to solve health problems and to recognize interdependence among animals, humans, and their environments in Tanzania, you will gain first-hand knowledge and experience with diverse One Health challenges. You will design solutions around the following themes: planetary health, zoonotic disease and mitigation strategies, field and laboratory study designs, biosafety & security, wildlife conservation, food safety and sustainability, and community engagement. You will travel the country and build new friendships and skills.

## Part 2: RWANDA

**17 – 30 June: Volcanoes Nat'l Park Communities**

In Rwanda, you will experience the beauty and complexity of a rapidly developing country that strives to balance health, livelihoods, cultural sensitivity, and environmental change. You will engage with mentors and stakeholders to develop One Health strategies for meeting community needs such as improved human health through enhanced nutrition and maternal/child health, reduced infectious disease, improved animal health through sustainable livestock production, and improved ecosystem health through conservation. You will innovate and immerse in One Health ideas.

### FACULTY OVERSIGHT COMMITTEE

UCD School of Veterinary Medicine | UCD School of Medicine | Sokoine University of Agriculture | University of Rwanda



**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 01/18/2017 8:36:51 AM (-08:00)  
**To:** "Ariel Pablos" [REDACTED]  
**Cc:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Beijing

Wonderful,  
We'll debrief and brainstorm with you in February.  
Enjoy your travels,  
Jonna

On Tue, Jan 17, 2017 at 7:26 PM, Ariel Pablos [REDACTED] wrote:  
Thank you Jonna. I would love to follow up with you and Peter after Beijing. I am still deciding where I will land and how to remain engaged and supportive of this great project. Ariel

Sent from my iPhone

On Jan 17, 2017, at 9:17 PM, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Hi Ariel,  
Let me know if you'd like to do a call in prep for our upcoming meetings and to discuss the path forward.  
Happy to talk when you can,  
Jonna

On Tue, Jan 17, 2017 at 12:13 PM, Ariel Pablos [REDACTED] wrote:  
Thank you Cara. My ethics lawyer suggest best not to have direct comms on business matters. I'll pass on Beijing and can only follow up with Jonna, Peter or Ian as appropriate. Best wishes, Ariel

Sent from my iPhone

On Jan 17, 2017, at 1:35 PM, Cara Chrisman <[cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)> wrote:

Hi Ariel,

In the interim, I have provided your email address to Hongying, who is handling the invitation letters, so you should expect an email from her in order to provide the letter for visa purposes. She is also in charge of the hotel reservations, in case you would like to communicate regarding that with her. Her email is:  
[li@ecohealthalliance.org](mailto:li@ecohealthalliance.org)

Best,  
Cara

Cara J. Chrisman, PhD  
Senior Infectious Diseases Technical Advisor  
Emerging Threats Division

Office of Infectious Disease  
Bureau for Global Health  
U.S. Agency for International Development (USAID)

Desk: (202) 712-1161  
Cell: REDACTED  
E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)

On Thu, Jan 12, 2017 at 9:37 PM, Ariel Pablos REDACTED wrote:  
No worries. I could figure out a stop in Beijing in my return from BKK but the Chinese would need to host. I am also checking with GC if even that is allowed - I cannot directly discuss business with you. They have the last word. Ariel

Sent from my iPhone

On Jan 12, 2017, at 4:32 PM, Dennis Carroll <[dcarroll@usaid.gov](mailto:dcarroll@usaid.gov)> wrote:

Ariel, we have discussed with the GC office and they advise it is not possible for us, through UC Davis to support any of your travel. I am looping in Jonna. Not sure what options we have.

d

On Tue, Jan 10, 2017 at 11:29 AM, Dennis Carroll  
<[dcarroll@usaid.gov](mailto:dcarroll@usaid.gov)> wrote:

Ariel, I am looping in Cara who is in California with predict which is arranging hotels. She can make sure you re covered

Dr Dennis Carroll  
Director, Emerging Threats Program  
U.S. Agency for International Development  
Office: (202) 712-5009  
Mobile: REDACTED

> On Jan 10, 2017, at 11:18 AM, Ariel Pablos  
REDACTED wrote:

>  
> Hi Dennis,  
>  
> I am exploring ways to make it to the meeting.  
> Others might cover my flight. Can locals cover hotel?  
>  
> Would it be better to do this with Peter?  
> (and your personal email address)  
>  
> Ariel

--  
Dr. Dennis Carroll

Director, Emerging Threats Program  
Bureau for Global Health  
U.S. Agency for International Development

Office: 202-712-5009

Mobile: REDACTED



**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 02/02/2017 9:01:06 AM (-08:00)  
**To:** "Kevin Olival, PhD" <olival@ecohealthalliance.org>; [REDACTED]  
**Cc:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Alison Andre" <andre@ecohealthalliance.org>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "sja2127@cumc.columbia.edu" <sja2127@cumc.columbia.edu>  
**Subject:** RE: Viral Risk Ranking draft participant worksheet  
**Importance:** High

Very sorry I missed the call. I couldn't get reception where I was. I spoke with Kevin later on and he said you're going to wait for me (thanks!). I'll go through everything on the plane to China and email back comments etc.

Cheers,

Peter

**Peter Daszak**

*President*

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**From:** Kevin Olival, PhD  
**Sent:** Wednesday, February 1, 2017 4:33 PM  
**To:** [REDACTED]  
**Cc:** Peter Daszak; Jonna Mazet; Alison Andre; Tracey Goldstein; Christine Kreuder Johnson; sja2127@cumc.columbia.edu  
**Subject:** Re: Viral Risk Ranking draft participant worksheet

Sure you guys have seen this, in case not:

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0048519>

**Kevin J. Olival, PhD**

*Associate Vice President for Research*

EcoHealth Alliance  
460 West 34th Street – 17th floor

New York, NY 10001

1.212.380.4478 (direct)

REDACTED (mobile)

1.212.380.4465 (fax)

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[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

On Feb 1, 2017, at 12:00 PM, Kevin Olival, PhD <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)> wrote:

Drop downs are working! Thanks.

**Kevin J. Olival, PhD**

*Associate Vice President for Research*

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On Feb 1, 2017, at 11:17 AM, REDACTED wrote:

Hi Kevin,

Great points about the spillover statement and further ranking of levels within a parameter, I agree both need to be revised.

The spreadsheet should have dropdown boxes with levels of ranking for the factors and the level of expertise, let me know if it isn't working.

Look forward to catching up later.

Cheers,

REDACTED

REDACTED

REDACTED

REDACTED

---

**From:** "Kevin Olival, PhD" <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)>  
**Date:** Wednesday, February 1, 2017 at 11:00 AM  
**To:** REDACTED  
**Cc:** Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>  
**Subject:** Re: Viral Risk Ranking draft participant worksheet

Hi REDACTED

Sorry for not chiming in sooner. I'll review today before the call at 4pm EST.

Couple of notes on the email below:

I would delete " In this context, a spillover event occurs when a reservoir population with a high pathogen prevalence comes into contact with a novel host population." This is introducing bias to their ranking up front, and is not necessarily a universally excepted definition of spillover. For example what is a "reservoir population" and why is "high pathogen prevalence" a condition? Can't you have spillover in the case of a relatively low prevalence, given the presence of other important risk factors?

Also, maybe just define this statement a little more? "The levels of severity within each of the parameters will be evaluated at a later date. "

Lastly, not sure if I missed something obvious in the email below or the spreadsheet itself, but what system are we using for ranking and level of expertise respectively? 0-10 for both? 1-5? High, medium, low?

Thank you!  
Kevin

**Kevin J. Olival, PhD**

*Associate Vice President for Research*

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On Jan 19, 2017, at 7:44 PM, REDACTED wrote:

Hi Kevin and Peter,

I have attached a draft version of the viral risk ranking expert opinion worksheet for your review. Please can you go through the exercise (described below) and send me your feedback prior to the co-author meeting at 1PM PST / 4PM EST on the 1<sup>st</sup> of February.

If you have suggestions / opinions on any aspect of the exercise, either note them in the comments section of the worksheet or save them to discuss at the co-author meeting. I will send an agenda nearer to the time.

Happy to be working with you,

REDACTED

---

#### PARTICIPANT EMAIL TEMPLATE

Dear Participant,

You are receiving this email because you have been selected as an expert in one or more of aspects of disease ecology, epidemiology or virology. Prof. Jonna Mazet, Global Director of PREDICT (<http://predict.global>) and I, REDACTED would like to invite you to complete a short assessment of selected host, viral and environmental factors in terms of their importance in the risk of a viral spillover event from animals to humans. In this context, a spillover event occurs when a reservoir population with a high pathogen prevalence comes into contact with a novel host population.

If you decide to participate, your expert opinion will be used to evaluate the contribution (if any) the factor has in an overall risk assessment of novel and known viruses detected in animals. At this point we are primarily interested in how much each parameter should affect the overall assessment of spillover risk.

The levels of severity within each of the parameters will be evaluated at a later date. We anticipate the time allocation to this exercise will be 10 to 20 minutes.

This study is intended for scientific publication, all contributions to this exercise are voluntary and identifying information will not be published. We ask that the attached worksheet remain confidential and not to be shared with others.

**Instructions:**

- 1) Please open and save the worksheet with your initials in the title (i.e. Participantworksheet\_ZG.xlsx)
- 2) Complete the first tab called 'Demographic Information'
- 3) Open the second tab called 'Risk Ranking Worksheet'
  - a. Answer all categories for 'Importance for risk of viral spillover event' and 'Level of expertise' using provided dropdown options
  - b. Completion of the 'Comments' box is optional
- 4) Please return your completed worksheet to [REDACTED] v [REDACTED] 2017

Please accept my gratitude for your time and contribution to scientific collaboration.

Kind regards,

[REDACTED]

[REDACTED]

[REDACTED]

<participantWorksheet\_v2.xlsx>

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 02/16/2017 9:50:49 PM (-08:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Subject:** Re: Predict management needs per your request

Thanks Jonna I'll get onto these and fixing issues with Jon TODAY!!!

Cheers,

Peter

Peter Daszak  
(Sent from my iPhone)

President  
EcoHealth Alliance

460 West 34th Street, New York, NY10001, USA

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On Feb 17, 2017, at 7:41 AM, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Hi peter,

Thanks for your suggestion to have these bullets for your reference on currently identified project needs. These are the items I need for you to address:

- General
  - Ensure all subawards and subcontracts are consistent with and contain USAID Cooperative Agreement flow down language and that appropriate approvals for all new agreements are sought and approved prior to engaging in work
  - Review with all in-country management the best practices for hiring staff, secondments, and volunteers, as discussed on EB and in communications between UCD admin team and your team, including, but not limited to:
    - No topping up of salaries above full-time for career professionals hired full-time by governments or other USG projects
    - Volunteers and those seconded must have letters of approval from their employer acknowledging that their work on Predict is an approved work function and that financial relationships are appropriate
    - Country Coordinator is considered to be a full-time position, unless otherwise negotiated and approved (ensure special circumstances, such as Tom Hughes's situation, have been communicated, discussed, and agreed upon by all parties, including UCD)
  - Demonstrate that mechanisms are in place so that Country Coordinator and other appropriate in-country staff are in constant communication with HQ staff responsible for oversight, and all relevant communications from EB, Surveillance, Lab, Behavior. teams, etc. are passed on to inform and guide in-country operations on a timely basis

- Guarantee that all in-country staff are trained in Predict operations and fully aware of the project in which they are participating -- it's goals and deliverables (identifying viral sharing and for EHP countries, discovering viable hosts for filoviruses and other priority viruses), including capacity building mission and conservation and collaborative ethic
- For GHSA countries, make sure all staff are fully aware of sensitivities and briefed on issues related to communications and alignment with GHSA action packages, etc.
- Facilitate smooth mission communications in all EHA countries, as well as appropriate clearing of data with governments prior to discussion with other entities and public release
- Ensure collaborative, rather than competitive spirit is pervasive throughout the project, especially need your efforts and provision of best example with your senior leadership (not saying that there is a problem, but one could develop if we are all not careful)
- Make sure Leilani is on-boarded in the best possible manner and with a collaborative spirit. Please help me avoid previous problems by not leading her to believe that it is her job to analyze all data and be the only one identifying or speaking on behalf of risk characterization. I think today went well. We would likely be best served if she and Chris follow the model by Tracey and Simon by meeting monthly and possibly switching off on coasts for these meetings to make sure they are operating as a strong team from the beginning.
- Surveillance
  - Ensure workplan, budgets and activities are consistent with collaboratively-established Predict goals and procedures
  - Evaluate each country's operations for consistency with overall Predict plan and bring exceptions and discrepancies and justification to my attention (for example, only doing bats and pigs in country X, development of brand new laboratory in country Y)
  - Make sure that each country team is aware of and committed to identifying viral sharing, as planned activities discussed for countries on calls and in first versions of workplans (even this year) do not always reflect that viral sharing is being investigated or that adequate sample sizes per target taxa are being sought and tested
  - If budget is adequate and special projects are planned in certain countries after core goals are met, please bring these plans to my attention so that we can make sure to get them approved in the workplan and so that I can be aware when questioned for support (e.g. using other testing modalities, exploring extra sites or populations or interfaces, etc.)
  - Make sure data are getting entered into EIDITH in the appropriate timeframe
- Lab
  - Please make sure your new laboratories (there are many since we added the human work) are properly on-boarded by you lab lead, Simon, or lab technical team at CII. We are not sure how this process is working, but it seems guidance in the current phase has been minimal by the appropriately-informed people, so many questions are coming to our lab team to field on really basic issues. It seems country managers may be passing on guides, but training has not been sufficient for the new labs to appropriately conduct the work independently. While our team is happy to help, this heavy operational lifting needs to move back to your team from UCD's.
- Liberia-specific requests
  - Please broker and supervise relationship and communications between and Jon and Jim

- Jim appears to remain concerned about a 9-5 work schedule, and immediately after our call this morning, Jon gave Jim mixed messages regarding Jim's 40 hour schedule being flexible hours, rather than 9-5 except when in the field. This item needs to be settled before the Mission meeting.
- You and I were of one voice on this topic that Jim needs to be available 40 hrs a week during regular (Mission) work hours, unless schedule is altered because of field activities for Predict. We will support Jim's desire to be able to work for the chimp sanctuary during off hours (nights and weekends) as long as it doesn't impact Predict productivity (e.g. can't do his Predict job because too tired, etc. -- unlikely), but apparently this arrangement is not yet satisfactory for Jim (as of today after our call).
- I don't want to be in the situation of having to inform you of what is going on, so I would very much appreciate it if you would step into the mix and their communications until these issues (legal and Mission) are sorted. We are uncomfortable being in the middle of these difficult conversations, but to-date, we are apparently getting more information about challenges from your team, as I and members of our team are participating in calls where these issues get discussed and where it is incredibly clear that Jon and Jim are not always on the same page and often when they are together on an issue, their choice of action is directly in conflict with Predict and USAID's concerns.
- I would like to work with you to make sure that you are informed by direct observation of these situations (rather than our team), as it appears that in Jon speaking with Jim and then later speaking with you, things get lost in translation, and you get a softened perspective on the real problem. None of us want to feel like we are tattling to you on these issues. It feels awful, and the issues are only raised to me and then you out of sincere concerns for the project, especially at this time of heightened awareness.

I think this list is enough for now, and I how I provided what you were asking me to email in our call.

Safe travels,  
Jonna



**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 03/05/2017 2:57:38 PM (-08:00)  
**To:** "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>  
**Cc:** predict-outbreak@ucdavis.edu; "Brian Bird" <bhbird@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Arif Islam" <Arif@ecohealthalliance.org>; "Emily Hagan" <hagan@ecohealthalliance.org>  
**Subject:** Re: Human encephalitis outbreak report March 5 - Bangladesh  
**Attachments:** Human Ecephalitis\_PREDICT Bangladesh\_Faridpur\_March 5 2017 JM.docx, Human Ecephalitis\_PREDICT Bangladesh\_Faridpur\_March 5 2017.docx

Here's a tracked version and clean version for your updating. I have sent the clean onto USAID.  
Thank you,  
Jonna

On Sun, Mar 5, 2017 at 12:17 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:  
Thanks, Mindy & Arif,  
Jonna

On Sun, Mar 5, 2017 at 8:52 AM, Dr. Melinda Rostal <rostal@ecohealthalliance.org> wrote:  
Dear Outbreak team,  
Please see the attached report for today's update.

Kind regards,  
Mindy

**Melinda Rostal DVM, MPH**  
*Senior Research Scientist*

*PREDICT 2 Surveillance Coordinator for EcoHealth Alliance*

*Rift Valley Fever Virus Project Manager*

EcoHealth Alliance  
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**PREDICT Outbreak Rapid Report**

**Today's Date:** March 5

**Cumulative day of the outbreak investigation:** 23, Predict involvement 3 days

**Working Title of Investigation:** *Human\_Encephalitis\_Bangladesh\_Faridpur\_Pabna\_2017*

**Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife):**  
 On 2<sup>nd</sup> of March, the PREDICT team was notified that there were three human encephalitis cases that were suspected to be Nipah virus by the Director of the Institute of Epidemiology, Disease Control & Research (IEDCR). The government has not officially announced the outbreak to be Nipah virus, but under the assumption that it may be Nipah virus, IEDCR is conducting an outbreak investigation in the two areas with cases, Faridpur and Pabna (approximately 100 km apart). As the reservoir for Nipah virus is flying foxes (*Pteropus* bats), IEDCR requested PREDICT to provide assistance in wildlife sampling and domestic animals sampling (if needed). No ill domestic or wild animals have been noted to be associated with these human cases.

All three patients have a history of drinking raw date palm sap (which is known to be associated with Nipah virus transmission) and had symptoms of encephalitis. Two of the patients died, the third is recovering.

Location	
<b>Country:</b>	Bangladesh
<b>District:</b>	Faridpur and Pabna
<b>Village/Town:</b>	Joyk ali Dangipara, Saltha, Faridpur Uttar Radobpur, Pabna Sadar, Pabna
<b>GPS Coordinates (if known):</b>	Unknown at this time
<b>Date that first case(s) of illness occurred (if known or estimate):</b>	February 11 and 13, 2017
<b>Date that PREDICT was first notified of outbreak:</b>	March 2, 2017

Key Information	Description of Findings/Actions/Outcomes
How many affected individuals?	Human: Suspected <u>3</u> Confirmed <u>0</u> Deaths <u>2</u> Domestic animal: Suspected <u>0</u> Confirmed <u>0</u> Deaths <u>0</u> Wild animal: Suspected <u>0</u> Confirmed <u>0</u> Deaths <u>0</u>
How was outbreak first noticed?	All three cases were detected through ongoing Nipah virus surveillance at hospitals.
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	The first two cases were reported in Faridpur and Pabna. The locations are far enough apart to be considered separate outbreaks. Faridpur is part of the so-called "Nipah belt" and has annual cases. Pabna has not previously reported Nipah virus cases. At this time, all suspected cases of Nipah virus are attributed to drinking raw date palm sap – which is essentially a direct transmission event from flying foxes to humans. No human-to-human transmission has been reported as of yet.
Has the country requested support from PREDICT (include date of request)?	The Director of IEDCR invited PREDICT to support the animal investigation component of this outbreak on March 2, 2017.
If so, which government agency requested PREDICT support?	Institute of Epidemiology, Disease Control and Research (IEDCR) and One Health Secretariat of Bangladesh under Ministry of Health and Family

	Welfare, Government of the people's Republic of Bangladesh.
When was PREDICT response initiated (date)?	March 3, 2017
Are other EPT partners involved in the response (which ones and how)?	At this time, no other EPT partners are responding to this outbreak.
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	PREDICT assisted with recommendations for the animal investigation component and sent a small team to collect samples from bats in Faridpur.
When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)?	The outbreak has yet to be officially acknowledged, and participation was invited on the assumption that this could be a Nipah virus outbreak.
When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?	The response was initiated by the Director of IEDCR on March 2, 2017. In this outbreak response, the Ministry of Health & Family Welfare and icddr,b are involved in the response. A joint team of epidemiologists from IEDCR and icddr,b are in the field investigating the human cases. US CDC Field Epidemiology Training Bangladesh Fellow is also with the team in the field. icddr, will also be involved as a PREDICT lab partner to support preliminary testing from animal samples. Prof. Dr. Meerjady Sabrina Flora, Director, IEDCR is in charge of the national response.
Was the cause of the outbreak confirmed by a laboratory? If so, give details, including cause, species, specimen types tested and dates of testing if known.	The etiology of outbreak is suspected based on symptoms and relevant clinical history, and confirmatory laboratory testing is on-going.
Where was the laboratory testing performed (name of laboratory)?	IEDCR for the human samples, icddr,b for PREDICT animal samples.
Number of days between initiation of government response and lab confirmation of laboratory results.	Confirmed diagnostic results from the Government of Bangladesh have not been released.
<b>Summary of the Outbreak:</b>	<b><u>To be filled after active outbreak activity has ceased</u></b>
<b>Working name of the outbreak (e.g., Yellow Fever - DRC)</b>	
<b>Total number of cases:</b>	Human: Suspected <u>  3  </u> Confirmed <u>  0  </u> Deaths <u>  2  </u> Domestic animal: Suspected <u>  0  </u> Confirmed <u>  0  </u> Deaths <u>  0  </u> Wild animal: Suspected <u>  0  </u> Confirmed <u>  0  </u> Deaths <u>  0  </u>
<b>Summary of PREDICT Team response activities during the outbreak.</b>	Will provide at the end of outbreak activities.

**PREDICT Response Timeline**

**Working Title of Investigation:** *Human\_Encephalitis\_Bangladesh\_Faridpur\_Pabna\_2017*

**Key Events:**

Date	Day #	Notification or Action Taken
February 11	1	First case retrospectively identified in Pabna
February 13	3	First case retrospectively identified in Faridpur
March 2	20	First notification to PREDICT team of possible Nipah outbreak
March 2	20	CC notification to PREDICT lead partner
March 2	20	Notification from PREDICT lead partner to PREDICT leadership
March 2	20	Notification from PREDICT leadership to USAID
March 3	21	Permission to engage in initial outbreak response and assessment of budget implications full engagement
March 5	23	PREDICT field team was dispatched to conduct surveillance in flying foxes. The team in Faridpur conducted initial reconnaissance, visited the sites where the human cases were reported, identified flying fox roosts and described the ecological characteristics, counting bats, identifying the species, calculating the distance between the roosts and the homes. The team in Padna will conduct reconnaissance tomorrow.

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**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 04/23/2017 8:57:06 AM (-07:00)  
**To:** "sja2127@cumc.columbia.edu" <sja2127@cumc.columbia.edu>; "Lipkin, Ian W." <wil2001@cumc.columbia.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Nathan Wolfe" <nwolfe@metabiota.com>; "William B. Karesh" <karesh@ecohealthalliance.org>; "Kramer, Sarah C." <sck2165@cumc.columbia.edu>; "Wells, Heather L." <hlw2124@cumc.columbia.edu>; "Xiaoyu (Jason) Che" <xc2273@columbia.edu>; "Dr. Damien Joly" <djoly@metabiota.com>; "Chris Johnson" <ckjohnson@ucdavis.edu>; "Allison Harrington" [REDACTED]; "Denise Greig" [REDACTED]; "Dr. Steve Morse" <ssm20@columbia.edu>  
**Subject:** RE: Global CoV paper accepted

Well done Simon and everyone!

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

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---

**From:** Anthony, Simon J. [mailto:sja2127@cumc.columbia.edu]

**Sent:** Sunday, April 23, 2017 10:42 AM

**To:** Lipkin, Ian W.; Jonna Mazet; Tracey Goldstein; Nathan Wolfe; Peter Daszak; William B. Karesh; Kramer, Sarah C.; Wells, Heather L.; Xiaoyu (Jason) Che ; Dr. Damien Joly; Chris Johnson; Allison Harrington; Denise Greig; Dr. Steve Morse

**Subject:** Global CoV paper accepted

Dear all,

I just received word from Virus Evolution that our global coronavirus paper has been accepted for publication! Congratulations!!! AND the sun is shining today, so a jolly good day all round. :o)

I'll keep you posted on the exact publication date.

Cheers!!!



S.

---

Simon J Anthony, D.Phil  
Assistant Professor, Department of Epidemiology  
Center for Infection and Immunity, Columbia University

722 West 168th Street, 17th Floor  
NY, NY, 10032

Email: [sja2127@cumc.columbia.edu](mailto:sja2127@cumc.columbia.edu)

Mobile: **REDACTED**

Office: 212-342-0558

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 05/09/2017 9:14:14 AM (-07:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Alison Andre" <andre@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Kevin Olival, PhD" <olival@ecohealthalliance.org>  
**Cc:** "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "David J Wolking" <djwolking@ucdavis.edu>; "Elizabeth Leasure" <ealeasure@ucdavis.edu>; "Evelyn Luciano" <luciano@ecohealthalliance.org>  
**Subject:** RE: For next week -- specific details/ideas

No problem – look forward to that.

We're getting ready over here with contract, staffing, workplan and other details for all countries. We'll have each country liaison POC available throughout the day by phone here at EHA and will have admin in the room (Molly) and on the phone (Evelyn and Ava).

Anything else we need to think about ready for the meeting?

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

+1.212.380.4473 (direct)  
+1.212.380.4465 (fax)  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Monday, May 8, 2017 4:06 PM  
**To:** Peter Daszak; Alison Andre; Jon Epstein; Kevin Olival, PhD  
**Cc:** Christine Kreuder Johnson; Tracey Goldstein; David J Wolking; Elizabeth Leasure  
**Subject:** For next week -- specific details/ideas

Hi there,

As you prepare for our discussions next week, I'd like to specifically highlight that we are likely to propose changes in the human surveillance in China and Indonesia.

Just asking you to be prepared to discuss options going forward,.

Thanks,

Jonna

**From:** REDACTED on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 05/11/2017 2:33:07 PM (-07:00)  
**To:** "Leilani Francisco" <francisco@ecohealthalliance.org>  
**Cc:** "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Behavior Plan

Yes, please on the silly disclaimer. I had to add that to send it to you ;)  
J

On Thu, May 11, 2017 at 2:21 PM, Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)> wrote:

Hi all,

Thanks for all of the great feedback on the presentation.

Please find attached an updated version.

For the table of quotes on Slide 14, the first row was the only row without quotes so I added some to make it consistent with the other 4 rows.

- **Important note:** the map on Slide 13 has been added for the presentation on my and Peter's laptops only. We will not share it with anyone and will delete the map immediately after the meeting.

On a related note, is the header for the map on Slide 13 ok? Do you want "NOT INTENDED FOR REDISTRIBUTION" to appear in the graphic on the slide?

I look forward to your thoughts.

Best,

Leilani

---

**From:** Leilani Francisco [mailto:[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)]  
**Sent:** Monday, May 8, 2017 4:04 PM  
**To:** 'Jonna Mazet' <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Cc:** 'Christine Kreuder Johnson' <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** RE: Behavior Plan

Hi Jonna and Chris,

Please find attached the latest draft of the presentation for the meeting with USAID on Friday.

I've also attached a clean version of the communication campaign strategy document which I can print out and bring along if that sounds good to you.

A quick note on the order of the contents:

- I started with a brief background (from the workplan; I deleted content on the RFA) and a little on behavior change and program evaluation theories to frame the discussion. I won't spend much time on them (unless they give cues that they would like to).
- I followed this with Spotlight 1 on the WA communication campaign, then Spotlight 2 on bat-communication messaging reflecting analysis of qualitative data from other countries. It wraps up with next steps.
- I put the campaign before the broader qualitative analysis because we wanted the focus to be on the campaign but please let me know if you'd like anything re-ordered.

I look forward to your feedback.

Thanks in advance,

Leilani

---

**From:** Leilani Francisco [<mailto:francisco@ecohealthalliance.org>]  
**Sent:** Thursday, May 4, 2017 12:56 PM  
**To:** 'Jonna Mazet' <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Cc:** 'Christine Kreuder Johnson' <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** RE: Behavior Plan

Great, thanks Jonna.

Everyone is available at 12:30 PDT. I've just sent an invite with the dial-in information.

Best,

Leilani

**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Wednesday, May 3, 2017 9:56 PM  
**To:** Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)>

**Cc:** Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Re: Behavior Plan

I have availability between 12:30 and 3:30 Pacific.

Thanks,

J

On Wed, May 3, 2017 at 5:30 PM, Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)> wrote:

Perfect, this all sounds great, thanks so much.

Any time after 12:30 pm CA time on Wednesday works for me.

I can send an invite as a placeholder if that would be helpful. If yes, please let me know what window works best and I'll coordinate with Chris and Peter to firm up a time.

Best,

Leilani

On May 3, 2017, at 8:06 PM, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Great that you guys are well coordinated. I'm good with you adding that content, sounds enriching.

Monday is fully booked & my first day back to the office and whatever that will bring.

Could you send drat Monday and then we could discuss Wednesday? If I have major issues on first glance, I could get you some quick feedback prior to a call. I have opening Wednesday midday.

Let us know,

Jonna

On Wed, May 3, 2017 at 3:18 PM, Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)> wrote:

Hi again,

Would it be possible to set up a time on Monday to discuss the presentation?

For now, based on our latest discussions, I plan to focus on the communication plan (I'm working with Aiah and Tracey on updates as we speak).

We can also use the previously reviewed presentation deck.

I was wondering if it would be ok to add some content to the deck, e.g., content on behavior change theory and program evaluation concepts (to illustrate the link to the end goal), etc. Chris mentioned today that this would be ok and I'd really like to add this if it's ok with you. Please let me know if all of this sounds ok and if there's anything that you'd like me to focus on/include/exclude and I'd be happy to accommodate.

Many thanks,

Leilani

---

**From:** Leilani Francisco [mailto:[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)]  
**Sent:** Wednesday, May 3, 2017 3:31 PM  
**To:** 'Jonna Mazet' <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Cc:** 'Christine Kreuder Johnson' <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** RE: Behavior Plan

Hi Jonna,

Thanks for checking in, hope the travels are going well and great news about the call.

I touched base with Chris today on content for the slides.

Would it be ok if I get the slides to you on Monday?

Best,

Leilani

**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Wednesday, May 3, 2017 3:10 PM  
**To:** Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)>  
**Cc:** Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Behavior Plan

Hi Leilani,

Just checking in from New Zealand on the Behavior Plan that will be shared with USAID on May 12. I want to make sure we don't get into the same situation as last time with a very short opportunity to review, weigh-in, and revise.

Could you provide us with the anticipated schedule?

Also, looks like I will likely be able to join the call now.

Looking forward to it,

Jonna



**From:** [REDACTED]  
**Sent:** 05/22/2017 1:53:57 PM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** FINAL CALL – Invitation to Participate in Virus Risk-Ranking Assessment  
**Attachments:** RiskRankingParticipantWorksheet.xlsx

Dear Dr. Peter Daszak,

We hope that you previously received our email soliciting your expert opinion and requesting your participation in a short multidisciplinary process to assess spillover risk from newly detected viruses. The deadline for participation has now passed, and we have begun analyzing responses. However, as an expert in the field of infectious diseases, your contribution to this exercise would be highly valued and appreciated. Therefore, we would like to make a **final call** for your participation in this exercise. If possible, please take a moment of your time to review the information below, and complete the attached worksheet. We anticipate the time allocation to this exercise will be **10 to 20 minutes**. If desirable on your part and your permission is given, you will be acknowledged for time and effort in future associated publications.

As you may have heard, the USAID-supported PREDICT project ([www.predict.global](http://www.predict.global)) has identified short sequences from nearly 1000 unique viral taxonomic units (by consensus PCR followed by Sanger sequencing) from viral families known to have members that cause zoonotic diseases. These viruses have been detected in samples collected from animals in more than 20 countries in tropical regions considered to be hotspots for emerging zoonotic disease risk.

As a globally renowned scientist in the field of infectious diseases, we would like to incorporate your expert opinion into an evaluation of the relative impact that select host, environmental, and viral factors contribute to the risk of a new human viral spillover or epidemic event that might originate from novel or known viruses of animal origin. At this point, we are primarily interested in how much each parameter contributes to the overall risk of such an event occurring. The levels of severity within each of the parameters will be evaluated through a different process.

The expert opinion you provide will be combined with that of other top experts in the field and is intended to contribute to a risk ranking module that will be distributed to and evaluated by the scientific community both through the peer-reviewed publication process and via an interactive web application. All contributions to this exercise are voluntary, and identifying information will not be published or be otherwise made available unless you let us know that it is acceptable/desirable to acknowledge you. We are only soliciting opinions from a select group of professionals with relevant expertise; therefore, we ask that the attached worksheet remain confidential and not to be shared with others.

**Instructions:**

1. Please open and save the worksheet with your initials or AN for anonymous in the title (i.e. RiskRankingParticipantWorksheet\_ZG.xlsx)

2. Complete the 'Demographic Information' at the top of the spreadsheet
3. Answer all categories for 'CONTRIBUTION TO THE RISK OF A NEW HUMAN VIRAL SPILLOVER OR EPIDEMIC EVENT OF ANIMAL-ORIGIN' and 'LEVEL OF EXPERTISE' using provided **dropdown** options
4. Please return your completed worksheet ASAP to **REDACTED**

We sincerely hope that we can count on your important involvement in the process and that you will accept our gratitude for your time and contribution to scientific collaboration.

Sincerely,

Prof. Jonna Mazet

**REDACTED**

Global Director, PREDICT USAID

Professor of Disease Ecology and  
Epidemiology

One Health Institute

School of Veterinary Medicine

University of California Davis

1089 Veterinary Medicine Drive

Davis, CA 95616, USA

[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)

**REDACTED**

**REDACTED**

produced in native format

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 05/23/2017 6:42:50 AM (-07:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Subject:** RE: FINAL CALL – Invitation to Participate in Virus Risk-Ranking Assessment

Yikes! Doing it now....

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

+1.212.380.4473 (direct)

+1.212.380.4465 (fax)

[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Monday, May 22, 2017 4:54 PM  
**To:** Peter Daszak  
**Subject:** FINAL CALL – Invitation to Participate in Virus Risk-Ranking Assessment

Dear Dr. Peter Daszak,

We hope that you previously received our email soliciting your expert opinion and requesting your participation in a short multidisciplinary process to assess spillover risk from newly detected viruses. The deadline for participation has now passed, and we have begun analyzing responses. However, as an expert in the field of infectious diseases, your contribution to this exercise would be highly valued and appreciated. Therefore, we would like to make a **final call** for your participation in this exercise. If possible, please take a moment of your time to review the information below, and complete the attached worksheet. We anticipate the time allocation to this exercise will be **10 to 20 minutes**. If desirable on your part and your permission is given, you will be acknowledged for time and effort in future associated publications.

As you may have heard, the USAID-supported PREDICT project ([www.predict.global](http://www.predict.global)) has identified short sequences from nearly 1000 unique viral taxonomic units (by consensus PCR followed by Sanger sequencing) from viral families known to have members that cause zoonotic diseases. These viruses have been detected in samples collected from animals in more than 20 countries in tropical regions considered to be hotspots for emerging zoonotic disease risk.

As a globally renowned scientist in the field of infectious diseases, we would like to incorporate your expert opinion into an evaluation of the relative impact that select host, environmental, and viral factors contribute to the risk of a new human viral spillover or epidemic event that might originate from novel or known viruses of animal origin. At this point, we are primarily interested in how much each parameter contributes to the overall risk of such an event occurring. The levels of severity within each of the parameters will be evaluated through a different process.

The expert opinion you provide will be combined with that of other top experts in the field and is intended to contribute to a risk ranking module that will be distributed to and evaluated by the scientific community both through the peer-reviewed publication process and via an interactive web application. All contributions to this exercise are voluntary, and identifying information will not be published or be otherwise made available unless you let us know that it is acceptable/desirable to acknowledge you. We are only soliciting opinions from a select group of professionals with relevant expertise; therefore, we ask that the attached worksheet remain confidential and not to be shared with others.

**Instructions:**

1. Please open and save the worksheet with your initials or AN for anonymous in the title (i.e. RiskRankingPartipantWorksheet\_ZG.xlsx)
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3. Answer all categories for 'CONTRIBUTION TO THE RISK OF A NEW HUMAN VIRAL SPILLOVER OR EPIDEMIC EVENT OF ANIMAL-ORIGIN' and 'LEVEL OF EXPERTISE' using provided **dropdown** options
4. Please return your completed worksheet ASAP to **REDACTED**

We sincerely hope that we can count on your important involvement in the process and that you will accept our gratitude for your time and contribution to scientific collaboration.

Sincerely,

Prof. Jonna Mazet

Global Director, PREDICT USAID  
Professor of Disease Ecology and  
Epidemiology  
One Health Institute  
School of Veterinary Medicine  
University of California Davis  
1089 Veterinary Medicine Drive  
Davis, CA 95616, USA  
[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)

**REDACTED**

**REDACTED**

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 06/12/2017 9:33:48 PM (-07:00)  
**To:** "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "predict-coordinators@ucdavis.edu" <predict-coordinators@ucdavis.edu>  
**Cc:** "sja2127@cumc.columbia.edu" <sja2127@cumc.columbia.edu>; "predict@ucdavis.edu" <PREDICT@ucdavis.edu>; "Jonna Mazet" [REDACTED]  
**Subject:** RE: [predict-coordinators] Global corona paper published in Virus Evolution

Great paper!. We've uploaded a press release about it to our website:

<https://www.ecohealthalliance.org/2017/06/research-uncovers-huge-diversity-coronaviruses-worldwide>

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

Tel. +1 212-380-4473  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

**From:** [REDACTED] **On Behalf Of** Tracey Goldstein  
**Sent:** Monday, June 12, 2017 2:32 PM  
**To:** predict-coordinators@ucdavis.edu  
**Cc:** sja2127@cumc.columbia.edu; predict@ucdavis.edu; Jonna Mazet  
**Subject:** [predict-coordinators] Global corona paper published in Virus Evolution

Dear PREDICT team,

Please see attached, our collective paper "Global patterns in coronavirus diversity" was published in Virus Evolution today. Please forward to your teams. Congratulations to all on the great work you do on the PREDICT project.

Best, Tracey and Simon

--

Tracey Goldstein, PhD  
One Health Institute  
School of Veterinary Medicine  
University of California  
Davis, CA 95616  
Phone: **(530) 752-0412**  
Fax: **(530) 752-3318**  
E-mail: [tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)

**From:** [REDACTED]  
**Sent:** 06/12/2017 10:54:16 PM (-07:00)  
**To:** "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "predict-coordinators" <predict-coordinators@ucdavis.edu>  
**Cc:** "Simon Anthony" <sja2127@cumc.columbia.edu>; "predict@ucdavis.edu" <PREDICT@ucdavis.edu>; "Jonna Mazet" [REDACTED]  
**Subject:** Re: [predict-coordinators] Global corona paper published in Virus Evolution

Congratulations!

---

SHI Zhengli, Ph. D  
Senior Scientist & Professor  
Wuhan Institute of Virology, Chinese Academy of Sciences

[REDACTED]

**From:** [Tracey Goldstein](#)  
**Date:** 2017-06-13 02:31  
**To:** [predict-coordinators](#)  
**CC:** [Anthony, Simon J.](#); [predict@ucdavis.edu](#); [Jonna Mazet](#)  
**Subject:** [predict-coordinators] Global corona paper published in Virus Evolution

Dear PREDICT team,

Please see attached, our collective paper "Global patterns in coronavirus diversity" was published in Virus Evolution today. Please forward to your teams. Congratulations to all on the great work you do on the PREDICT project.

Best, Tracey and Simon

--  
Tracey Goldstein, PhD  
One Health Institute  
School of Veterinary Medicine  
University of California  
Davis, CA 95616  
Phone: (530) 752-0412



Fax: (530) 752-3318

E-mail: [tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)

**From:** predict-request@ucdavis.edu on behalf of "William B. Karesh" <karesh@ecohealthalliance.org>  
**Sent:** 07/06/2017 8:22:29 AM (-07:00)  
**To:** "David Wolking" <djwolking@ucdavis.edu>  
**Cc:** [REDACTED]; "Prof. Woutrina Smith" <wasmith@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Kevin Olival, PhD" <olival@ecohealthalliance.org>; "Leilani Francisco" <francisco@ecohealthalliance.org>; "Dr. Damien Joly" <djoly@metabiota.com>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "predict@ucdavis.edu" <predict@ucdavis.edu>; "Chris Johnson" <ckjohnson@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Elizabeth Leasure" <ealeasure@ucdavis.edu>; "Tammie O'Rourke" <torourke@metabiota.com>  
**Subject:** [predict] Re: AORs/TAs ACTION REQUIRED Fwd: REQUEST FOR MATERIALS: GHSA Toolkit

Hi David,

Yes, we should certainly share a few things that are ready right now and then can follow-up over the next couple of months with more. I see that Casey actually wanted them by June 28th, but what the heck.

- 1) One Health Lessons Learned
- 2) One Health Case Studies
- 3) OH and the Environment - (I think it's a good opportunity to push it through CDC network)

BK

**William B. Karesh, D.V.M**

*Executive Vice President for Health and Policy*

EcoHealth Alliance  
460 West 34th Street - 17th Floor  
New York, NY 10001 USA

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[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

On Jul 6, 2017, at 11:05 AM, David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)> wrote:

Hey there,

Any of your work seem to fit into this "toolkit" bin? CDC is requesting tools from partners for a GHSA repository. I'll plan to share our publicly available protocols and links (and anything else I can come up with) but these tools can be OH platform and policy oriented as well.

Billy and Catherine, some of the OH partnerships work you have been leading are probably a good fit here (maybe the OH case studies?) but not sure about others or if they are ready to share, perhaps JEE or World Bank stuff? Also, would we consider that OH and the environment briefing a "tool"?

Megan, anything from surveillance team you can think of fit this description?

Woutrina, any additional educational or training materials you can think of beyond e-book protocols that would be a good fit?

Tracey, should we consider including our viral family testing protocols?

Peter and Kevin, any M&A team "tools" that might meet the mark here? From the one-pager it looks like they don't want products, but materials or tools for implementation, education and training.

Leilani, I'll plan to include our behavioral risk guides but let me know if you can think of anything else to share.

Damien, no action required here I don't think, but including you in case you or Tammie have something I'm not thinking of.

Of course **it's a one day turnaround so I'll need to send in a package today COB :-)**

Any and all ideas are appreciated and thanks in advance!

David

----- Forwarded message -----

From: **Andrew Clements** <[aclements@usaid.gov](mailto:aclements@usaid.gov)>

Date: Thu, Jul 6, 2017 at 1:46 AM

Subject: Fwd: AORs/TAs ACTION REQUIRED Fwd: REQUEST FOR MATERIALS: GHSA Toolkit

To: Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>

Cc: Alisa Pereira <[apereira@usaid.gov](mailto:apereira@usaid.gov)>, Shana Gillette <[sgillette@usaid.gov](mailto:sgillette@usaid.gov)>

Please let me know if you have anything that fits the description. Thanks.

*Andrew P. Clements, Ph.D.*

*Senior Scientific Adviser*

*Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health*

*U.S. Agency for International Development*

*Mobile phone: [1-571-345-4253](tel:1-571-345-4253)*

*Email: [aclements@usaid.gov](mailto:aclements@usaid.gov)*

Begin forwarded message:

**From:** Ricardo Echalar <[rechalar@usaid.gov](mailto:rechalar@usaid.gov)>  
**Date:** July 5, 2017 at 10:03:46 PM GMT+2  
**To:** Andrew Clements <[aclements@usaid.gov](mailto:aclements@usaid.gov)>, Alisa Pereira <[apereira@usaid.gov](mailto:apereira@usaid.gov)>, PREDICTMGT <[predictmgt@usaid.gov](mailto:predictmgt@usaid.gov)>  
**Cc:** Dennis Carroll <[dcarroll@usaid.gov](mailto:dcarroll@usaid.gov)>, Richard Greene <[rgreene@usaid.gov](mailto:rgreene@usaid.gov)>  
**Subject:** Fwd: AORs/TAs ACTION REQUIRED Fwd: REQUEST FOR MATERIALS: GHSA Toolkit

Does PREDICT have anything?

--

Ricardo Echalar, MPH  
Senior Public Health Advisor  
Office of Infectious Diseases, [Emerging Threats Division](#)  
Bureau for Global Health  
U.S. Agency for International Development (USAID)  
1300 Pennsylvania Ave, NW, 3.6-53, 3rd Floor, RRB  
Washington, DC 20523  
(M) REDACTED | (W) [+1.202.712.4003](tel:+12027124003) | E-mail: [rechalar@usaid.gov](mailto:rechalar@usaid.gov)

----- Forwarded message -----

**From:** Ricardo Echalar <[rechalar@usaid.gov](mailto:rechalar@usaid.gov)>  
**Date:** Thu, Jun 29, 2017 at 1:15 PM  
**Subject:** AORs/TAs ACTION REQUIRED Fwd: REQUEST FOR MATERIALS: GHSA Toolkit  
**To:** [ghsdunitmaillistusaid@usaid.gov](mailto:ghsdunitmaillistusaid@usaid.gov)

Dear AORs/TAs,

Please review the request below and provide project specific resources/tools that we can include within the toolkit. We need your input by COB tomorrow.

Thank you,

Ricardo

--

Ricardo Echalar, MPH  
Senior Public Health Advisor  
Office of Infectious Diseases, [Emerging Threats Division](#)  
Bureau for Global Health  
U.S. Agency for International Development (USAID)  
1300 Pennsylvania Ave, NW, 3.6-53, 3rd Floor, RRB  
Washington, DC 20523  
(M) REDACTED | (W) [+1.202.712.4003](tel:+12027124003) | E-mail: [rechalar@usaid.gov](mailto:rechalar@usaid.gov)

----- Forwarded message -----

From: **Ricardo Echalar** <[rechalar@usaid.gov](mailto:rechalar@usaid.gov)>  
Date: Wed, Jun 21, 2017 at 2:41 PM  
Subject: Fwd: REQUEST FOR MATERIALS: GHSA Toolkit  
To: [ghsdunitmail@usaid.gov](mailto:ghsdunitmail@usaid.gov)

Hi, Team,

Please see request below. Let me know who can help me pull this info together.

Thanks,

Ricardo

--

Ricardo Echalar, MPH  
Senior Public Health Advisor  
Office of Infectious Diseases, [Emerging Threats Division](#)  
Bureau for Global Health  
U.S. Agency for International Development (USAID)  
1300 Pennsylvania Ave, NW, 3.6-53, 3rd Floor, RRB  
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(M) [REDACTED] | (W) [+1.202.712.4003](tel:+12027124003) | E-mail: [rechalar@usaid.gov](mailto:rechalar@usaid.gov)

----- Forwarded message -----

From: **Barton Behravesh, Casey (CDC/OID/NCEZID)** <[dlx9@cdc.gov](mailto:dlx9@cdc.gov)>  
Date: Wed, Jun 21, 2017 at 2:38 PM  
Subject: REQUEST FOR MATERIALS: GHSA Toolkit  
To: "Ricardo Echalar ([rechalar@usaid.gov](mailto:rechalar@usaid.gov))" <[rechalar@usaid.gov](mailto:rechalar@usaid.gov)>  
Cc: "Goryoka, Grace (CDC/OID/NCEZID)" <[lie0@cdc.gov](mailto:lie0@cdc.gov)>, "One Health (CDC)" <[onehealth@cdc.gov](mailto:onehealth@cdc.gov)>, Sarah Paige <[spaige@usaid.gov](mailto:spaige@usaid.gov)>

Dear Ricardo,

CDC is creating a repository of tools and resources across GHSA countries and Action Packages. This repository will be accessible to CDC field missions, CDC headquarters, and in-country partners to support program design, work plan development, monitoring and evaluation, and technical assistance. Please find the one-pager attached for more information.

Support for this repository has broadened following the call for tools and resources at the *Multicountry/Multisector Partner* plenary session at a recent CDC global health meeting (the DGHP Annual Meeting). We are reaching out to partners and countries for the tools and

resources they use to implement GHSA activities. I wanted to specifically reach out to our One Health partners for information.

**Understanding the importance of your subject matter expertise, we want to ensure we include tools and resources that CDC perceives as critical to GHSA. We invite you to share policies, standard operating procedures, M&E frameworks, and other tools and resources that you perceive as good examples for countries and partners to reference.**

If there are materials you would like us to share with this repository (i.e. overview of the NOHPs), please send it to [onehealth@cdc.gov](mailto:onehealth@cdc.gov) no later than June 28<sup>th</sup>. We will turn in all materials we received to the repository. Also, as future materials become available, we can add to the repository to share One Health information widely. I thought it would be useful to share the NOHP summary overview as a resource in this tool kit as a way to provide CDC country staff with key information on the NOHPs. You are welcome to share additional materials that you think would be useful. Eventually, we can add the One Health interagency talking points.

Many thanks,

**Casey**

Casey Barton Behravesh MS, DVM, DrPH, DACVPM

Captain, U.S. Public Health Service

Director, One Health Office

National Center for Emerging and Zoonotic Infectious Diseases

Centers for Disease Control and Prevention

e-mail: [CBartonBehravesh@cdc.gov](mailto:CBartonBehravesh@cdc.gov)

[www.cdc.gov/onehealth](http://www.cdc.gov/onehealth)

<Mail Attachment.html><image001.png><DGHP Annual Meeting\_GHSA Toolkit One  
Pager\_TWGs.pdf><Mail Attachment.html>

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 08/01/2017 1:55:44 PM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Cc:** "Brooke Watson" <watson@ecohealthalliance.org>; [REDACTED]  
**Subject:** Re: lab testing platform for GVP

[REDACTED] is trying to consolidate the discussion into one email for the core group with all of the options and relevant Q&A. I've discussed with Tracey and understand the Lab Implementation Team's perspective on what would work best from their perspective, oth results-wise and from a cost/capacity perspective. Maybe she &/or I should jpin your Lab Platform call to provide that perspective and likely come to a consensus on way forward? Hope you're having fun,  
Jonna

On Mon, Jul 31, 2017 at 3:55 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:

Sounds fine to me, but Dennis had apparently green lightiex Ian for \$200k to get started & has asked me to make it happen, even though I don't have it, after you guys finish billing us for Beijing. Not sure if that proposal for S went to or came from you or directly from Ian. So Dennis giving others, including me, other messages re funding pieces that haven't been discussed completely with the rest of us.

J

On Monday, July 31, 2017, Peter Daszak <daszak@ecohealthalliance.org> wrote:

Hi Jonna,

Brooke emailed me into the loop, but I didn't want to share the emails with the larger Core Group. Agree we have a costing/expectations issue and will aim to sort this out this summer. The process is important because we need the lab platform group to compromise.

I just emailed all asking to postpone discussion for a couple of weeks. I'll be back for the meeting on the 17<sup>th</sup> and we could all discuss then. This'll give me and Brooke an opportunity to schedule a lab platform WG meeting to sort it out at the end of August.

All – it would be good to circulate a cleaned up version of the email chain you send round so that the rest of the GVP Core Group can understand the costing issues.

Look forward to fixing this over the summer and running a cost-effective GVP start-up....

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor

New York, NY 10001

Tel. [+1 212-380-4473](tel:+12123804473)

[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*



**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 08/02/2017 10:37:50 AM (-07:00)  
**To:** "Aleksei Chmura" <chmura@ecohealthalliance.org>  
**Cc:** "Dr. Peter Daszak" <daszak@ecohealthalliance.org>; "Evelyn Luciano" <luciano@ecohealthalliance.org>; "Watson Brooke" <watson@ecohealthalliance.org>; "李泓莹" <li@ecohealthalliance.org>; "Molly Turner" <turner@ecohealthalliance.org>  
**Subject:** Re: GVP China Budget

Thanks,  
Looks like we'll have to be a bit creative. I'll talk with Peter about it when he gets back.  
Appreciate the work on this one,  
Jonna

On Wed, Aug 2, 2017 at 7:40 AM, Aleksei Chmura <[chmura@ecohealthalliance.org](mailto:chmura@ecohealthalliance.org)> wrote:  
Jonna,

I am glad you have this in time!

Cheers,

-Aleksei

**Aleksei Chmura**  
*Senior Coordinator of Operations*

EcoHealth Alliance  
460 West 34th Street – 17th floor  
New York, NY 10001

+1 212 380 4473 (direct)  
[REDACTED] (mobile)  
Aleksei MacDorian (Skype)

[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Visit our blog: [www.ecohealthalliance.org/blog](http://www.ecohealthalliance.org/blog)

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On Aug 1, 2017, at 19:55, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Thanks, Aleksei,  
This information will be useful for my call with Dennis tomorrow when discussing budgets, in general. I'm not super sure how you came up with the two lab budgets, though, as we haven't settled on a lab strategy that would dictate those costs. Maybe these are just placeholders?  
In any case, good to have something in the mix,  
Jonna

On Sat, Jul 29, 2017 at 10:12 PM, Aleksei Chmura <[chmura@ecohealthalliance.org](mailto:chmura@ecohealthalliance.org)> wrote:  
Dear Jonna,

Please see the attached excel file with the GVP China budget estimate. The total comes to \$589,793

We would only want to proceed with this, if it is clearly new money and not part of the currently budgeted GVP funding.

Many thanks!

-Aleksei

**Aleksei Chmura**  
*Senior Coordinator of Operations*

EcoHealth Alliance  
460 West 34th Street – 17th floor  
New York, NY 10001

+1.212.380.4473 (direct)  
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Aleksei MacDorian (Skype)

[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Visit our blog: [www.ecohealthalliance.org/blog](http://www.ecohealthalliance.org/blog)

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**From:** predict-request@ucdavis.edu on behalf of "Kevin Olival, PhD" <olival@ecohealthalliance.org>  
**Sent:** 08/04/2017 7:50:34 AM (-07:00)  
**To:** "predict@ucdavis.edu" <predict@ucdavis.edu>; "William B. Karesh" <karesh@ecohealthalliance.org>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Evelyn Luciano" <luciano@ecohealthalliance.org>  
**Cc:** "Alice Latinne" <latinne@ecohealthalliance.org>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>; "Leilani Francisco" <francisco@ecohealthalliance.org>  
**Subject:** [predict] Fwd: EPT2 COP Meeting + First "Big Picture working group meeting"  
**Attachments:** Agenda.docx, ATT00001.htm

FYI. JEE will be November 20-24, 2017 for Indonesia. Also see email below for insight into Indonesia country-level EPT planning.

A couple of weeks ago I was in Jakarta for 3 days of EPT planning and gov't level meetings. It was a very productive few days and was valuable to get GOI buy-in and connect and plan with all the other EPT partners, including P&R who are working directly with the Coordination Ministry for Human Development and Cultural Affairs (Kemenko PMK) the ministry responsible for coordinating the National Strategy Plan for Zoonosis. They are highlighting our PREDICT activities as an example of successful zoonotic surveillance and preparedness.

Cheers,  
Kevin

**Kevin J. Olival, PhD**

*Associate Vice President for Research*

EcoHealth Alliance  
460 West 34th Street – 17th floor  
New York, NY 10001

1.212.380.4478 (direct)

**REDACTED** (mobile)

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Begin forwarded message:

**From:** Amelia Ginting <[aginting@usaid.gov](mailto:aginting@usaid.gov)>  
**Subject:** EPT2 COP Meeting + First "Big Picture working group meeting"

Date: August 1, 2017 at 3:12:45 AM EDT

To: David McIver <[dmciver@metabiota.com](mailto:dmciver@metabiota.com)>, Samuel Josafat Olam

REDACTED Ni Made Hermiyanti REDACTED  
Kevin Olival <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)>, REDACTED "Tzipori, Saul"  
<[Saul.Tzipori@tufts.edu](mailto:Saul.Tzipori@tufts.edu)>, "Katey Pelican" <[pelicank@umn.edu](mailto:pelicank@umn.edu)>, Kaylee Myhre  
Errecaborde <[myhre044@umn.edu](mailto:myhre044@umn.edu)>, Damien Joly <[djoly@metabiota.com](mailto:djoly@metabiota.com)>, Wiku  
Adisasmito REDACTED, Diah Iskandriati REDACTED "Frilasita  
Aisyah Yudhaputri" REDACTED "Nutter, Felicia B" <[Felicia.Nutter@tufts.edu](mailto:Felicia.Nutter@tufts.edu)>,  
Dodi Safari <REDACTED>, <[Karesh@ecohealthalliance.org](mailto:Karesh@ecohealthalliance.org)>, "Fenwick, Stanley  
G." <[Stanley.Fenwick@tufts.edu](mailto:Stanley.Fenwick@tufts.edu)>, "McGrane, James (FAOID)"  
REDACTED, Amalya <[amalya@state.gov](mailto:amalya@state.gov)>, YING M  
REDACTED, catharina pram REDACTED John Weaver  
"Kamah, Wahyuni" <[kamahw@state.gov](mailto:kamahw@state.gov)>, Luuk Schoonman  
REDACTED elly Sawitri REDACTED "Joko Pamungkas"  
REDACTED "Nining Hartaningsih" REDACTED  
REDACTED Dr Bimo REDACTED Bimo REDACTED  
"Budiman, Nikolasia" <REDACTED>, "Mathur, Sarah L"  
<[MathurSL@state.gov](mailto:MathurSL@state.gov)>, solomon\_benigno REDACTED "Pasakorn  
Akarasewi REDACTED REDACTED  
"Wulandari, Dr. Endang" REDACTED <[fev7@cdc.gov](mailto:fev7@cdc.gov)>, Carrie Coslin  
<[cosl0001@umn.edu](mailto:cosl0001@umn.edu)>, "Bradford, Kristina" <[Kristina.Bradford@tufts.edu](mailto:Kristina.Bradford@tufts.edu)>, "Murniati, Sri  
X" <[MurniatiSX@state.gov](mailto:MurniatiSX@state.gov)>, "Kristanti, Margaretha (FAOID)"  
REDACTED, Ong-orn Prasarnphanich <[prasa080@umn.edu](mailto:prasa080@umn.edu)>, jusuf  
kalengkongan REDACTED, Agus Suwandono REDACTED  
Wiku Adisasmito <[wiku.adisasmito@indohun.org](mailto:wiku.adisasmito@indohun.org)>, "Carr, Dara"  
<[Dara.Carr@thepalladiumgroup.com](mailto:Dara.Carr@thepalladiumgroup.com)>, Karin Hamilton <[hamil362@umn.edu](mailto:hamil362@umn.edu)>, EHA Alice  
Latinne <[latinne@ecohealthalliance.org](mailto:latinne@ecohealthalliance.org)>, "Susan Scribner" <[susan\\_scribner@dai.com](mailto:susan_scribner@dai.com)>,  
"Mark Rasmuson" REDACTED, Sara  
Lehman REDACTED, "Asfri Winaldi Rangkuti" REDACTED  
REDACTED, adrian coghill <REDACTED>, Nurul Maretia  
Rahmayanti REDACTED, "Praptining, Catharina Yekti (CDC/OID/NCIRD)"  
<[xel3@cdc.gov](mailto:xel3@cdc.gov)>, "RIM, Kwang" <REDACTED>, Dwi HANDAYANI  
REDACTED, Melanie Ogle REDACTED  
Cc: "Hartajaya, Anggi" <[hartajayaa@state.gov](mailto:hartajayaa@state.gov)>, "Purnasari, Vina (FAOID)"  
<REDACTED>, "Nasution, Astuti (FAOID)" REDACTED  
OHWMGT <[OHWMGT@usaid.gov](mailto:OHWMGT@usaid.gov)>, P&RMGT <[PRMGT@usaid.gov](mailto:PRMGT@usaid.gov)>, PREDICTMGT  
<[PREDICTMGT@usaid.gov](mailto:PREDICTMGT@usaid.gov)>, FAOMGT <[FAOMGT@usaid.gov](mailto:FAOMGT@usaid.gov)>,  
<[WHOMGT@usaid.gov](mailto:WHOMGT@usaid.gov)>, Timothy Meinke <[tmeinke@usaid.gov](mailto:tmeinke@usaid.gov)>, "Bambang Heryanto  
(Jakarta/Health)" <[bheryanto@usaid.gov](mailto:bheryanto@usaid.gov)>, Jonathan Ross <[jross@usaid.gov](mailto:jross@usaid.gov)>

**\*\* Please note request below for 1-2 persons from EACH project (FAO, WHO, P2, OHW, P&R – others are welcome) to join from 11:00-Noon to discuss the formation, staffing and TOR of a “higher-level-perspective working group” \*\***

Hello All –

First, allow us to thank everyone for all your great work over this past year and especially for the July annual meetings. We hope that you found them as informative and productive as we did and we've been pleased to hear positive feedback from our GOI colleagues.

The next EPT-2 Indonesia monthly meeting will be on Wednesday morning, August 9, and so please mark your calendars. (A draft agenda is attached and so pls let us know if you have any suggestions/additions.)

**REQUEST:** Based on the July 17-19 discussions, please also note that we'll hold the first-ever "30,000-foot Working Group" meeting (needs a name!) immediately afterwards, from 11:00-12:00. The details and Terms of Reference will be discussed, developed and decided by this group but the basics are:

1. Work together to address challenges, and identify/advance higher level shared EPT-2 program goals that are needed to achieve and sustain project level goals in Indonesia (i.e., legislative issues, EID prioritization, institutionalization/sustainability and budget issues, Home Affairs role and decentralization, linking lab and surveillance networks, data transparency and reporting, support for GHSA and other regional/global initiatives, etc)
2. Identify policy and advocacy/communications priorities, such as inclusion of relevant zoonosis and EID language in plans and legislation (i.e., RPJMN 2020-2025), risk-mapping to inform decision-making, fostering GOI national and local budget support, role of private sector, JEEs, etc;
3. Review and develop EPT-2 impact materials to inform future priorities and directions;
4. Representatives from each project gather routinely (at least once per month) to discuss the above and identify key activities, timelines and the way forward.

This first meeting will bolster this process of taking the breadth of work undertaken and underway to assure that the higher level policy and implementation environment can sustain and enable this work to continue. Bottom line: while there is always room for improvement, what is needed to ensure that Indonesia can prevent, detect and respond to EIDs using a one health approach regardless of our future support?

The "Big Picture Team" will be asked to begin developing a roadmap for EPT-2 as a whole which will identify key priority issues, activities, lead & support focal points, timelines, etc. Given the importance of this collective effort to assure both project and program level success, Partners are asked to identify staff (who can rotate) and commit time to this endeavor. The targets are expected to be strategic and the time burden limited. However, given the importance of this effort, we are open to reducing/redirecting some of the more focused technical work to allow input into this higher level engagement and welcome your thoughts.

Please submit your update activities and calendar to Lia at the latest on Aug 8, 12:00 PM.

With thanks,

- USAID Indonesia

**- Amelia Ginting -**

**USAID/Health Office**

REDACTED [aginting@usaid.gov](mailto:aginting@usaid.gov)

REDACTED

# EPT-2 Partners' Meeting

Wednesday, August 9, 2017 – 8:30-11:00 a.m.  
FAO Office, Menara Thamrin, 7th Floor, Papua Room  
Jl. M.H. Thamrin Kav 3, FAO Tel: 021-390 5448

*Call-in information:* USA Toll-free number [REDACTED] or  
USA Caller paid/International toll [REDACTED], Access code is [REDACTED]  
Local call-in number: [REDACTED] dial 0 for operator and ask to connect to the EPT conference line

## AGENDA:

[REDACTED]

1. July 17-19 Meetings Follow-up
  - Summary and Next Steps
  - Meeting materials and dissemination
  - “Big Picture Working Group”
2. Country Implementation Plan (CIP)
3. Highlights of key activities and upcoming events (5-10 minutes ea):
  - OHW
  - P&R
  - WHO
  - FAO
  - Predict 2
  - AIP-EID
  - CDC
  - ESTH/BEP
  - (IFRC/PMI)
  - Other business?
    - Readout from GHSA Steering Group Seoul Meeting July 27-28
    - Preparations for ZDAP Meeting (participants, role of Indonesian delegation in each session)
    - Preparations for JEE, November 20-24, 2017 (supporting documents, info needs, etc)
4. Date for next month's meeting: September \_\_\_\_ ?

## Upcoming Meetings, Conferences and Workshops:

- August 29-30: ZDAP mtg in Danang (Furama Hotel) (w/Aug 28 dinner)
- August 31 (tentative): internal FAO-USAID meeting for H7N9 up-date.

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 09/29/2017 8:05:29 AM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>; "Aleksei Chmura" <chmura@ecohealthalliance.org>; "Alison Andre" <andre@ecohealthalliance.org>; "Kevin J. Olival" <olival@ecohealthalliance.org>  
**Subject:** Fwd: Possible for you to share a paper in press?

Hi,  
Is it possible to comply with this request from the EPT evaluation team? If so, please copy me or send to me to forward on to them.  
Thank you,  
Jonna

----- Forwarded message -----

**From:** Marguerite Pappaioanou [REDACTED]  
**Date:** Fri, Sep 29, 2017 at 7:54 AM  
**Subject:** Possible for you to share a paper in press?  
**To:** Jonna Mazet <jkmazet@ucdavis.edu>  
**Cc:** Marguerite Pappaioanou [REDACTED]

Hi Jonna,

I hope you are doing well and over your cold! I was very sorry to miss you when I was in Davis. I am writing with a question concerning the EPT2 evaluation--

Our team heard from Andrew Clements that there is a new, updated, improved "hot spot" paper from Predict that has been accepted for publication and is "in press". If so, would there be anyway we could get a copy, so we could refer to it in our evaluation? If there is a citation, that would be great-- but we would also really benefit from reading the paper, so we can describe and reference the work, in our report to USAID.

We had asked Andrew if it would be possible to get a copy-- but he has not replied... so that is why I thought to reach out to you directly.

Of course if you are able to share it, it would be kept totally confidential and not be distributed any further-- we would like to describe the work and findings very generally, and include a citation if there is one-- even citing it as being "in press." It sounds like a very important paper reflecting important work of the Program that should definitely be included in the evaluation.

Thanks for considering the request-- please let me know what you think.

Marguerite

Phone: [REDACTED]  
Email: [REDACTED]

**From:** REDACTED  
**Sent:** 01/18/2018 11:19:40 AM (-08:00)  
**To:** REDACTED  
**Cc:** REDACTED "Katherine Leasure" <kaleasure@ucdavis.edu>; "Brooke Watson" <watson@ecohealthalliance.org>; "Fu Gao" <REDACTED>; "Hongying Li" <li@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Subject:** GVP PMAC invitation  
**Attachments:** PMAC2018\_invitation letter\_Wu3.pdf

Dear Dr. Linhuan Wu,

On behalf of the Global Virome Project (GVP) core group, I am delighted to send an invitation letter to the GVP side-meeting in Bangkok later this month. Please see the attached document for details.

We look forward to hearing from you.

Best wishes,

REDACTED

REDACTED

Fellow  
One Health Institute  
School of Veterinary Medicine  
University of California, Davis





January 18, 2017

Dr. Linhuan Wu  
via email

**REDACTED**

**Re: The Global Virome Project: the Beginning of the End of the Pandemic Era  
Meeting at the Prince Mahidol Award Conference 2018**

Dear Dr. Linhuan Wu,

On behalf of Dr. Dennis Carroll and the Global Virome Project (GVP) core group, we would like to invite you to two side meetings for the GVP which will take place during the Prince Mahidol Award Conference 2018 (PMAC 2018) in Bangkok, Thailand. As you likely are aware, the GVP is a global partnership to detect the majority of our planet's unknown viral threats to human health. We have recently been working with partners from around the world to develop this innovative global initiative (<http://www.globalviromeproject.org/>).

We are excited to convene with partners on **Monday January 29, 2018 in Bangkok, Thailand** and sincerely hope that you can join us. You are invited to both the morning session, which will be a closed session for GVP partners, and the afternoon session, which will be an open session for PMAC attendees at 14:00-17:30. General information, such as the schedule and location of the conference can be found here (<http://www.pmaconference.mahidol.ac.th/>).

To confirm your participation, please contact Eri Togami ([etogami@ucdavis.edu](mailto:etogami@ucdavis.edu)) at your earliest convenience. Further information and a detailed agenda will be provided closer to the meeting date. We will be in contact with you if you are requested to present at the meeting. In the meantime, please feel free to review our new GVP resources online (<http://www.globalviromeproject.org/resources/>). We look forward to seeing you there.

Sincerely,

**REDACTED**

**REDACTED**

On behalf of the GVP core group

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 01/28/2018 9:12:20 PM (-08:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Cc:** "Aleksei Chmura" <chmura@ecohealthalliance.org>  
**Subject:** Re: URGENT: RE. PMAC

Thanks, Jonna, and good to speak with you today.

One thing I just remembered is that I asked Dan for a meeting Wed afternoon. There's no way I can do 3-5am my time so I've asked him for alternatives ... or do you want to stick to that time anyway. I don't want to burden you with Dan's questioning without bring there myself.

Let me know ASAP and I'll set it up either way.

Good GVP meeting right now and good luck with the open session.

Cheers,

Peter

Peter Daszak  
President

EcoHealth Alliance  
460 West 34th Street – 17th Floor  
New York, NY 10001

Tel. +1 212-380-4473  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

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**From:** [REDACTED] > on behalf of Jonna Mazet <jkmazet@ucdavis.edu>  
**Sent:** Sunday, January 28, 2018 1:42 PM  
**To:** Peter Daszak  
**Subject:** Re: URGENT: RE. PMAC

Feel better,  
J

On Sun, Jan 28, 2018 at 9:32 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:  
Dear Jonna, Eddy, and [REDACTED]

Unfortunately, I'm sorry to tell you this, but I've had a [REDACTED] [REDACTED] I was planning to try and still go to PMAC, but I was simply [REDACTED] so I had to cancel. That said, I will be calling-in by Skype, GoTo Meeting, or phone to do the whole of our GVP closed session and take part of all of the activities as much as possible.

I already spoke with Dennis this (your) morning. Brooke and Hongying are already aware of this and are there to help organize things. Jon, Kevin, Leilani, Carlos, Yasha, and Catherine are at PMAC from EcoHealth Alliance and will come to all activities to help represent various aspects of our GVP work, actively engage, and keep up the momentum.

Cheers,

Peter

Peter Daszak  
President

EcoHealth Alliance  
[460 West 34th Street – 17th Floor](#)  
[New York, NY 10001](#)

Tel. [+1 212-380-4473](tel:+12123804473)  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 02/13/2018 8:20:46 AM (-08:00)  
**To:** "Shah, Cecilia" <cshah@nas.edu>; "Beth Cameron" <cameron@nti.org>; "Dean.Jamison@ucsf.edu" <Dean.Jamison@ucsf.edu>; "djamison@uw.edu" <djamison@uw.edu>; "Espinal, Dr. Marcos (WDC)" <espinalm@paho.org>; "Jennifer Gardy" <Jennifer.gardy@bccdc.ca>; "jkmazet@ucdavis.edu" <jkmazet@ucdavis.edu>; "Joshua Michaud" <JoshuaM@kff.org>; "mchawla@worldbank.org" <mchawla@worldbank.org>; "Peter Sands" [REDACTED]; "Taylor, Jami [GCSOUS]" <jtaylo19@its.jnj.com>; "tgevans@worldbank.org" <tgevans@worldbank.org>; "Thomas Inglesby" <tinglesby@jhu.edu>; "Timothy Burgess" <timothy.burgess@usuhs.edu>  
**Cc:** "Ogawa, V. Ayano" <VOgawa@nas.edu>; "Tran, Thu Anh" <TTran@nas.edu>  
**Subject:** Potential speaker on the Animal disease side

The OIE manages WTO-related countries' ability to trade based on disease status.

We know the DG (below) and I can ask her or a suitable person from OIE to speak if that fits...

<http://www.oie.int/for-the-media/press-releases/detail/article/la-nouvelle-directrice-generale-de-loie-a-presente-ses-voeux-a-la-presse-pour-lannee-201/>

Cheers,

Peter

**Peter Daszak**

*President*

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---

**From:** Shah, Cecilia [mailto:cshah@nas.edu]  
**Sent:** Monday, February 12, 2018 10:33 AM  
**To:** Beth Cameron; Dean.Jamison@ucsf.edu; djamison@uw.edu; Espinal, Dr. Marcos (WDC); Jennifer Gardy; jkmazet@ucdavis.edu; 'Joshua Michaud'; mchawla@worldbank.org; Peter Daszak; 'Peter Sands'; Taylor, Jami [GCSOUS]; tgevans@worldbank.org; Thomas Inglesby; Timothy Burgess  
**Cc:** Ogawa, V. Ayano; Tran, Thu Anh  
**Subject:** FIRST PLANNING CALL - Forum on Microbial Threats Workshop  
**Importance:** High

Dear Planning Committee Members,

We are looking forward to our first planning call tomorrow **Tuesday, February 13 from 10:00 – 11:30 AM (ET)**. In preparation for the call, please see attached 4 documents:

1. First Call Agenda
2. Planning Committee Roster and Bios
3. Draft Workshop Agenda
4. Resources List

As you can see in the agenda for the call, after the conflict of interest discussion (which is mandatory to confirm your appointments to this planning committee), we will discuss the workshop objectives, themes, and proposed sessions. We have prepared a **first draft workshop agenda** that we would like to use as a starting point for the discussion. **Please note that throughout this document, we offer suggestions for presentations and speakers in bubble comments.** We would very much appreciate if you can take a look at this first draft before the call.

The dial-in information is in the calendar invitation Anh sent and also below:

Toll Free Number: **REDACTED**  
International Number: **REDACTED**  
Participant Passcode: **REDACTED**

Looking forward to talking to you tomorrow.

Best,

**Cecilia Mundaca Shah, MD, DrPH**

Director, Forum on Microbial Threats

Board on Global Health

Health and Medicine Division | Find us at [nationalacademies.org/HMD](https://nationalacademies.org/HMD)

The National Academies of Sciences, Engineering, and Medicine

500 Fifth Street, NW

Washington, DC 20001

Phone: [202 334 2622](tel:2023342622)

E-mail: [cshah@nas.edu](mailto:cshah@nas.edu)

---

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

---

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/17/2018 9:10:30 AM (-07:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Brooke Watson" <watson@ecohealthalliance.org>  
**Cc:** [REDACTED] "Molly Turner" <turner@ecohealthalliance.org>; "Evelyn Luciano" <luciano@ecohealthalliance.org>  
**Subject:** RE: In Person GVP Mtg

No problem – we'll make sure we sort this out – cc'ing molly and evelyn also.

Cheers,

Peter

**Peter Daszak**

*President*

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460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

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[www.ecohealthalliance.org](http://www.ecohealthalliance.org)  
[@PeterDaszak](mailto:@PeterDaszak)  
[@EcoHealthNYC](https://twitter.com/EcoHealthNYC)

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**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Friday, March 16, 2018 7:08 PM  
**To:** Peter Daszak; Brooke Watson  
**Cc:** Eri Togami  
**Subject:** Fwd: In Person GVP Mtg

I had a quick chat with Cara today.

You probably have already considered this nuance and are operating accordingly. Just in case, she asked us to be careful to not be charging travel or personnel time to Predict/GVP funds when discussing the 501(c)3. So if you are traveling out for Predict meeting, it may be the best way to avoid any concerns around what we discuss on an extra day and how we allocating funds.

I know Peter and I have salaries on other funds, so I think we are in the clear for discussions, but we should be careful with Brooke & Eri participating unless we have them partly budgeted on unrestricted funds.

Have a nice weekend,

Jonna

----- Forwarded message -----

From: **Jonna Mazet** <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
Date: Fri, Mar 16, 2018 at 4:02 PM

Subject: Re: In Person GVP Mtg

To: Cara Chrisman <[cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)>

Cc: Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, Nathan Wolfe <[nwolfe@metabiota.com](mailto:nwolfe@metabiota.com)>, Eddy Rubin <[erubin@metabiota.com](mailto:erubin@metabiota.com)>, Brooke Watson <[watson@ecohealthalliance.org](mailto:watson@ecohealthalliance.org)>, REDACTED  
REDACTED, Dennis Carroll <[dcarroll@usaid.gov](mailto:dcarroll@usaid.gov)>, Cassandra Louis Duthil <[clouisduthil@usaid.gov](mailto:clouisduthil@usaid.gov)>, Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>, Brooke Genovese <[bgenovese@ucdavis.edu](mailto:bgenovese@ucdavis.edu)>

Hi Cara,

Not sure if it will work for others, but Peter and Eddy will be joining me for a Predict Semi-annual consortium meeting in Napa on April 10 & 11.

We'll see what Peter says, but we could add April 9 to their potential travel schedules and meet in Napa or Davis on the 9th. I can't do the 12th, I'm afraid, as I have a One Health Institute Annual Meeting that day.

Alternatively, I may be able to change a ticket around and be in New York on March 26 after 9:30 am. That option is more risky, as my mom is having surgery next week, and if that doesn't go well, I'll have to cancel my New York travel.

March 29th or April 3 in Davis are options.

Let me know & have a nice weekend,  
Jonna

On Fri, Mar 16, 2018 at 12:35 PM, Cara Chrisman <[cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)> wrote:  
Hi Team,

Following a series of conversations over the past few days and building on the work which came out of Bangkok and the BCG project, we would like to propose an in-person GVP meeting.

The plan for the meeting would be to walk through where we are, any issues, plot out how to navigate the way forward, and assess the 100 day plan. We envision this to be best accomplished in person and to take around a full day.

We realize everyone is quite busy, but given the momentum and other questions which have arisen recently, we would like to propose that we have the meeting in the next 3 weeks (if possible). Perhaps to be held in UC Davis, if that makes the most sense for everyone's schedules.

We would like to request that your schedulers work with Cassandra to identify a time and location for the meeting.

Thanks in advance,  
Cara

Cara J. Chrisman, PhD  
Senior Infectious Diseases Technical Advisor  
Emerging Threats Division  
Office of Infectious Disease  
Bureau for Global Health  
U.S. Agency for International Development (USAID)

Desk: [\(571\) 551-7413](tel:(571)551-7413)

Cell: **REDACTED**

E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)



**From:** "Eddy Rubin" <erubin@metabiota.com>  
**Sent:** 03/17/2018 4:13:25 PM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Cc:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Cara Chrisman" <cchrisman@usaid.gov>; "Nathan Wolfe" <nwolfe@metabiota.com>; "Brooke Watson" <watson@ecohealthalliance.org>; REDACTED  
REDACTED; "Dennis Carroll" <dcarroll@usaid.gov>; "Cassandra Louis Duthil" <clouisduthil@usaid.gov>; "Alison Andre" <andre@ecohealthalliance.org>; "Brooke Genovese" <bgenovese@ucdavis.edu>  
**Subject:** Re: In Person GVP Mtg

I could do April 9th and most days before but from April 12-May 1st I am on extensive travel.on extensive travel  
Eddy

On Sat, Mar 17, 2018 at 8:58 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

BTW – if Dennis can't do April 9<sup>th</sup>, I do have dates after that for East coast or West coast...

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

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[@EcoHealthNYC](https://twitter.com/EcoHealthNYC)

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---

**From:** Peter Daszak

**Sent:** Saturday, March 17, 2018 11:53 AM

**To:** 'Jonna Mazet'; Cara Chrisman

**Cc:** Nathan Wolfe; Eddy Rubin; Brooke Watson; **REDACTED** Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese; Alison Andre

**Subject:** RE: In Person GVP Mtg

I could do the 9<sup>th</sup> April in Davis, although I have a Ph.D viva to do by phone from 9-11am PST that day, so maybe we do from 11am onwards?

The other dates are harder for me, and March 26<sup>th</sup> and April 3<sup>rd</sup> are definitely out...

Cheers,

Peter

**Peter Daszak**

*President*

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[@PeterDaszak](#)

[@EcoHealthNYC](#)

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**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Friday, March 16, 2018 7:02 PM  
**To:** Cara Chrisman  
**Cc:** Peter Daszak; Nathan Wolfe; Eddy Rubin; Brooke Watson; [REDACTED] Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese  
**Subject:** Re: In Person GVP Mtg

Hi Cara,

Not sure if it will work for others, but Peter and Eddy will be joining me for a Predict Semi-annual consortium meeting in Napa on April 10 & 11.

We'll see what Peter says, but we could add April 9 to their potential travel schedules and meet in Napa or Davis on the 9th. I can't do the 12th, I'm afraid, as I have a One Health Institute Annual Meeting that day.

Alternatively, I may be able to change a ticket around and be in New York on March 26 after 9:30 am. That option is more risky, as my mom is having surgery next week, and if that doesn't go well, I'll have to cancel my New York travel.

March 29th or April 3 in Davis are options.

Let me know & have a nice weekend,

Jonna

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We would like to request that your schedulers work with Cassandra to identify a time and location for the meeting.

Thanks in advance,

Cara

Cara J. Chrisman, PhD  
Senior Infectious Diseases Technical Advisor  
Emerging Threats Division  
Office of Infectious Disease  
Bureau for Global Health  
U.S. Agency for International Development (USAID)

Desk: [\(571\) 551-7413](tel:(571)551-7413)

Cell: **REDACTED**

E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)

**From:** "Nathan Wolfe" <nwolfe@metabiota.com>  
**Sent:** 03/18/2018 9:57:34 AM (-07:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Cc:** "Cara Chrisman" <cchrisman@usaid.gov>; "Dennis Carroll" <dcarroll@usaid.gov>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Eddy Rubin" <erubin@metabiota.com>; "Brooke Watson" <watson@ecohealthalliance.org>; [REDACTED]; "Cassandra Louis Duthil" <clouisduthil@usaid.gov>; "Alison Andre" <andre@ecohealthalliance.org>; "Brooke Genovese" <bgenovese@ucdavis.edu>  
**Subject:** Re: In Person GVP Mtg

April 9th works for me!

On Sat, Mar 17, 2018 at 5:21 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:

You may have more direct flight options to SFO (convenience there), but there is at least one direct/day to SMF, which is a bit easier traffic-wise for Davis and Napa.

Up to you,  
Jonna

On Sat, Mar 17, 2018 at 3:17 PM, Cara Chrisman <cchrisman@usaid.gov> wrote:

Sounds good, thanks for the quick responses!

Sent from my iPhone

On Mar 17, 2018, at 5:26 PM, Dennis Carroll <dcarroll@usaid.gov> wrote:

All, thanks for the quick response. We need to huddle. Lots of machinations and great opportunities. I believe I can pull off the 9th. Cara, can you work with Cassandra to make it happen? Day flight on the 8th - Dulles to SF

THANKS

d

Dr Dennis Carroll  
Director, Emerging Threats Program  
U.S. Agency for International Development  
Office: (202) 712-5009  
Mobile: [REDACTED]

On Mar 17, 2018, at 11:58 AM, Peter Daszak <daszak@ecohealthalliance.org> wrote:

BTW – if Dennis can't do April 9<sup>th</sup>, I do have dates after that for East coast or West coast...

Cheers,

Peter

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[@PeterDaszak](#)

[@EcoHealthNYC](#)

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**Sent:** Saturday, March 17, 2018 11:53 AM

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**Cc:** Nathan Wolfe; Eddy Rubin; Brooke Watson; **REDACTED**; Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese; Alison Andre

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**From:** [REDACTED] ] On Behalf Of Jonna Mazet  
**Sent:** Friday, March 16, 2018 7:02 PM  
**To:** Cara Chrisman  
**Cc:** Peter Daszak; Nathan Wolfe; Eddy Rubin; Brooke Watson; [REDACTED] Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese  
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Jonna

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Thanks in advance,

Cara

Cara J. Chrisman, PhD  
Senior Infectious Diseases Technical Advisor  
Emerging Threats Division  
Office of Infectious Disease  
Bureau for Global Health  
U.S. Agency for International Development (USAID)

Desk: [\(571\) 551-7413](tel:5715517413)

Cell: **REDACTED**

E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 04/25/2018 11:07:01 AM (-07:00)  
**To:** "Lipkin, Ian W." <wil2001@cumc.columbia.edu>  
**Cc:** "djwolking@ucdavis.edu" <djwolking@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Final Decision made for NCOMMS-14-17103C

Congrats, Ian & thanks very much for considering including Predict. We'd love that!  
If there is time to include Predict in the acknowledgements, that would be optimal.  
David is going to send three versions of acknowledgement wording according to different levels of Predict involvement, as Peter mentioned.  
Great work & thanks,  
Jonna

On Mon, Apr 23, 2018 at 7:22 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

Looks like another v. interesting paper Ian.

We have some language we use for papers covering work that is allied to PREDICT – i.e. builds on the expertise, collaborations, sampling etc. from PREDICT. Jonna's been out on vacation so can give you the full details when she's back.

Cheers,

Peter

**Peter Daszak**

*President*

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---

**From:** Lipkin, Ian W. [mailto:[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)]  
**Sent:** Wednesday, April 18, 2018 2:21 PM  
**To:** Peter Daszak; Mazet Jonna  
**Subject:** Fwd: Final Decision made for NCOMMS-14-17103C

Dear Peter and Jonna-

FYI. It's not viral but we would like to include it as a PREDICT product. OK?

ian

Begin forwarded message:

**From:** <[naturecommunications@nature.com](mailto:naturecommunications@nature.com)>  
**Subject:** Final Decision made for NCOMMS-14-17103C  
**Date:** April 9, 2018 at 11:48:12 AM EDT  
**To:** <[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)>  
**Reply-To:** <[naturecommunications@nature.com](mailto:naturecommunications@nature.com)>

Dear Dr Lipkin,

We are delighted to accept for publication the manuscript "Gut Microbiomes of Wild Great Apes Fluctuate Seasonally in Response to Diet" by Allison L. Hicks, Kerry Jo Lee, Mara Couto-Rodriguez, Juber Patel, Rohini Sinha, Cheng Guo, Sarah Olson, Anton Seimon, Tracie Seimon, Alain U. Ondzie, William Karesh, Patricia Reed, Kenneth N. Cameron, W. Ian Lipkin, and Brent L. Williams [Paper #NCOMMS-14-17103C], on which you were a Contributing Author.

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As soon as your article is published, you can generate your shareable link by entering the DOI of your article here: <http://authors.springernature.com/share>

Sincerely,

Manuscript Administration  
Nature Communications

**REDACTED**

E-mail: [naturecommunications@nature.com](mailto:naturecommunications@nature.com)

\*\* Visit the Springer Nature Editorial and Publishing website at [www.springernature.com/editorial-and-publishing-jobs](http://www.springernature.com/editorial-and-publishing-jobs) for more information about our career opportunities. If you have any questions please click [here](#)\*\*

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**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 05/15/2018 1:11:56 PM (-07:00)  
**To:** [REDACTED] "Ariful Islam" <arif@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Hongying Li" <li@ecohealthalliance.org>; "ckjohnson@ucdavis.edu" <ckjohnson@ucdavis.edu>; "Emily Hagan" <hagan@ecohealthalliance.org>; "Thomas Hughes" <tom.hughes@ecohealthalliance.org>; "Allison White" <white@ecohealthalliance.org>; "Kevin Olival" <olival@ecohealthalliance.org>; "Alice Latinne" <latinne@ecohealthalliance.org>; [REDACTED]  
"tgoldstein@ucdavis.edu" <tgoldstein@ucdavis.edu>; "dmciver@metabiota.com" <dmciver@metabiota.com>; "ssilithammavong@metabiota.com" <ssilithammavong@metabiota.com>; [REDACTED]  
[REDACTED] [REDACTED]  
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**Subject:** RE: PREDICT Emerging Disease Insights - 2 pagers  
**Attachments:** Améliorer l'échantillonnage et la découverte viraux.pdf, Identifier le prochain Zika.pdf, Un cas économique pour le Projet Global Virome.pdf  
**Importance:** High

Dear All,

We've had the last three PREDICT Emerging Disease Insights translated into French (attached).

Please circulate to your Francophone colleagues!!

Cheers,

Peter

**Peter Daszak**  
President

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*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

---

**From:** Peter Daszak

**Sent:** Thursday, April 19, 2018 1:20 PM

**To:** REDACTED; Ariful Islam; Jon Epstein; 'Hongying Li'; 'ckjohnson@ucdavis.edu'; Emily Hagan; 'Thomas Hughes'; 'Allison White (white@ecohealthalliance.org)'; 'olival@ecohealthalliance.org'; 'Alice Latinne (latinne@ecohealthalliance.org)'; REDACTED; 'tgoldstein@ucdavis.edu'; 'dmciver@metabiota.com'; 'ssilithammavong@metabiota.com'; REDACTED; REDACTED; REDACTED; 'Ava Sullivan (sullivan@ecohealthalliance.org)'; REDACTED; 'Debapriyo Chakraborty'; REDACTED; 'murrays@si.edu'; 'valituttoM@si.edu'; Patrick Dawson; REDACTED; 'ghazi@human-link.org'; William B. Karesh; REDACTED; 'jayukekbong@metabiota.com'; REDACTED; 'Anne Laudisoit'; 'ksaylors@metabiota.com'; 'pmulembakani@metabiota.com'; REDACTED; 'utamoufe@metabiota.com'; 'kvgilardi@ucdavis.edu'; REDACTED; 'djwolking@ucdavis.edu'; REDACTED; 'trkelly@ucdavis.edu'; 'cmonagin@ucdavis.edu'; 'jabelkhiria@ucdavis.edu'; REDACTED; REDACTED; Jim Desmond; 'cmonagin@ucdavis.edu'; 'jabelkhiria@ucdavis.edu'; REDACTED; 'bhbird@ucdavis.edu'; 'ZimmermanD@si.edu'; 'jkamau@primateresearch.org'; REDACTED; 'wasmith@ucdavis.edu'; 'jklane@ucdavis.edu'; 'jkmazet@ucdavis.edu'

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**Subject:** PREDICT Emerging Disease Insights - 2 pagers

**Importance:** High

Dear PREDICT global team leads, regional leads and country coordinators,

I am delighted to share with you the latest Emerging Disease Insights (EDIs) 2-pagers from our PREDICT Modeling and Analytics Team. These are 2-page reports on the analyses that our team is doing to guide surveillance and test out ideas about the risk of emergence of novel PREDICT viruses we discover. These three focus on:

1. Measuring viral discovery: Using the viral accumulation curves from PREDICT 1 to determine how many samples we need to collect and test to discover the majority of viruses in a host species
2. Identifying the next Zika virus: Analyzing all known flaviviruses to assess which ones have the characteristics that could allow them to emerge and spread.
3. Economic case for the GVP: Economic analysis of the Global Virome Project sampling and testing strategy, with an estimate of return-on-investment.

These EDIs are intended to be easily understood, provide an interesting background story based on PREDICT that demonstrates how we're using state-of-the-art modeling and analytics, and our data from PREDICT, to better understand the risk of disease emergence globally. Please share them widely with your staff, colleagues and partners! They will also be available publicly from [livescience.ecohealthalliance.org](https://livescience.ecohealthalliance.org), as well as on Basecamp, of course.

We are actively working on other Emerging Disease Insights to be completed this and next year, so please send any ideas you may have: Comments are very welcome!

Cheers,

Peter

**Peter Daszak**

*President*

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## Améliorer l'échantillonnage et la découverte viraux: courbes d'accumulation virale

Le projet USAID PREDICT mène une surveillance virale de la faune, des animaux domestiques et des humains à l'échelle mondiale. Les équipes de PREDICT dans plus de 30 pays à travers le monde ont collecté et testé des échantillons d'espèces sauvages et ont découvert plus de 1000 virus provenant de familles virales connues pour menacer la santé humaine. Les espèces sauvages sont priorisées pour la surveillance sur la base des connaissances scientifiques existantes sur la probabilité d'une contagion virale de ces hôtes à l'homme [1]. PREDICT vise à caractériser la diversité virale chez les mammifères, qui peuvent représenter des centaines de milliers d'espèces virales inconnues [2], avant qu'elles n'apparaissent chez les humains ou les animaux domestiques.

### DEFI: COMBIEN D'ECHANTILLONS DEVONS-NOUS RECUEILLIR ET TESTER POUR TROUVER LA PLUPART DES VIRUS D'UN HOTE DONNE?

PREDICT cherche à découvrir des virus actuellement inconnus chez les espèces fauniques qui ont été mal échantillonnées avant ce projet. Nous avons besoin d'outils pour nous dire quand nous avons découvert la majorité des virus circulant naturellement dans une espèce afin que nous puissions arrêter d'échantillonner ces espèces et passer à d'autres.

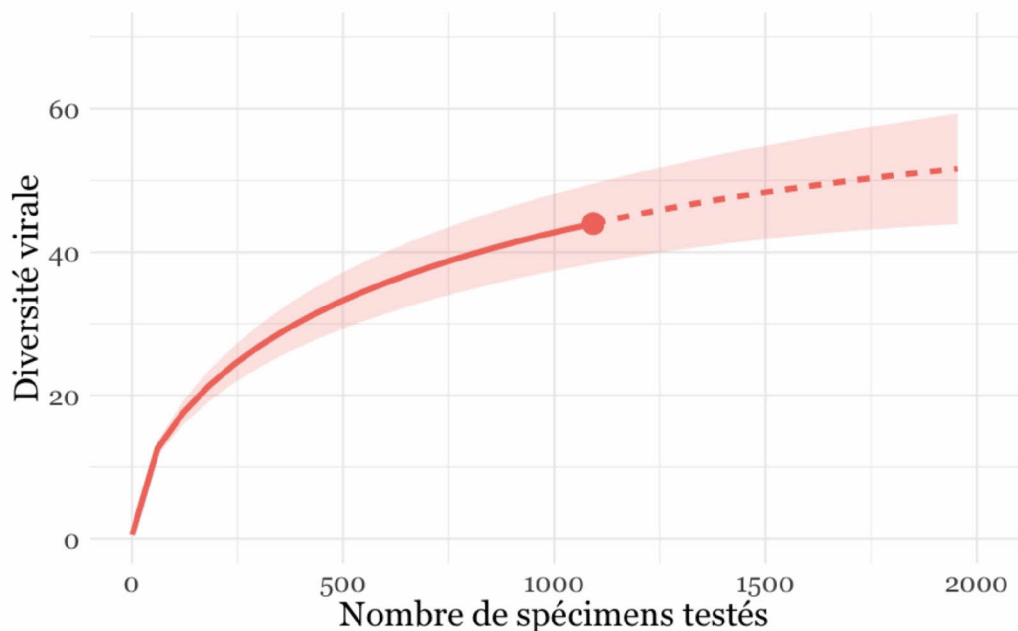
### SOLUTION: COURBES D'ACCUMULATION VIRALE

L'équipe PREDICT utilise des techniques de modélisation statistique pour résoudre ce problème. Plus précisément, nous appliquons des *méthodes d'estimation de la richesse des espèces* pour déterminer quand une espèce sauvage a été échantillonnée de manière exhaustive [3]. Ces estimations, généralement utilisées dans les études écologiques et modifiées ici pour la découverte virale, peuvent être exprimées visuellement sous forme de *courbes d'accumulation virale*.

le 24 avril 2018

Pour détails sur les méthodes ou l'analyses, contact: [PREDICTmodeling@ecohealthalliance.org](mailto:PREDICTmodeling@ecohealthalliance.org)

D'échantillonnage Virale de *Pteropus giganteus* (Neuf Familles Virales)



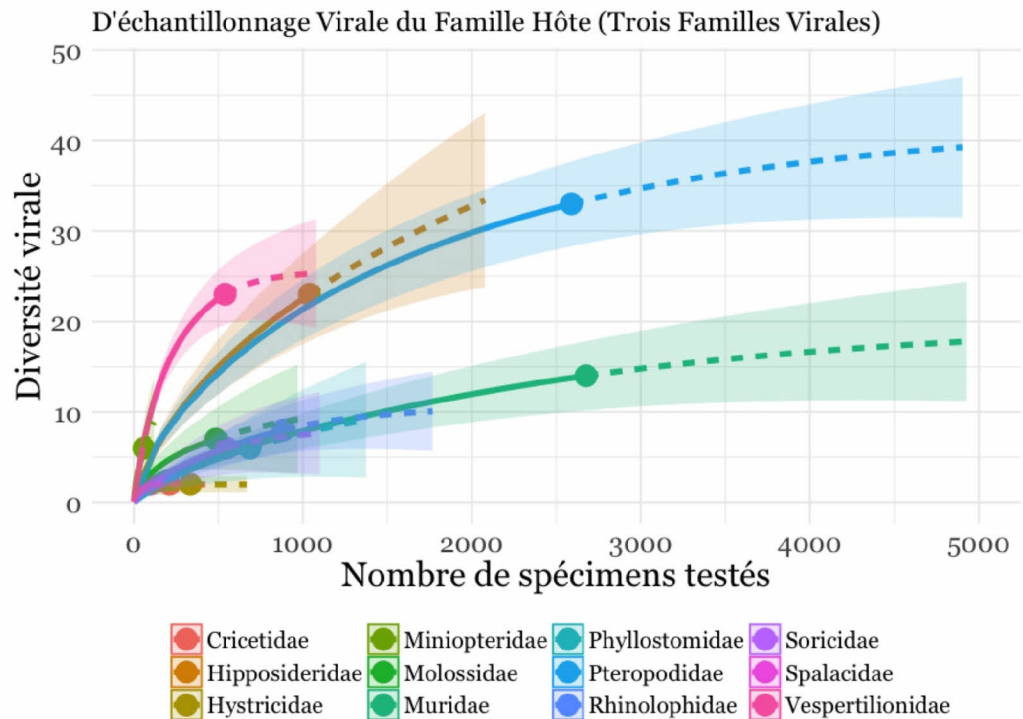
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**Figure 1:** Courbe d'accumulation virale pour l'espèce de chauve-souris *Pteropus giganteus*, adaptée d'Anthony et al. [4]. L'axe des x du graphique montre le nombre de spécimens, ou d'échantillons, testés pour neuf familles virales, et l'axe des y indique le nombre de virus uniques découverts dans ces échantillons. La ligne continue représente les données observées, et la partie en pointillés représente les estimations de la diversité virale dérivées statistiquement si l'échantillonnage de *P. giganteus* se poursuit. La tendance à la hausse de la ligne pointillée suggère que *P. giganteus* abrite probablement plus de 44 virus qui ont été observés dans cet effort d'échantillonnage virale particulier.

La théorie sous-jacente à ces méthodes est que si les efforts d'échantillonnage aboutissent à la détection d'un ensemble similaire de virus, l'échantillonnage est probablement presque terminé (c'est-à-dire que la plupart des espèces présentes ont été observées). En revanche, si l'échantillonnage continue de générer des observations de nouveaux virus, alors la communauté de pathogènes a probablement encore de nombreuses espèces à observer. Les premiers travaux du projet PREDICT ont utilisé ces techniques pour estimer que l'espèce de chauve-souris *Pteropus giganteus* héberge un total de 58 virus dans neuf familles virales (figure 1) [4] et que les macaques rhésus (*Macaca mulatta*) hébergent 283 virus dans 14 familles virales [5].

Ces études pilotes fournissent une preuve de concept qui a maintenant été appliquée à d'autres données PREDICT (figure 2). En plus de leur utilité pour guider les stratégies d'échantillonnage, la comparaison entre les courbes d'accumulation permet d'identifier les espèces hôtes qui présentent constamment une forte diversité virale, ce qui peut en faire des réservoirs viraux plus importants. Les observations virales peuvent également être agrégées à des niveaux plus grossiers de taxonomie hôte pour permettre la comparaison des genres hôtes ou des familles, par exemple.



**Figure 2:** Courbes d'accumulation virale utilisant les données PREDICT estimant la richesse des espèces virales à travers les *familles* hôtes pour trois familles virales majeures: Coronavirus, Influenzas et Paramyxovirus. Ces résultats suggèrent que, pour ces trois familles virales, certains taxons hôtes ont encore une diversité virale considérable à découvrir (par exemple, les chauves-souris des Hipposideridae qui ont une courbe d'accumulation toujours ascendante), alors que pour d'autres, il reste peu de diversité virale non observée.

## CONCLUSIONS

- Les courbes d'accumulation des espèces sont une méthode statistique utilisée pour estimer la quantité de diversité non observée dans un échantillon biologique. Pour PREDICT, nous avons appliqué ces techniques à nos données de découverte virale obtenues à partir d'hôtes fauniques.
- L'application des courbes d'accumulation virale à l'aide des données du projet PREDICT, qui est collecté et testé de manière cohérente entre les espèces et les pays, peut améliorer notre connaissance des taxons hôtes qui transportent des assemblages viraux particulièrement riches et qui accueillent, les taxons nécessitent des efforts d'échantillonnage supplémentaires.
- Ces outils analytiques soutiennent les objectifs généraux de PREDICT: standardiser la surveillance virale mondiale, caractériser plus complètement les nouveaux virus dans les populations hôtes des réservoirs et générer des connaissances de base critiques pour aider à prévenir les contagions virales.

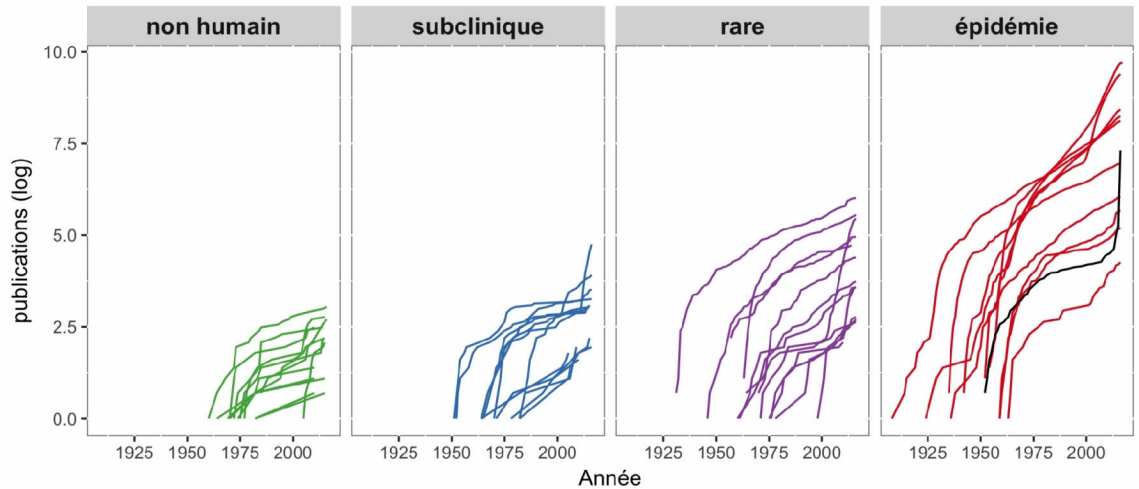
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## Identifier le prochain Zika: une analyse des flavivirus sous-étudiés

L'épidémie de virus Zika en cours a été déclarée urgence de santé publique de portée internationale par l'OMS en février 2016, en raison de sa propagation rapide et de son lien avec les malformations congénitales. Malgré une découverte en 1947, des preuves d'infection humaine et une relation étroite avec des virus humains à fort impact comme la dengue et la fièvre jaune, l'étude de Zika est restée limitée jusqu'à l'épidémie de l'île Yap en Micronésie en 2007<sup>1</sup> (Figure 1). La propagation pandémique de Zika met l'accent sur la nécessité de mieux comprendre la distribution, la gamme d'hôtes et le potentiel épidémique des autres flavivirus sous-étudiés<sup>2</sup>.

L'équipe de modélisation et d'analyse PREDICT-2 a compilé une base de données de toutes les espèces hôtes et vecteurs naturelles connues pour les 53 virus reconnus par l'ICTV<sup>3</sup> du genre Flavivirus. Au total, 1 768 associations flavivirus-hôte (dont 317 espèces de mammifères uniques et 743 espèces d'oiseaux) et 309 associations de vecteurs de flavivirus (149 espèces de vecteurs d'insectes uniques) ont été identifiées. Nous avons ensuite calculé l'étendue taxonomique et l'aire de répartition géographique de chaque flavivirus afin d'éclairer les risques actuels et potentiels de contagion et de propagation des flavivirus.



**Figure 1: Effort de publication 1900-2016 de chaque flavivirus (n = 53).** Nombre de publications par virus extraites de Web of Science le 27/10/16. Couleur du virus basée sur l'impact humain: virus non humains = verts, virus subcliniques (détectés uniquement par sérologie) = bleu, virus rares (<20 cas pathogènes) = violet, virus épidémie (> 20 cas pathogènes) = rouge. Zika est de couleur noire pour souligner la forte augmentation des publications après que son impact humain a changé en épidémie en 2007.

Afin de contrôler à l'effet de l'effort de recherche et de comprendre l'importance relative de l'ampleur de l'hôte et du vecteur dans le potentiel zoonotique des flavivirus, nous avons développé un modèle linéaire généralisé de probabilité qu'un virus soit zoonotique. Nous simplifions l'ampleur de l'hôte et du vecteur au groupe taxonomique le plus bas qui englobe toutes les espèces hôtes ou vecteurs naturelles connues. L'ampleur de l'hôte non humain ( $p = 0,02$ ) et l'ampleur du vecteur ( $p = 0,03$ ) ont été significatives pour déterminer si un virus est classé comme zoonotique, de sorte que ces variables ont été utilisées pour classer les virus par ordre de priorité (Tableau 1). En utilisant la gamme mammifère de l'UICN et les fichiers

le 24 avril 2018

Pour détails sur les méthodes ou l'analyses, contact: [PREDICTmodeling@ecohealthalliance.org](mailto:PREDICTmodeling@ecohealthalliance.org)

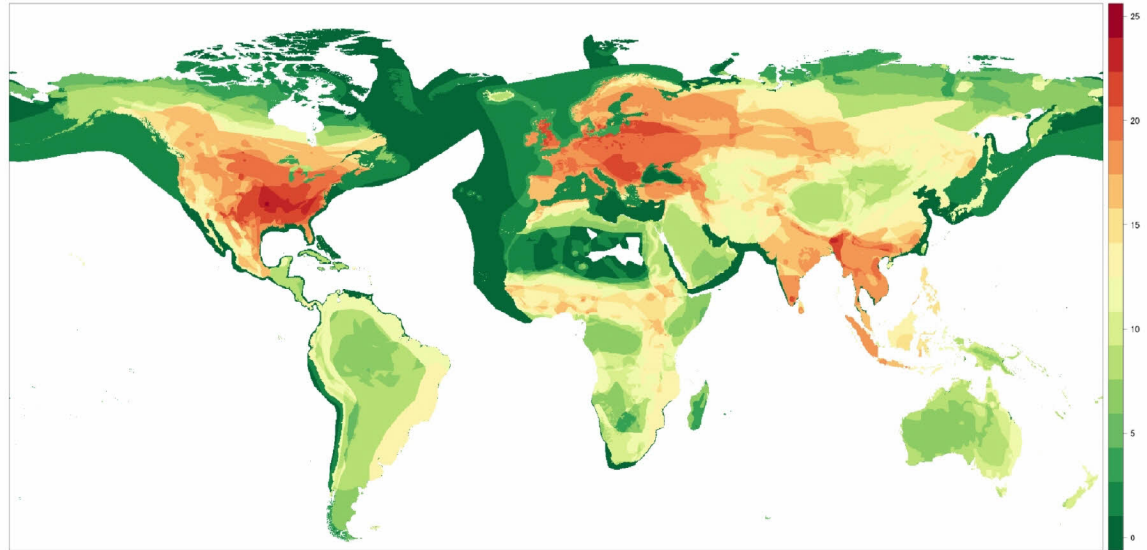


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spatiaux BirdLife, nous avons créé une couche unique de distribution d'hôtes vertébrés pour chaque flavivirus, et les combinons pour produire une carte mondiale de la diversité flavivirus connue chez les mammifères et les oiseaux sauvages (Figure 2).

Sur les 53 flavivirus, 37 (70%) ont été détectés chez l'homme et 25 de ces flavivirus associés à l'homme n'ont pas encore provoqué d'épidémies significatives. En utilisant l'ampleur taxonomique de l'hôte et des vecteurs, nous priorisons 10 de ces 25 flavivirus préépidémiques pour d'autres recherches en utilisant seulement deux variables (l'ampleur de l'hôte et du vecteur) qui sont liées au potentiel zoonotique et épidémique (Tableau 1).



**Figure 2:** Carte géographique de la diversité des flavivirus actuellement connue chez les mammifères et les oiseaux sauvages (n = 42 virus). La distribution du virus est calculée comme la gamme globale de tous les hôtes mammifères et oiseaux pour chaque virus (1 à 294 hôtes par virus, médiane = 3). Les régions de plus rouges présentent une concentration plus élevée de flavivirus uniques en fonction de la gamme d'hôtes des vertébrés. Les points chauds aux États-Unis et en Europe sont probablement dus à des biais de recherche.

**Tableau 1:** Les 10 premiers flavivirus humains pré-épidémiques ont été classés par ordre de priorité pour des recherches ultérieures basées sur la grande taille de l'hôte et du vecteur. L'infection humaine actuelle est classée comme subclinique (détectée uniquement chez l'homme par sérologie) ou rare (<20 cas humains).

Virus	Infection humaine	Ampleur De L'hôte	Ampleur du vecteur	Ordre des hôtes	Comptage Pub
Wesselsbron	rare	3	Phylum	4	113
Usutu	rare	3	Famille	11	234
Ilheus	rare	3	Famille	4	142
Louping Ill	rare	3	Genre	8	413
Uganda S	subclinique	3	Genre	2	26
Tembusu	subclinique	1	Famille	3	116
Aroa	rare	1	Famille	2	36
Bagaza	rare	1	Famille	2	36
Saboya	subclinique	1	Espèce	5	21
Apoi	rare	2	Aucun	1	15

Le virus Zika a été détecté chez des mammifères d'Amérique du Sud<sup>4</sup>, ce qui montre que le transport d'un virus par l'homme peut entraîner l'établissement de nouveaux hôtes animaux. L'adaptabilité virale à diverses espèces hôtes et vecteurs est probablement critique pour la formation réussie de nouveaux cycles sylvatiques. Nos analyses soulignent la nécessité d'un suivi continu de la largeur de l'hôte et du vecteur afin d'identifier les virus pré-épidémiques, les nouveaux réservoirs viraux potentiels et les zones géographiques susceptibles d'expansion virale. En particulier, nous avons trouvé que le virus Wesselsbron et le virus Usutu sont des flavivirus négligés hautement prioritaires qui risquent de devenir épidémiques.

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## Coûts globaux des maladies infectieuses émergentes: un cas économique pour le projet Global Virome

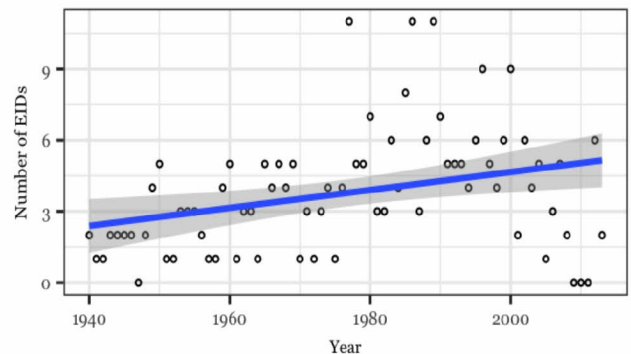
Une seule épidémie de maladie infectieuse émergente telle que la pandémie de SRAS en 2003 peut coûter à l'économie mondiale entre 30 et 50 milliards de dollars environ, mais les investissements dans la prévention et la recherche sont souvent insuffisants. Pour justifier économiquement l'investissement dans des programmes de recherche, de surveillance et de prévention à grande échelle, il est important de modéliser et de quantifier les impacts économiques futurs des maladies infectieuses émergentes (MIE) et des pandémies.

Le **Global Virome Project (GVP)** est un effort global de 10 ans proposé pour découvrir la majorité des virus présentant un potentiel zoonotique probable chez les mammifères et la sauvagine. Ce projet pourrait réduire le fardeau des maladies infectieuses émergentes en créant une séquence virale et un atlas des métadonnées qui soutiendront les évaluations des risques, l'élaboration de plans d'atténuation et réduiront les temps de réponse. Les données générées par le GVP sont également susceptibles d'accélérer les progrès technologiques et de fournir un point de départ pour la découverte et le développement diagnostics et thérapeutiques. Sur la base des coûts de laboratoire et de terrain actuellement prévus, le GVP est estimé réalisable à partir de 1,2 milliard de dollars ou 120 millions de dollars par an au cours des dix prochaines années. Compte tenu de nos estimations de la fréquence des MIE, des taux de mortalité et des impacts sur l'économie mondiale, nous projetons les coûts de tous les événements zoonotiques émergents potentiels au cours des 30 prochaines années et calculons le retour sur investissement (RSI).

### COÛTS DES MALADIES INFECTIEUSES ÉMERGENTES

L'incidence des événements des maladies infectieuses émergentes est en hausse (1). La majorité de ces maladies, y compris le SRAS, le MERS, la grippe aviaire et le virus Ebola, sont des zoonoses causées par le débordement d'animaux dans les populations humaines. Pour projeter les futurs taux annuels d'événements de MIE zoonotiques, nous calculons la fréquence et la variance moyennes des événements de MIE par an et le taux de variation dans le temps (2). Nous avons construit un modèle pour estimer la mortalité, la morbidité et les chocs économiques par événement, en nous basant sur les données sur la létalité dans le référentiel des maladies infectieuses émergentes (EIDR).

**Figure 1: Fréquence annuelle des maladies infectieuses émergentes de 1940 à 2013.**



Source: EIDR.ecohealthalliance.org

### ESTIMER LES DOMMAGES GLOBAUX DES ÉVÉNEMENTS DE MIE

Les dommages globaux, ou les coûts économiques, des maladies infectieuses émergentes (MIE) dépendent du nombre annuel d'événements de MIE et du coût moyen de chaque événement. Les dommages d'un événement sont les coûts totaux de la mortalité  $M(t)$ , de la morbidité  $A(t)$ ,

le 24 avril 2018

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et des chocs économiques  $G(t)$ . Pour trouver la valeur actuelle totale des dommages globaux  $PVGD$ , nous utilisons un taux standard de cinq pour cent ( $\delta = 0,05$ ) pour actualiser les économies futures à leur valeur actuelle.

$$PVGD = \int_{t=0}^{t=30} (M(t) + A(t) + G(t)) e^{-\delta t}$$

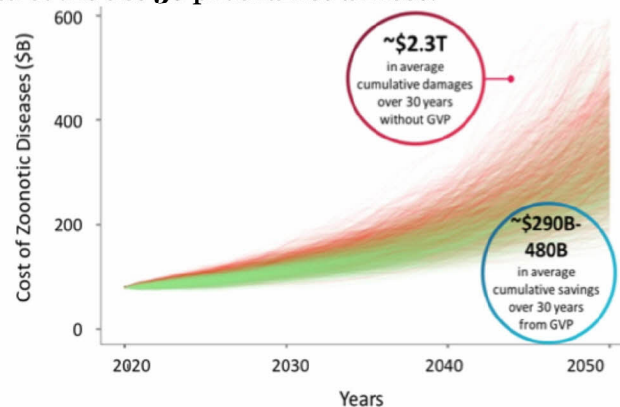
Nous utilisons des méthodes conventionnelles pour calculer la valeur d'une vie statistique et la valeur d'un jour de travail perdu (3). Nous avons paramétré notre modèle en nous servant le nombre annuel prévu d'événements de MIE, du taux de croissance du PIB historique, de 2,4% et le PIB global de 2015 de 73,4 trillions de dollars. Moyennant plus de 5 000 simulations, nous estimons que le coût actualisé des maladies infectieuses émergentes s'élèverait à 2,3 trillions de dollars américains au cours des 30 prochaines années.

## COÛTS ET RSI D'UN PROJET GLOBAL VIROME

Pour déterminer combien il coûterait pour découvrir toute la diversité virale chez les mammifères, des techniques écologiques markrecapture ont été utilisées pour estimer l'effort d'échantillonnage requis pour découvrir tous les virus présents dans une espèce (4). Nous estimons qu'il y a 1.669.106 (se 697.623 - 2.640.590) virus non découverts susceptibles de résider chez les hôtes mammifères et oiseaux aquatiques (2). Cependant, seulement 32,2-45,0% (493 856-689 285) d'entre eux sont susceptibles d'être zoonotiques, et ceux qui sont plus coûteux à trouver sont moins susceptibles de contaminer. En supposant que toutes les espèces de mammifères auraient des coûts de laboratoire et de terrain équivalents, la découverte de 71% de tous les virus mammifères et de la grippe aviaire aquatique coûterait 1,2 milliard de dollars, soit 120 millions de dollars en moyenne sur 10 ans.

Avoir une ligne de base de séquences virales identifiées conduirait à une détection plus précoce et à des temps de réponse plus rapides, réduisant à la fois la fréquence épidémique et l'impact. Ces améliorations n'auraient pas d'impact immédiat, mais les avantages s'accumuleraient tout au long de la vie du GVP et au-delà. Pour nos calculs, nous supposons que ces avantages génèrent en moyenne 10% d'économies sur les dommages dans tous les cas au cours des 30 prochaines années (290-480 milliards de dollars). Ainsi, un projet Global Virome de 1,2 milliard de dollars rapporterait plus de 200 dollars d'économies pour chaque dollar investi.

**Figure 2. Dommages économiques prévus des MIE au cours des 30 prochaines années.**



*La ligne rouge montre la croissance des dommages en affaires - comme d'habitude, la ligne verte montre que la réduction de la croissance du GVP entraîne une réduction de 10% des dommages.*

Même si le GVP ne fait que réduire de 10% la probabilité et l'impact des MIE, ce projet générerait des retours sur investissement importants en raison des coûts élevés et croissants des pandémies. La perte prématurée de vies et les chocs économiques représentent la plus grande partie des dommages économiques causés par les événements de MIE. Un budget



annuel de 120 millions de dollars pour un projet Global Virome de 10 ans est un investissement qui pourrait produire des retours exceptionnellement élevés.

### Références

1 Carroll D, Daszak P, Wolfe ND, Gao GF, Morel CM, Morzaria, S, Mazet, JAK. The Global Virome Project. *Science*. 2018; 359(6378): 872-4. 2. Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, et al. Global trends in emerging infectious diseases. *Nature*. 2008;451:990-3. 3. Molinari NAM, Ortega-Sanchez IR, Messonnier ML, Thompson WW, Wortley PM, Weintraub E, et al. The annual impact of seasonal influenza in the US: Measuring disease burden and costs. *Vaccine*. 2007;25:5086-96. 4. Anthony SJ, Epstein JH, Murray KA, Navarrete-Macias I, Zambrana-Torrel CM, Solovyov A, et al. A strategy to estimate unknown viral diversity in mammals. *mBio*. 2013;4.

**From:** "Dibesh Karmacharya" [REDACTED]  
**Sent:** 05/15/2018 7:31:57 PM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>; [REDACTED] "Ariful Islam" <arif@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Hongying Li" <li@ecohealthalliance.org>; ckjohnson@ucdavis.edu; "Emily Hagan" <hagan@ecohealthalliance.org>; "Thomas Hughes" <tom.hughes@ecohealthalliance.org>; "Allison White" <white@ecohealthalliance.org>; "Kevin Olival" <olival@ecohealthalliance.org>; "Alice Latinne" <latinne@ecohealthalliance.org>; [REDACTED] tgoldstein@ucdavis.edu; dmciver@metabiota.com; ssilithammavong@metabiota.com; [REDACTED] [REDACTED] "Ava Sullivan" <sullivan@ecohealthalliance.org>; [REDACTED] "Debapriyo Chakraborty" <chakraborty@ecohealthalliance.org>; [REDACTED] murrays@si.edu; valituttoM@si.edu; "Patrick Dawson" <dawson@ecohealthalliance.org>; [REDACTED] ghazi@human-link.org; "William B. Karesh" <karesh@ecohealthalliance.org>; [REDACTED] jayukekbong@metabiota.com; [REDACTED] "Anne Laudisoit" <laudisoit@ecohealthalliance.org>; ksaylors@metabiota.com; pmulembakani@metabiota.com; ekambale@gorilladoctors.org; utamoufe@metabiota.com; kvgilardi@ucdavis.edu; [REDACTED] djwolking@ucdavis.edu; [REDACTED] trkelly@ucdavis.edu; cmonagin@ucdavis.edu; jabelkhiria@ucdavis.edu; [REDACTED] [REDACTED] "Jim Desmond" <desmond@ecohealthalliance.org>; cmonagin@ucdavis.edu; jabelkhiria@ucdavis.edu; daouda.ndiaye@ucad.edu.sn; [REDACTED] [REDACTED] bhbird@ucdavis.edu; ZimmermanD@si.edu; jkamau@primateresearch.org; [REDACTED] ; wasmith@ucdavis.edu; jklane@ucdavis.edu; jkmazet@ucdavis.edu  
**Cc:** "Alison Andre" <andre@ecohealthalliance.org>; "Aleksei Chmura" <chmura@ecohealthalliance.org>; "Kevin Olival" <olival@ecohealthalliance.org>; "Anna Willoughby" <willoughby@ecohealthalliance.org>; predict@ucdavis.edu; "Kevin Olival" <olival@ecohealthalliance.org>; "Noam Ross" <ross@ecohealthalliance.org>  
**Subject:** RE: PREDICT Emerging Disease Insights - 2 pagers

Hi Peter,

Received and thanks.  
Hope you are doing well.

Regards,

Dibesh



CENTER FOR MOLECULAR DYNAMICS - NEPAL

**Dibesh Karmacharya, Ph.D.**  
Executive Director/Chairman  
CMDN

**REDACTED**

W: [www.cmdn.org](http://www.cmdn.org)

Nepal Tiger Genome Project: [www.ntgp.org.np](http://www.ntgp.org.np)  
Nepal Fish Biodiversity Project: [www.fish.org.np](http://www.fish.org.np)  
CEREBRO- Center for Global Health: [www.cerebro.org.np](http://www.cerebro.org.np)



**BIOVAC**

**From:** Peter Daszak [mailto:daszak@ecohealthalliance.org]

**Sent:** Wednesday, May 16, 2018 1:57 AM

**To:** REDACTED Ariful Islam; Jon Epstein; Hongying Li; ckjohnson@ucdavis.edu; Emily Hagan; Thomas Hughes; Allison White; Kevin Olival; Alice Latinne; REDACTED tgoldstein@ucdavis.edu; dmciver@metabiota.com; ssilithammavong@metabiota.com; REDACTED

REDACTED Ava Sullivan; REDACTED Debapriyo Chakraborty; REDACTED

murrays@si.edu; valituttoM@si.edu; Patrick Dawson; REDACTED ghazi@human-link.org;

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ksaylors@metabiota.com; pmulembakani@metabiota.com; REDACTED; utamoufe@metabiota.com;

kvgilardi@ucdavis.edu REDACTED djwolking@ucdavis.edu;

REDACTED REDACTED trkelly@ucdavis.edu; cmonagin@ucdavis.edu; jabelkhiria@ucdavis.edu; REDACTED REDACTED

Jim Desmond; cmonagin@ucdavis.edu; jabelkhiria@ucdavis.edu; REDACTED

REDACTED bhbird@ucdavis.edu; ZimmermanD@si.edu;

jkamau@primateresearch.org; REDACTED wasmith@ucdavis.edu; jklane@ucdavis.edu;

jkamazet@ucdavis.edu

**Cc:** Alain Andre; Aleksei Chmura; Kevin Olival; Anna Willoughby; predict@ucdavis.edu; Kevin Olival; Noam Ross

**Subject:** RE: PREDICT Emerging Disease Insights - 2 pagers

**Importance:** High

Dear All,

We've had the last three PREDICT Emerging Disease Insights translated into French (attached).

Please circulate to your Francophone colleagues!!

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
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[@EcoHealthNYC](mailto:PeterDaszak@EcoHealthNYC)

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---

**From:** Peter Daszak  
**Sent:** Thursday, April 19, 2018 1:20 PM  
**To:** [REDACTED]; Ariful Islam; Jon Epstein; 'Hongying Li'; 'ckjohnson@ucdavis.edu'; Emily Hagan; 'Thomas Hughes'; 'Allison White (white@ecohealthalliance.org)'; 'olival@ecohealthalliance.org'; 'Alice Latinne (latinne@ecohealthalliance.org)'; [REDACTED]; 'tgoldstein@ucdavis.edu'; 'dmciver@metabiota.com'; 'ssilithammavong@metabiota.com'; 'dveasna@pasteur-kh.org'; [REDACTED]  
[REDACTED]; 'Ava Sullivan (sullivan@ecohealthalliance.org)';  
[REDACTED]; Debapriyo Chakraborty; [REDACTED]  
'murrays@si.edu'; 'valituttoM@si.edu'; Patrick Dawson; [REDACTED]; 'ghazi@human-link.org';  
William B. Karesh; [REDACTED]; 'jayukekbong@metabiota.com'; [REDACTED]; 'Anne Laudisoit';  
'ksaylors@metabiota.com'; 'pmulembakani@metabiota.com'; [REDACTED]; 'utamoufe@metabiota.com';  
'kvgilardi@ucdavis.edu'; [REDACTED]; 'djwolking@ucdavis.edu';  
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'trkelly@ucdavis.edu'; 'cmonagin@ucdavis.edu'; 'jabelkhiria@ucdavis.edu'; [REDACTED]  
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'wasmith@ucdavis.edu'; 'jklane@ucdavis.edu'; 'jkmazet@ucdavis.edu'  
**Cc:** Alison Andre; Aleksei Chmura; 'Kevin Olival, PhD'; Anna Willoughby; 'predict@ucdavis.edu'; Kevin Olival, PhD (olival@ecohealthalliance.org); 'Noam Ross'  
**Subject:** PREDICT Emerging Disease Insights - 2 pagers  
**Importance:** High

Dear PREDICT global team leads, regional leads and country coordinators,

I am delighted to share with you the latest Emerging Disease Insights (EDIs) 2-pagers from our PREDICT Modeling and Analytics Team. These are 2-page reports on the analyses that our team is doing to guide surveillance and test out ideas about the risk of emergence of novel PREDICT viruses we discover. These three focus on:

1. Measuring viral discovery: Using the viral accumulation curves from PREDICT 1 to determine how many samples we need to collect and test to discover the majority of viruses in a host species
2. Identifying the next Zika virus: Analyzing all known flaviviruses to assess which ones have the characteristics that could allow them to emerge and spread.
3. Economic case for the GVP: Economic analysis of the Global Virome Project sampling and testing strategy, with an estimate of return-on-investment.

These EDIs are intended to be easily understood, provide an interesting background story based on PREDICT that demonstrates how we're using state-of-the-art modeling and analytics, and our data from PREDICT, to better understand the risk of disease emergence globally. Please share them widely with your staff, colleagues and partners! They will also be available publicly from [livescience.ecohealthalliance.org](http://livescience.ecohealthalliance.org), as well as on Basecamp, of course.

We are actively working on other Emerging Disease Insights to be completed this and next year, so please send any ideas you may have: Comments are very welcome!

Cheers,

Peter

**Peter Daszak**

*President*

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New York, NY 10001

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[@PeterDaszak](#)  
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**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 05/16/2018 4:47:56 PM (-07:00)  
**To:** "Kevin Olival" <olival@ecohealthalliance.org>  
**Cc:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Any more immediate feedback on bat paper draft?

Thanks,  
J

On Wed, May 16, 2018 at 10:14 AM, Kevin Olival <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)> wrote:

Jonna, just a quick follow up. Peter and I checked in with Evan to make sure all of the feedback you previously sent to him is properly incorporated into the document for future revisions. Similarly, as he states below, he'll make sure to address any outstanding comments from Diego and Nistara. Evan also had a couple of good ideas on simplifying the paper/story, that I think will also help avoid overlap w the grad students, that we can discuss on the next P2-wide M&A call.

Cheers,  
Kevin

Begin forwarded message:

**From:** Evan Eskew <[eskew@ecohealthalliance.org](mailto:eskew@ecohealthalliance.org)>  
**Subject:** Any more immediate feedback on bat paper draft?  
**Date:** May 16, 2018 at 9:30:55 AM EDT  
**To:** Nistara Randhawa <[nrandhawa@ucdavis.edu](mailto:nrandhawa@ucdavis.edu)>, Diego Montecino <[dmontecino@ucdavis.edu](mailto:dmontecino@ucdavis.edu)>  
**Cc:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, "Kevin Olival, PhD" <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)>, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

Hi all,

After a brief hiatus due to travel and other writing projects, I'm back to looking at the bat seasonality paper. Diego, I've got your comments post-Napa (thanks!). I'm mainly writing to check to see if Nistara has any further feedback since I know she's looked over the draft. No worries at all Nistara if you haven't reviewed in detail or if your comments overlap with Diego's. Just wanted to collect any outstanding feedback there may be at this point.

Also, Diego, I know you've been working with the R EIDITH package. Tammie and Noam/Cale are definitely the best people to contact regarding technical issues (as you've been doing), but just a reminder that since you and Nistara both now have access to my GitHub project, that's probably a good reference for the ways in which we use the package, quality filter the data, etc. Of course I'd be happy to answer any "how-to" questions that arise!

All my best,  
Evan

--

**Evan Eskew, PhD**  
*Research Scientist, Modeling and Analytics*

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**From:** predict-request@ucdavis.edu on behalf of "Elizabeth Leasure" <ealeasure@ucdavis.edu>  
**Sent:** 08/06/2018 5:15:31 PM (-07:00)  
**To:** "Molly Turner" <turner@ecohealthalliance.org>  
**Cc:** "Evelyn Luciano" <luciano@ecohealthalliance.org>; "Ava Sullivan" <sullivan@ecohealthalliance.org>; "predict@ucdavis.edu" <predict@ucdavis.edu>; "David John Wolking" <djwolking@ucdavis.edu>; "Hannah R Chale" <hrchale@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** [predict] RE: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)  
**Attachments:** PREDICT-2 Budget\_Year 4\_EHA\_Year 5\_revised final\_8-6 rvsd\_el.xlsx

Hi Molly. There were some additional formula errors identified when I reviewed your revised budget, and now the core portion of your budget needs to be cut by \$69,287 in order to not exceed your core budget from last year. Please revise and send to me by noon tomorrow.

Please revise the spreadsheet attached.  
Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

---

**From:** Elizabeth Leasure  
**Sent:** Monday, August 6, 2018 1:21 PM  
**To:** Molly Turner <turner@ecohealthalliance.org>  
**Cc:** Evelyn Luciano <luciano@ecohealthalliance.org>; Ava Sullivan <sullivan@ecohealthalliance.org>; predict@ucdavis.edu; David John Wolking <djwolking@ucdavis.edu>; Hannah R Chale <hrchale@ucdavis.edu>; Peter Daszak <daszak@ecohealthalliance.org>  
**Subject:** RE: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Thanks, Molly. If I have any questions, I'll follow up.

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <turner@ecohealthalliance.org>  
**Sent:** Monday, August 6, 2018 1:07 PM  
**To:** Elizabeth Leasure <ealeasure@UCDAVIS.EDU>  
**Cc:** Evelyn Luciano <luciano@ecohealthalliance.org>; Ava Sullivan <sullivan@ecohealthalliance.org>; predict@ucdavis.edu; David John Wolking <djwolking@ucdavis.edu>; Hannah R Chale <hrchale@UCDAVIS.EDU>; Peter Daszak <daszak@ecohealthalliance.org>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Budget revised to accommodate Ebola caps attached. As you can see we didn't make reductions to the CIV budget but rather to the Global costs put towards Ebola, so no revisions to the CIV workplans required.



The Liberia budget is also now largely the same as what was originally submitted, but I addressed the issue of procurement in the attached revised workplan.

Our overall Ebola budget has now been reduced by \$268,593, as requested. I confess I still don't really understand these caps, but I am assuming that this is OK. If not let me know and we can be ready to reduce by country budget.

NB this required further revision to our core costs, as I previously mentioned, as well as specifically to the Jordan budget.

Cheers,  
Molly

On Fri, Aug 3, 2018 at 2:31 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Okay, that's fine

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Friday, August 3, 2018 10:37 AM

**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Just clarifying -- that's the Liberia workplans that may come in on Monday along with revised CIV materials.

On Fri, Aug 3, 2018 at 1:36 PM, Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)> wrote:

OK, thanks. We'll see how it goes on Monday.

On Fri, Aug 3, 2018 at 1:35 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Thanks, Molly. If you want to rework your Global costs to free up funds for CIV and see how that works out, feel free. No problem about CIV coming in on Monday.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Friday, August 3, 2018 10:32 AM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hello Liz,

Attached is a final revised budget addressing your China comments and incorporating a revised Liberia budget, as well as some further revisions to our global costs. Also attached is an explanation of the limited field activities that have been budgeted for in a few countries.

I am checking with Jim as to what if anything will need to be revised in the workplans in light of this new budget, at this point however it is looking like that will need to come on Monday with the CIV materials, hope that's OK.

I had a thought about CIV. It seems to me that our global costs might be a little disproportionately weighted towards Liberia and CIV with the current breakdown. Would it be possible to reduce that proportion, so as to free up more CIV-specific Ebola funds? I realize this would entail some substantial revision to our core costs to accommodate funds formerly budgeted for Ebola work, but if this is a possibility I'd be happy to work as quickly as I can to see if we can make it work. I'll also see what Anne says on Monday in terms of what can be done in light of this cap, and of course see if there's anywhere in the CIV budget where we can reduce without upsetting anyone.

Finally, answers to your comments in the email body below.

Cheers,  
Molly

- There were some formula errors that resulted in increased costs in some countries, so please revise your core budget to get back down to the \$8,282,185 target.

Addressed in previous message and in the attached.

- There were several countries that budgeted for continued sampling in Y5, which is contradictory to previous guidance to wrap up sampling by the end of Y4. If there are special circumstances at play that you believe warrant inclusion of sampling activities in Y5, please provide an explanation so those costs can be considered when Jonna conducts her PI review.

Attached, and addressed on 6/29 call and in "P2 Y5 Workplan and Sustainability Guidance (June 2018) final"

- Clarification of how many samples are budgeted for testing in Y5 is needed for some countries (which are noted in the spreadsheet attached).

Addressed in the attached.

- Please note that the Liberia budget was reduced (changed cells highlighted) as part of the cap revision process undertaken recently. The reductions made are consistent with the cessation of sampling by the end of Y4.

The Liberia team has modified their budget to the new cap. Details of Y5 activities are included in the attached justification; a modified workplan may be forthcoming.

- Please also note that your Admin and Global Core budgets went up by \$584K from last year, and you may be asked to reduce these costs in consideration of budgetary constraints.

Yes; this is consistent with our actual Year 4 costs to date and our anticipated costs to successfully implement the project in its final year.

On Thu, Aug 2, 2018 at 3:24 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Okay, thanks for the heads up.

---

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Thursday, August 2, 2018 12:18:23 PM

**To:** Elizabeth Leasure

**Cc:** Evelyn Luciano; Ava Sullivan; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking; Hannah R Chale

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

I forgot to mention -- WIV is revising their budget to more clearly indicate where the costs are for assay development for coronavirus serology, we'll have that to you tomorrow as well. The amount will remain the same.

On Thu, Aug 2, 2018 at 3:15 PM, Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)> wrote:

Hi Liz,

Thanks for the thorough review and corrections. I have addressed your comments in the attached.

Note that I deliberately omitted overhead on Arif and GuangJian as they are not included in this year's base for our NICRA. No contracts were signed with IMCAS or with Yunnan this year, which is why I've budgeted for IDC on the first \$25k of each. I have made both of these corrections in the attached.

All changes are highlighted.

Below is a brief justification from Billy as to why the Jordan and Egypt country budgets are proportional to budgets for other PREDICT countries in Asia and Africa.

We are working to prepare a justification for all countries that have budgeted for limited field sampling, which you will have tomorrow. Please note however that this was discussed on our 6/29 call with you and David and is included in the guidance doc that was shared with us.

As discussed, I will have the revised CDI budget to you on Monday. The CIV team has done some really great work in a short period and continues to do so, so it would be great if in your final number crunching we might be able to increase the funds allocated to this country and add back in some of the GHSA-supportive activities we had planned for.

Jim is working on Liberia and we'll have that to you tomorrow along with accompanying revised workplans (as necessary).

Thanks,  
Molly

From Billy:

PREDICT Egypt and Jordan are conducting surveillance for four of the five priority viral families among bats, camels (FAO), and humans as well as human antibodies for MERS Coronavirus. In total, both countries will have sampled more than 1,000 wild bats and 1,000 humans in the community, and both laboratories are working diligently to complete all laboratory work ahead of schedule, including advanced work such as further characterization of detected viruses. The potential for significant viral, serological, and epidemiological findings in Egypt and Jordan warrant a similar investment in Year 5 as Year 4. Egypt and Jordan were not designated as full-engagement countries but part of the MERS Crescent Countries, thus were not intended to conduct the full range of PREDICT 2 activities; however, many of the full suite of PREDICT activities are currently being conducted, and the the basic costs of working in these countries is high. PREDICT is additionally conducting in-country laboratory work, which is quite expensive.

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Thanks,  
Liz

Elizabeth Leasure  
Financial Operations Manager  
One Health Institute  
University of California, Davis  
Cell: **REDACTED**

---

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Thursday, August 2, 2018 7:10 AM

**To:** Elizabeth Leasure

**Cc:** Evelyn Luciano; Ava Sullivan; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking; Hannah R Chale

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hi Liz,

Working on it.

The CIV budgets and workplans will need to be revised in tandem in light of this new target and Anne Laudisoit who is managing the CIV project is out of the office until Monday, I'd like to work with her then on these materials and send to you by COB, hope that's OK. I've reached out to Jim about this turnaround for Liberia, hopefully he'll be able to provide feedback by Friday.

Thanks,  
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- Please reduce the CDI budget by a total of \$127K (inclusive of indirect costs). The CDI budget should not exceed \$370K.
- Please reduce the Liberia budget so that it does not exceed \$1.142M.

Thanks,

Liz

*Elizabeth Leasure*

*Financial Operations Manager*

*One Health Institute*

**REDACTED** *(cell)*

*530-754-9034 (office)*

*Skype: ealeasure*

---

**From:** [predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu) <[predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu)> **On Behalf Of** Elizabeth Leasure  
**Sent:** Tuesday, July 31, 2018 3:25 PM  
**To:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>  
**Subject:** [predict] Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hi Molly. Please find attached your Y5 budget with notes/question/revisions from my initial review. **Please address the items below (and comments noted in the spreadsheet attached) and resubmit your revised budget and the requested information/clarification by COB on Friday, August 3<sup>rd</sup>.**

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Please let me know if you have any questions.

Thanks,

Liz

*Elizabeth Leasure*

*Financial Operations Manager*

*One Health Institute*

**REDACTED** *(cell)*

*530-754-9034 (office)*

*Skype: ealeasure*

--

**Molly Turner**

*Federal Grants Coordinator*

*EcoHealth Alliance Operations*

EcoHealth Alliance

[460 West 34th Street – 17th floor](#)  
[New York, NY 10001](#)

1.212.380.4461 (direct)  
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[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.*

--

**Molly Turner**

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produced in native format

**From:** predict-request@ucdavis.edu on behalf of "Elizabeth Leasure" <ealeasure@ucdavis.edu>  
**Sent:** 08/07/2018 8:35:58 AM (-07:00)  
**To:** "Molly Turner" <turner@ecohealthalliance.org>  
**Cc:** "Evelyn Luciano" <luciano@ecohealthalliance.org>; "Ava Sullivan" <sullivan@ecohealthalliance.org>; "predict@ucdavis.edu" <predict@ucdavis.edu>; "David John Wolking" <djwolking@ucdavis.edu>; "Hannah R Chale" <hrchale@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** [predict] RE: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Thanks, Molly!

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*

REDACTED (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <turner@ecohealthalliance.org>  
**Sent:** Tuesday, August 7, 2018 8:29 AM  
**To:** Elizabeth Leasure <ealeasure@UCDAVIS.EDU>  
**Cc:** Evelyn Luciano <luciano@ecohealthalliance.org>; Ava Sullivan <sullivan@ecohealthalliance.org>; predict@ucdavis.edu; David John Wolking <djwolking@ucdavis.edu>; Hannah R Chale <hrchale@UCDAVIS.EDU>; Peter Daszak <daszak@ecohealthalliance.org>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Attached.

Changes to the Malaysia, Bangladesh, Jordan, and Liberia tabs highlighted in green.

Some minor changes to Thailand, Global/Admin, India, Indonesia, and China (mostly to travel) also highlighted.

Thanks,  
Molly

On Mon, Aug 6, 2018 at 8:15 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. There were some additional formula errors identified when I reviewed your revised budget, and now the core portion of your budget needs to be cut by \$69,287 in order to not exceed your core budget from last year. Please revise and send to me by noon tomorrow.

Please revise the spreadsheet attached.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*

REDACTED (cell)  
530-754-9034 (office)  
Skype: ealeasure

---

**From:** Elizabeth Leasure  
**Sent:** Monday, August 6, 2018 1:21 PM  
**To:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@ucdavis.edu](mailto:hrchale@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** RE: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Thanks, Molly. If I have any questions, I'll follow up.

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Monday, August 6, 2018 1:07 PM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Budget revised to accommodate Ebola caps attached. As you can see we didn't make reductions to the CIV budget but rather to the Global costs put towards Ebola, so no revisions to the CIV workplans required.

The Liberia budget is also now largely the same as what was originally submitted, but I addressed the issue of procurement in the attached revised workplan.

Our overall Ebola budget has now been reduced by \$268,593, as requested. I confess I still don't really understand these caps, but I am assuming that this is OK. If not let me know and we can be ready to reduce by country budget.

NB this required further revision to our core costs, as I previously mentioned, as well as specifically to the Jordan budget.

Cheers,  
Molly

On Fri, Aug 3, 2018 at 2:31 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Okay, that's fine

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Friday, August 3, 2018 10:37 AM

**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>

**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrenchale@UCDAVIS.EDU](mailto:hrenchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Just clarifying -- that's the Liberia workplans that may come in on Monday along with revised CIV materials.

On Fri, Aug 3, 2018 at 1:36 PM, Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)> wrote:

OK, thanks. We'll see how it goes on Monday.

On Fri, Aug 3, 2018 at 1:35 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Thanks, Molly. If you want to rework your Global costs to free up funds for CIV and see how that works out, feel free. No problem about CIV coming in on Monday.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
REDACTED (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Friday, August 3, 2018 10:32 AM

**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>

**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrenchale@UCDAVIS.EDU](mailto:hrenchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hello Liz,

Attached is a final revised budget addressing your China comments and incorporating a revised Liberia budget, as well as some further revisions to our global costs. Also attached is an explanation of the limited field activities that have been budgeted for in a few countries.

I am checking with Jim as to what if anything will need to be revised in the workplans in light of this new budget, at this point however it is looking like that will need to come on Monday with the CIV materials, hope that's OK.

I had a thought about CIV. It seems to me that our global costs might be a little disproportionately weighted towards Liberia and CIV with the current breakdown. Would it be possible to reduce that

proportion, so as to free up more CIV-specific Ebola funds? I realize this would entail some substantial revision to our core costs to accommodate funds formerly budgeted for Ebola work, but if this is a possibility I'd be happy to work as quickly as I can to see if we can make it work. I'll also see what Anne says on Monday in terms of what can be done in light of this cap, and of course see if there's anywhere in the CIV budget where we can reduce without upsetting anyone.

Finally, answers to your comments in the email body below.

Cheers,  
Molly

- There were some formula errors that resulted in increased costs in some countries, so please revise your core budget to get back down to the \$8,282,185 target.

Addressed in previous message and in the attached.

- There were several countries that budgeted for continued sampling in Y5, which is contradictory to previous guidance to wrap up sampling by the end of Y4. If there are special circumstances at play that you believe warrant inclusion of sampling activities in Y5, please provide an explanation so those costs can be considered when Jonna conducts her PI review.

Attached, and addressed on 6/29 call and in "P2 Y5 Workplan and Sustainability Guidance (June 2018) final"

- Clarification of how many samples are budgeted for testing in Y5 is needed for some countries (which are noted in the spreadsheet attached).

Addressed in the attached.

- Please note that the Liberia budget was reduced (changed cells highlighted) as part of the cap revision process undertaken recently. The reductions made are consistent with the cessation of sampling by the end of Y4.

The Liberia team has modified their budget to the new cap. Details of Y5 activities are included in the attached justification; a modified workplan may be forthcoming.

- Please also note that your Admin and Global Core budgets went up by \$584K from last year, and you may be asked to reduce these costs in consideration of budgetary constraints.

Yes; this is consistent with our actual Year 4 costs to date and our anticipated costs to successfully implement the project in its final year.

On Thu, Aug 2, 2018 at 3:24 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Okay, thanks for the heads up.

---

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Thursday, August 2, 2018 12:18:23 PM

**To:** Elizabeth Leasure

**Cc:** Evelyn Luciano; Ava Sullivan; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking; Hannah R Chale

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

I forgot to mention -- WIV is revising their budget to more clearly indicate where the costs are for assay development for coronavirus serology, we'll have that to you tomorrow as well. The amount will remain the same.

On Thu, Aug 2, 2018 at 3:15 PM, Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)> wrote:

Hi Liz,

Thanks for the thorough review and corrections. I have addressed your comments in the attached.

Note that I deliberately omitted overhead on Arif and GuangJian as they are not included in this year's base for our NICRA. No contracts were signed with IMCAS or with Yunnan this year, which is why I've budgeted for IDC on the first \$25k of each. I have made both of these corrections in the attached.

All changes are highlighted.

Below is a brief justification from Billy as to why the Jordan and Egypt country budgets are proportional to budgets for other PREDICT countries in Asia and Africa.

We are working to prepare a justification for all countries that have budgeted for limited field sampling, which you will have tomorrow. Please note however that this was discussed on our 6/29 call with you and David and is included in the guidance doc that was shared with us.

As discussed, I will have the revised CDI budget to you on Monday. The CIV team has done some really great work in a short period and continues to do so, so it would be great if in your final number crunching we might be able to increase the funds allocated to this country and add back in some of the GHSA-supportive activities we had planned for.

Jim is working on Liberia and we'll have that to you tomorrow along with accompanying revised workplans (as necessary).

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Molly

From Billy:

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Thanks,  
Liz

Elizabeth Leasure  
Financial Operations Manager  
One Health Institute  
University of California, Davis  
Cell: **REDACTED**

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**Sent:** Thursday, August 2, 2018 7:10 AM

**To:** Elizabeth Leasure

**Cc:** Evelyn Luciano; Ava Sullivan; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking; Hannah R Chale

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hi Liz,

Working on it.

The CIV budgets and workplans will need to be revised in tandem in light of this new target and Anne Laudoit who is managing the CIV project is out of the office until Monday, I'd like to work with her then on these materials and send to you by COB, hope that's OK. I've reached out to Jim about this turnaround for Liberia, hopefully he'll be able to provide feedback by Friday.

Thanks,  
Molly

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Thanks,

Liz



*Elizabeth Leasure*

*Financial Operations Manager*

*One Health Institute*

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*530-754-9034 (office)*

*Skype: ealeasure*

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**From:** [predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu) <[predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu)> **On Behalf Of**  
Elizabeth Leasure  
**Sent:** Tuesday, July 31, 2018 3:25 PM  
**To:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan  
<[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking  
<[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>  
**Subject:** [predict] Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by  
COB)

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Please let me know if you have any questions.

Thanks,

Liz

*Elizabeth Leasure*

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Skype: ealeasure

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**Molly Turner**

*Federal Grants Coordinator*

*EcoHealth Alliance Operations*

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1.212.380.4461 (direct)  
**REDACTED** (cell)  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.*

--

**Molly Turner**  
*Federal Grants Coordinator*  
*EcoHealth Alliance Operations*

EcoHealth Alliance  
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*EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.*

**From:** predict-request@ucdavis.edu on behalf of "Moctar Mouiche" [REDACTED]  
**Sent:** 08/16/2018 2:16:41 PM (-07:00)  
**To:** "matthew lebreton" [REDACTED]; "Karen Saylor" <ksaylor@metabiota.com>; "Beth Edison" <bedison@metabiota.com>; "David McIver" <dmciver@metabiota.com>  
**Cc:** predict@ucdavis.edu  
**Subject:** [predict] Fwd: Invitation: Meeting with Carell Laurent, USAID Cameroon Principal Officer

FYI

----- Forwarded message -----

**From:** Prudentia Loh <[ploh@usaid.gov](mailto:ploh@usaid.gov)>  
**Date:** Thu, Aug 16, 2018 at 5:11 PM  
**Subject:** Invitation: Meeting with Carell Laurent, USAID Cameroon Principal Officer  
**To:** [REDACTED] [utamoufe@metabiota.com](mailto:utamoufe@metabiota.com),  
[REDACTED]  
**Cc:** Stephen Wazeh <[swazeh@usaid.gov](mailto:swazeh@usaid.gov)>, Mounkaila Abdou Billo <[mbillo@usaid.gov](mailto:mbillo@usaid.gov)>

Dear partners,

USAID/Cameroon Principal Officer Carrell Laurent is requesting your attendance at a USAID implementing partners meeting on Monday, August 27 from 10:00 am- 11:00 am at the U.S. Embassy.

With regards to the meeting agenda, and in order to structure the discussion, we would like to suggest the following topics:

- Operating environment
- Challenges faced by partners
- USAID's strategic focus in Cameroon

It is our hope that sending the above-mentioned topics ahead of the meeting would allow you to come prepared to contribute to the discussion. Please note that these topics are not an exhaustive list of themes that should be discussed. They are meant as suggestions to ensure a productive dialogue. Please free, however, to raise any topics during the meeting that you deem important to discuss and/or for the group's awareness.

If you are able to attend, please RSVP by return e-mail to me ([Ploh@usaid.gov](mailto:Ploh@usaid.gov)) by 5pm on Monday, August 20th. In your RSVP, please include the name and position of your nominated attendees. We strongly recommend that you nominate no more than two representatives from your organization, preferably people in leadership positions.

Please note that we will not be able to secure vehicle access to the Embassy compound, and no electronics will be allowed past the Embassy's screening area. If you bring electronics, please note that these items can be retrieved from the screening office following the meeting.

We look forward to hearing from you.

Best Regards

--

*Prudentia L Njung*

**Executive Specialist**  
**US Agency for International Development/WA**  
**Cameroon Office**  
Tel: [REDACTED]

**From:** "Elizabeth Leasure" <ealeasure@UCDAVIS.EDU>  
**Sent:** 08/23/2018 8:18:47 AM (-07:00)  
**To:** "Molly Turner" <turner@ecohealthalliance.org>  
**Cc:** "Evelyn Luciano" <luciano@ecohealthalliance.org>; "Ava Sullivan" <sullivan@ecohealthalliance.org>; "Predict inbox" <predict@ucdavis.edu>; "David John Wolking" <djwolking@ucdavis.edu>; "Hannah R Chale" <hrchale@UCDAVIS.EDU>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** RE: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Thanks!

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <turner@ecohealthalliance.org>  
**Sent:** Thursday, August 23, 2018 7:12 AM  
**To:** Elizabeth Leasure <ealeasure@UCDAVIS.EDU>  
**Cc:** Evelyn Luciano <luciano@ecohealthalliance.org>; Ava Sullivan <sullivan@ecohealthalliance.org>; Predict inbox <predict@ucdavis.edu>; David John Wolking <djwolking@ucdavis.edu>; Hannah R Chale <hrchale@UCDAVIS.EDU>; Jonna Mazet <jkmazet@ucdavis.edu>; Peter Daszak <daszak@ecohealthalliance.org>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

OK. Attached.

On Wed, Aug 22, 2018 at 8:42 PM Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. I was under the impression that the GVP budget you initially submitted was what you needed to implement planned Y5 activities, so the rest of the GVP funds have been programmed (as I noted previously when discussing the GVP Beijing meeting funds).

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

---

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Wednesday, August 22, 2018 3:24 PM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; Predict inbox <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>; David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)



Hi Liz,

I brought it back up to year 4 levels as I was revising, is there a reason we're being asked to reduce from last year?

Molly

On Aug 22, 2018, at 6:03 PM, Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)> wrote:

Hi Molly. Your changes to the Core and Ebola budgets are fine, but please revise the GVP budget to bring it back down to \$258,624 and resend. The Jordan Mission budget also looks fine.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
REDACTED (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Wednesday, August 22, 2018 12:58 PM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; Predict inbox <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>; David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Attached. Changes are highlighted in purple.

On Wed, Aug 22, 2018 at 2:33 PM Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. Your core budget can absolutely not exceed \$2,282,185, nor should your Ebola budget exceed \$2,092,196. Please revise to bring your core and Ebola budgets back down to the figures noted above and resubmit by COB PT today.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
REDACTED (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Tuesday, August 21, 2018 2:11 PM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>;

[predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hi Liz,

Responses below. A final core and a Mission budget attached are attached -- all changes to the former are highlighted in red.

Cheers,  
Molly

Hi Molly. During the 2<sup>nd</sup> phase of review for your Y5 budget, the items below were identified as requiring further justification/clarification or revision. **Please address the items below and provide a response and revised budget by COB on Tuesday, August 21<sup>st</sup>**. Please also note that we have received confirmation of \$200,000 in Mission funding for Jordan. **Can you please provide a separate budget for this \$200K by August 21<sup>st</sup>, as well?** Let me know if you have any questions. Thanks!

Global:

- Please provide justification for the increased LOEs for Carlos Zambrana-Torrel and Allison White, whose LOE's increased by 41% and 60% respectively from Y4. Assuming the justification for the increased LOEs is sufficient, we suggesting reducing/removing the TBN positions to cover the additional cost of the increased LOEs.

We have allocated additional time for Carlos Zambrana-Torrel to coordinate M&A in-country capacity building work (R and GIS trainings etc.) in China, Malaysia, and Liberia/Côte d'Ivoire. In addition, he will be committing time to both the African Sustainable Livestock and Deep Forest analyses.

Allison White will also be working on Deep Forest, as well as other M&A analyses and peer-reviewed paper writing.

We respectfully request not to reduce or remove the TBN positions as both are needed in Year 5 for final analysis of data.

- Please explain the 24% increase in the amount budgeted for Peter's effort on the project. The LOE hasn't changed from Y4, but the total cost has increased dramatically.

The \$23K increase in personnel costs for Peter in the Global tab is a function of an overall 5% cost of living increase compounded by a 4% (closer to 5%) LOE increase in the Global tab in the Ebola and Core columns and an error in the Year 4 fringe calculation.

Peter's overall LOE on the project has decreased from 47 to 40%. In tandem with a 5% cost of living increase, the corresponding reduction in salary is on about \$15K, or a 11% overall decrease (from \$145,700 to \$130,200 total).

- Please reduce Billy's FAO/OIE/WHO meeting travel, as this line item more than doubled from the Y4 budget.

We respectfully request not to reduce this budgeted amount, as these costs are essential for project implementation and EPT liaison activities.

EPT liaison travel in Y4 was budgeted at ~\$45k, but part (~50%) was allocated to cost share. This year we have budgeted at only \$26k for EPT liaison travel, which is a ~50% reduction and covers the cost of only four trips.

- Please clearly explain how you arrived at the \$50,000 figure for the acquisition of AMR datasets. What is this estimate based on?

Our goal is to trial AMR testing on PREDICT samples from macaques and bats from Bangladesh. We have a quote from a potential lab partner for ~\$50k for DNA Isolation, 40M SE150 Reads, Sequencing, Individual QC, Sample Preparation, Library Preparation, Metagenomic Analysis, and Comparative Analysis for 70 samples.

#### Bangladesh:

- In the justification provided for Bangladesh, you indicated that critical sampling team members would be retained for data cleaning and analysis, however retaining key field staff is quite different than adding personnel in the final year of the project. In the icddr,b subaward budget, salaries have gone from \$40K in Y4 to \$80K in Y5 and there are several new research officers that have been added. Please explain why this is the case, as your budget should reflect that activities are winding down, not scaling up.
- The LOEs for the PI and Co-PI have increased markedly from Y4. Please provide justification for the increased LOEs for these positions.

Icddr,b our in-country diagnostic testing lab. LOEs have been increased and new techs hired to facilitate testing of all collected samples by the March 2019 deadline.

#### China:

- As noted above, in the final year of the project, activities should be winding down. In the justification you provided for China, you indicate that an additional 200 bats and 200 rodents will be sampled from pig farms and bat sites. Can you please clarify when this sampling will be completed and confirm that testing of these samples will be completed by March 2019? All testing of samples should be completed by the end of March 2019 to ensure sufficient time for analysis and required closeout reporting.

-Sampling and other field activities will be completed by the end of October 2018

-All sample testing will be completed by the end of March 2019

#### Egypt:

- Can you please explain why the diagnostic budget for testing in Egypt has more than doubled from last year?

This is the cost associated with completing all testing of collected samples by March 2019.

#### India:

- With regard to the contract budgeted for Harjeet Mann, can please clarify if he is planning on leaving his position with SGPGIMS in order for you to establish this contract for Y5? Jonna has clarified why this type of mechanism is necessary, but we still need to ensure that the arrangement does not result in the payment of salary supplements, which is a concern if this person is going to retain any form of employment at SGPGIMS. This would also apply to any other positions to be paid through this contract. Please clarify the situation.

- Please remember that in order for GST to be an allowable cost, you have to sufficiently document that there is no exemption available to you or that the reimbursement/refund process does not work or was denied.

-During the time he is contracted with PREDICT, Harjeet will not be employed by SGPGIMS. The two additional lab techs hired through this arrangement are also not receiving any additional salary from SGPGIMS during their time with PREDICT.

-The USAID Mission in India has confirmed that there is no GST exemption available for USAID projects; reimbursement is available only for GST paid on supplies, making GST associated with consultancy services an allowable cost.

Malaysia:

- Please clarify the number of sampling trips planned and the timeline for completion. Please also confirm that testing of all these samples will be completed by March 2019. All testing of samples should be completed by the end of March 2019 to ensure sufficient time for analysis and required closeout reporting.

Two additional sampling trips are planned in October and November of 2018, in order to have equal sampling effort at both Deep Forest sampling sites. This sampling will be completed by the end of December 2018.

All testing will be completed by March 2019.

On Thu, Aug 16, 2018 at 1:30 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. During the 2<sup>nd</sup> phase of review for your Y5 budget, the items below were identified as requiring further justification/clarification or revision. **Please address the items below and provide a response and revised budget by COB on Tuesday, August 21<sup>st</sup>.** Please also note that we have received confirmation of \$200,000 in Mission funding for Jordan. **Can you please provide a separate budget for this \$200K by August 21<sup>st</sup>, as well?** Let me know if you have any questions. Thanks!

Global:

- Please provide justification for the increased LOEs for Carlos Zambrana-Torrel and Allison White, whose LOE's increased by 41% and 60% respectively from Y4. Assuming the justification for the increased LOEs is sufficient, we suggesting reducing/removing the TBN positions to cover the additional cost of the increased LOEs.
- Please explain the 24% increase in the amount budgeted for Peter's effort on the project. The LOE hasn't changed from Y4, but the total cost has increased dramatically.
- Please reduce Billy's FAO/OIE/WHO meeting travel, as this line item more than doubled from the Y4 budget.
- Please clearly explain how you arrived at the \$50,000 figure for the acquisition of AMR datasets. What is this estimate based on?

Bangladesh:

- In the justification provided for Bangladesh, you indicated that critical sampling team members would be retained for data cleaning and analysis, however retaining key field staff is quite different than adding personnel in the final year of the project. In the icddr,b subaward budget, salaries have gone from \$40K in Y4 to \$80K in Y5 and there are several new research officers that have been added. Please explain why this is the case, as your budget should reflect that activities are winding down, not scaling up.
- The LOEs for the PI and Co-PI have increased markedly from Y4. Please provide justification for the increased LOEs for these positions.

China:

- As noted above, in the final year of the project, activities should be winding down. In the justification you provided for China, you indicate that an additional 200 bats and 200 rodents will be sampled from pig farms and bat sites. Can you please clarify when this sampling will be completed and confirm that testing of these samples will be completed by March 2019? All testing of samples should be completed by the end of March 2019 to ensure sufficient time for analysis and required closeout reporting.

Egypt:

- Can you please explain why the diagnostic budget for testing in Egypt has more than doubled from last year?

India:

- With regard to the contract budgeted for Harjeet Mann, can please clarify if he is planning on leaving his position with SGPGIMS in order for you to establish this contract for Y5? Jonna has clarified why this type of mechanism is necessary, but we still need to ensure that the arrangement does not result in the payment of salary supplements, which is a concern if this person is going to retain any form of employment at SGPGIMS. This would also apply to any other positions to be paid through this contract. Please clarify the situation.
- Please remember that in order for GST to be an allowable cost, you have to sufficiently document that there is no exemption available to you or that the reimbursement/refund process does not work or was denied.

Malaysia:

- Please clarify the number of sampling trips planned and the timeline for completion. Please also confirm that testing of all these samples will be completed by March 2019. All testing of samples should be completed by the end of March 2019 to ensure sufficient time for analysis and required closeout reporting.

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
**REDACTED** (cell)

530-754-9034 (office)

Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Tuesday, August 7, 2018 8:29 AM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Attached.

Changes to the Malaysia, Bangladesh, Jordan, and Liberia tabs highlighted in green.

Some minor changes to Thailand, Global/Admin, India, Indonesia, and China (mostly to travel) also highlighted.

Thanks,  
Molly

On Mon, Aug 6, 2018 at 8:15 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. There were some additional formula errors identified when I reviewed your revised budget, and now the core portion of your budget needs to be cut by \$69,287 in order to not exceed your core budget from last year. Please revise and send to me by noon tomorrow.

Please revise the spreadsheet attached.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

---

**From:** Elizabeth Leasure  
**Sent:** Monday, August 6, 2018 1:21 PM  
**To:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@ucdavis.edu](mailto:hrchale@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>  
**Subject:** RE: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Thanks, Molly. If I have any questions, I'll follow up.

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*

**REDACTED** (cell)

530-754-9034 (office)

Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Monday, August 6, 2018 1:07 PM

**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>

**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Budget revised to accommodate Ebola caps attached. As you can see we didn't make reductions to the CIV budget but rather to the Global costs put towards Ebola, so no revisions to the CIV workplans required.

The Liberia budget is also now largely the same as what was originally submitted, but I addressed the issue of procurement in the attached revised workplan.

Our overall Ebola budget has now been reduced by \$268,593, as requested. I confess I still don't really understand these caps, but I am assuming that this is OK. If not let me know and we can be ready to reduce by country budget.

NB this required further revision to our core costs, as I previously mentioned, as well as specifically to the Jordan budget.

Cheers,  
Molly

On Fri, Aug 3, 2018 at 2:31 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Okay, that's fine

*Elizabeth Leasure*

*Financial Operations Manager*

*One Health Institute*

**REDACTED** (cell)

530-754-9034 (office)

Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Friday, August 3, 2018 10:37 AM

**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>

**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Just clarifying -- that's the Liberia workplans that may come in on Monday along with revised CIV materials.

On Fri, Aug 3, 2018 at 1:36 PM, Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)> wrote:  
OK, thanks. We'll see how it goes on Monday.

On Fri, Aug 3, 2018 at 1:35 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:  
Thanks, Molly. If you want to rework your Global costs to free up funds for CIV and see how that works out, feel free. No problem about CIV coming in on Monday.

Thanks,  
Liz

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*  
[REDACTED] (cell)  
530-754-9034 (office)  
Skype: ealeasure

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Sent:** Friday, August 3, 2018 10:32 AM  
**To:** Elizabeth Leasure <[ealeasure@UCDAVIS.EDU](mailto:ealeasure@UCDAVIS.EDU)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hello Liz,

Attached is a final revised budget addressing your China comments and incorporating a revised Liberia budget, as well as some further revisions to our global costs. Also attached is an explanation of the limited field activities that have been budgeted for in a few countries.

I am checking with Jim as to what if anything will need to be revised in the workplans in light of this new budget, at this point however it is looking like that will need to come on Monday with the CIV materials, hope that's OK.

I had a thought about CIV. It seems to me that our global costs might be a little disproportionately weighted towards Liberia and CIV with the current breakdown. Would it be possible to reduce that proportion, so as to free up more CIV-specific Ebola funds? I realize this would entail some substantial revision to our core costs to accommodate funds formerly budgeted for Ebola work, but if this is a possibility I'd be happy to work as quickly as I can to see if we can make it work. I'll also see what Anne says on Monday in terms of what can be done in light of



this cap, and of course see if there's anywhere in the CIV budget where we can reduce without upsetting anyone.

Finally, answers to your comments in the email body below.

Cheers,  
Molly

- There were some formula errors that resulted in increased costs in some countries, so please revise your core budget to get back down to the \$8,282,185 target.

Addressed in previous message and in the attached.

- There were several countries that budgeted for continued sampling in Y5, which is contradictory to previous guidance to wrap up sampling by the end of Y4. If there are special circumstances at play that you believe warrant inclusion of sampling activities in Y5, please provide an explanation so those costs can be considered when Jonna conducts her PI review.

Attached, and addressed on 6/29 call and in "P2 Y5 Workplan and Sustainability Guidance (June 2018) final"

- Clarification of how many samples are budgeted for testing in Y5 is needed for some countries (which are noted in the spreadsheet attached).

Addressed in the attached.

- Please note that the Liberia budget was reduced (changed cells highlighted) as part of the cap revision process undertaken recently. The reductions made are consistent with the cessation of sampling by the end of Y4.

The Liberia team has modified their budget to the new cap. Details of Y5 activities are included in the attached justification; a modified workplan may be forthcoming.

- Please also note that your Admin and Global Core budgets went up by \$584K from last year, and you may be asked to reduce these costs in consideration of budgetary constraints.

Yes; this is consistent with our actual Year 4 costs to date and our anticipated costs to successfully implement the project in its final year.

On Thu, Aug 2, 2018 at 3:24 PM, Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Okay, thanks for the heads up.

---

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Thursday, August 2, 2018 12:18:23 PM

**To:** Elizabeth Leasure

**Cc:** Evelyn Luciano; Ava Sullivan; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking; Hannah R Chale

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

I forgot to mention -- WIV is revising their budget to more clearly indicate where the costs are for assay development for coronavirus serology, we'll have that to you tomorrow as well. The amount will remain the same.

On Thu, Aug 2, 2018 at 3:15 PM, Molly Turner

<[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)> wrote:

Hi Liz,

Thanks for the thorough review and corrections. I have addressed your comments in the attached.

Note that I deliberately omitted overhead on Arif and GuangJian as they are not included in this year's base for our NICRA. No contracts were signed with IMCAS or with Yunnan this year, which is why I've budgeted for IDC on the first \$25k of each. I have made both of these corrections in the attached.

All changes are highlighted.

Below is a brief justification from Billy as to why the Jordan and Egypt country budgets are proportional to budgets for other PREDICT countries in Asia and Africa.

We are working to prepare a justification for all countries that have budgeted for limited field sampling, which you will have tomorrow. Please note however that this was discussed on our 6/29 call with you and David and is included in the guidance doc that was shared with us.

As discussed, I will have the revised CDI budget to you on Monday. The CIV team has done some really great work in a short period and continues to do so, so it would be great if in your final number crunching we might be able to increase the funds allocated to this country and add back in some of the GHSA-supportive activities we had planned for.

Jim is working on Liberia and we'll have that to you tomorrow along with accompanying revised workplans (as necessary).

Thanks,  
Molly

From Billy:

PREDICT Egypt and Jordan are conducting surveillance for four of the five priority viral families among bats, camels (FAO), and humans as well as human antibodies for MERS Coronavirus. In total, both countries will have sampled more than 1,000 wild bats and 1,000 humans in the community, and both laboratories are working diligently to complete all laboratory work ahead of schedule, including advanced work such as further characterization of detected viruses. The potential for significant viral, serological, and epidemiological findings in Egypt and Jordan warrant a similar investment in Year 5 as Year

4. Egypt and Jordan were not designated as full-engagement countries but part of the MERS Crescent Countries, thus were not intended to conduct the full range of PREDICT 2 activities; however, many of the full suite of PREDICT activities are currently being conducted, and the the basic costs of working in these countries is high. PREDICT is additionally conducting in-country laboratory work, which is quite expensive.

On Thu, Aug 2, 2018 at 11:46 AM, Elizabeth Leasure  
<[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. Yes, COB Monday is fine for Côte d'Ivoire, but please still submit the rest of the budget by COB Friday.

Thanks,  
Liz

Elizabeth Leasure  
Financial Operations Manager  
One Health Institute  
University of California, Davis  
Cell: **REDACTED**

---

**From:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>

**Sent:** Thursday, August 2, 2018 7:10 AM

**To:** Elizabeth Leasure

**Cc:** Evelyn Luciano; Ava Sullivan; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking; Hannah R Chale

**Subject:** Re: Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hi Liz,

Working on it.

The CIV budgets and workplans will need to be revised in tandem in light of this new target and Anne Laudisoit who is managing the CIV project is out of the office until Monday, I'd like to work with her then on these materials and send to you by COB, hope that's OK. I've reached out to Jim about this turnaround for Liberia, hopefully he'll be able to provide feedback by Friday.

Thanks,  
Molly

On Tue, Jul 31, 2018 at 6:57 PM, Elizabeth Leasure  
<[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)> wrote:

Hi Molly. My apologies, but I forgot to note the following:

- Please reduce the CDI budget by a total of \$127K (inclusive of indirect costs). The CDI budget should not exceed \$370K.
- Please reduce the Liberia budget so that it does not exceed \$1.142M.

Thanks,

Liz

*Elizabeth Leasure*

*Financial Operations Manager*

*One Health Institute*

**REDACTED** (cell)

530-754-9034 (office)

Skype: ealeasure

---

**From:** [predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu) <[predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu)>  
**On Behalf Of** Elizabeth Leasure  
**Sent:** Tuesday, July 31, 2018 3:25 PM  
**To:** Molly Turner <[turner@ecohealthalliance.org](mailto:turner@ecohealthalliance.org)>  
**Cc:** Evelyn Luciano <[luciano@ecohealthalliance.org](mailto:luciano@ecohealthalliance.org)>; Ava Sullivan <[sullivan@ecohealthalliance.org](mailto:sullivan@ecohealthalliance.org)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu); David John Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Hannah R Chale <[hrchale@UCDAVIS.EDU](mailto:hrchale@UCDAVIS.EDU)>  
**Subject:** [predict] Y5 PREDICT budget: Review and Revision Needed (due Aug 3rd by COB)

Hi

--  
**Molly Turner**  
*Federal Grants Coordinator*  
*EcoHealth Alliance Operations*

EcoHealth Alliance  
460 West 34th Street – 17th floor  
New York, NY 10001

1.212.380.4461 (direct)

REDACTED (cell)

[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.*

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 09/10/2018 2:06:31 PM (-07:00)  
**To:** "Valitutto, Marc" <ValituttoM@si.edu>  
**Cc:** "David J Wolking" <djwolking@ucdavis.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Suzan Murray" <MurrayS@si.edu>; "Predict inbox" <predict@ucdavis.edu>; "Eunah Regina Cho" <eecho@ucdavis.edu>  
**Subject:** Re: Run of show for next week

Thanks very much, Marc -- a couple of minor suggestions.

Let's say "...sharing with you our impact thus far and new developments from USAID's PREDICT Project..." in that first sentence.

I think maybe we should get rid of the webcast stuff on this email confirmation, as we don't want to lose any of the RSVP'd guests at the last minute to the webcast. So, maybe we could get rid of #3, moving the elevator piece to the last bullet of #2? No need to mention refreshments, since it will be minimal.

We should get a separate email together to send to late RSVPs with the webcast info.

Sorry for all of the work,  
Jonna

On Mon, Sep 10, 2018 at 12:44 PM Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)> wrote:

Please review as needed. RSVP list updated, attached.

---

Dear Guests,

We are looking forward to sharing with you our progress for USAID's PREDICT Project on September 12<sup>th</sup> at 1 PM.

Thank you for taking the time to RSVP.

Below includes some logistical information for your consideration:

1. LOCATION: Smithsonian Castle, SI 384 (3<sup>rd</sup> floor library). 1000 Jefferson Dr, SW.

- a. You will need to check in at the security desk for a visitor badge if you are not a Smithsonian employee. Please bring a valid form of identification.
- b. All non-Smithsonian guests will need to be accompanied to the library by a Smithsonian employee. A representative from the SI Global Health Program will be stationed at the security desk to usher you to the room. Please arrive early, as a representative will only be available until about 1:15 pm.

2. DIRECTIONS:

- a. Entrance: Fastest entrance on the Jefferson St side, but may also enter on Independence Ave side following a brief walk through the Enid A. Haupt Garden.
- b. Public Transportation: (advised), Take the Metro to the Smithsonian Station stop on the blue, orange, or silver lines for fastest walk, or the L'Enfant Plaza Station on the green and yellow lines. Follow signs for the Smithsonian Castle upon exiting the Metro.
- c. Driving: Please consider public transportation as parking is limited to street meter availability with local regulations enforced.

3. OTHER:

- a. The event will be available via webcast for those who could not attend (DAVID – share link)
- b. Refreshments (coffee/ water) will be served.
- c. Elevator available as needed

---

**From:** Valitutto, Marc

**Sent:** Monday, September 10, 2018 3:16 PM

**To:** 'Jonna Mazet' <[jkamazet@ucdavis.edu](mailto:jkamazet@ucdavis.edu)>; David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>

**Cc:** Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Murray, Suzan <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Predict inbox <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>; Eunah Regina Cho <[eecho@ucdavis.edu](mailto:eecho@ucdavis.edu)>

**Subject:** RE: Run of show for next week

OK, I will work on something.

Thanks all,

Marc

**From:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Sent:** Monday, September 10, 2018 3:15 PM  
**To:** David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>  
**Cc:** Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; Murray, Suzan <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Predict inbox <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>; Eunah Regina Cho <[eecho@ucdavis.edu](mailto:eecho@ucdavis.edu)>  
**Subject:** Re: Run of show for next week

Yes, sounds like a good idea. USAID and SI coordinated last time on the logistics, so I don't think we had the text put together on the confirmation email.

Sorry not to have that, but I'm thinking the wording would have been generated by SI.

J

On Mon, Sep 10, 2018 at 7:45 AM David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)> wrote:

Hi Jonna and team,

What do you think of Marc's message below? Think we should develop a targeted email to all of those that RSVP'd for the event with instructions and follow-up info? If so we can work on something to go out tomorrow early AM and I can coordinate with Marc. Not sure what you did for the last one but seems like a good idea.

Standing by for any other needs, I'm at a conference all day today but can work more on this tomorrow for any last minute needs pre-event.

Travel safe to those on the move....

David

----- Forwarded message -----  
**From:** Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>  
**Date:** Mon, Sep 10, 2018 at 7:20 AM  
**Subject:** RE: Run of show for next week  
**To:** David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>



Hey David,

Have you received any more RSVP's? I have not.

Would your team send an acknowledgement e-mail to all of those who RSVP'd with directions?

We can guide them to the entrance and there will be a SI Global Health Program rep available to guide them to the 3<sup>rd</sup> floor as they will not have access without a Smithsonian ID. I can get more specifics.

Refreshments will be available.

Thanks,

Marc

**From:** David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>

**Sent:** Friday, September 07, 2018 4:16 PM

**To:** Alisa Pereira Emerging Threats Division <[apereira@usaid.gov](mailto:apereira@usaid.gov)>; Cara J. Chrisman <[cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)>; Clements, Andrew (GH/HIDN) <[AClements@usaid.gov](mailto:AClements@usaid.gov)>; Amalhin Shek <[ashek@usaid.gov](mailto:ashek@usaid.gov)>

**Cc:** Prof. Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Elizabeth Leasure <[ealeasure@ucdavis.edu](mailto:ealeasure@ucdavis.edu)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; [predict@ucdavis.edu](mailto:predict@ucdavis.edu)

**Subject:** Re: Run of show for next week

Hey Alisa and team,

With the invite out now and program shared do you need anything else from us in prep for next week? Marc has sent me a list of items he is working on for next week's logistics (refreshments, AV, seating plans, wrapping up RSVPs, preparing webcast link, and helping Steve and Suzan prep for the welcome address). I've copied him here in case he has insight on any more "run of show" details but I expect the speakers will be handling the timing of the welcome and talks together soon (if not already underway).

Please reach out if we can do anymore to help you all prepare for Wednesday.

Enjoy the weekend,

David

On Thu, Sep 6, 2018 at 2:23 PM David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)> wrote:

Thanks Alisa, we've been developing a program and one final invitation blast to share today or tomorrow (as soon as Jonna can screen it). So far we have Richard listed on the welcome/opening remarks with Suzan Murray and Steven Monfort (Smithsonian). We'll be in touch ASAP with more details.

David

On Thu, Sep 6, 2018 at 1:58 PM Alisa Pereira <[apereira@usaid.gov](mailto:apereira@usaid.gov)> wrote:

Hi All.

Next week's event is coming up quickly. Richard is all set to give the opening remarks, but is asking what the "run of show" looks like including what you will be presenting, who else is opening, and anything, in particular, you would like him to focus on.

Thanks

alisa

**Alisa Pereira, Senior Public Health Advisor**

USAID, Contractor

Bureau for Global Health, Office of Infectious Disease, Emerging Threats Division

2100 Crystal Drive, CP3-0001, Arlington, VA 22202

Phone:202-997-9966

Email: [apereira@usaid.gov](mailto:apereira@usaid.gov)

*GHSI-III - Social Solutions International, Inc. prime contractor*

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 10/17/2018 9:14:47 AM (-07:00)  
**To:** "Leilani Francisco" <francisco@ecohealthalliance.org>  
**Cc:** "Emily Hagan" <hagan@ecohealthalliance.org>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** ppt file with a couple of pics  
**Attachments:** Community Engagement photos for Leilani.pptx

See attached.

Looking forward to receiving quarterly timeline with milestones & your PPFST slides.

Thanks for the meeting,

Jonna



Fig 2. Working to find creative solutions to mitigate outreach material printing issues



Figure 3. Mrogoro District meeting attendees



Figure 5. Outreach materials used in community education



Figure 5. Mwekoozi assisting with translation in Moko village, Chita ward

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 01/03/2019 10:08:11 PM (-08:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Follow up from "Application of the One Health Approach to Global Health Centers":  
Invitation to II Symposium on Emerging Viral Diseases in Geneva

Oy vey,  
J

On Thu, Jan 3, 2019 at 2:34 PM Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

...and guess who else will be there....your friend and mine, Eddie Holmes trying to sour the milk for us...

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor

New York, NY 10001

Tel. +1 212-380-4474

Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

**From:** Jonna Mazet [mailto:[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)]

**Sent:** Thursday, January 3, 2019 1:41 PM

**To:** Peter Daszak

**Cc:** Rafael Luis Ruiz De Castaneda; KAISER Laurent; Isabella Anne Eckerle; Antoine Flahault; Alison Andre; Catherine Machalaba

**Subject:** Re: Follow up from "Application of the One Health Approach to Global Health Centers": Invitation to II Symposium on Emerging Viral Diseases in Geneva

Great outcome!

Really nice to have connected with you, Rafael. Let me know if you need anything else & looking forward to future collaboration.

Wishing you all a fantastic 2019,

Jonna

[Jonna AK Mazet, DVM, MPVM, PhD](#)

Professor of Epidemiology & Disease Ecology

Executive Director, One Health Institute

Global Director, PREDICT Project of USAID Emerging Pandemic Threats Program

School of Veterinary Medicine

University of California

1089 Veterinary Medicine Drive

Davis, CA 95616, USA

+1-530-752-3630

[onehealthinstitute.net](http://onehealthinstitute.net)

For scheduling and logistical issues, please contact:

Ms. Brooke Genovese

[bgenovese@ucdavis.edu](mailto:bgenovese@ucdavis.edu)

[+1-530-752-3630](tel:+15307523630)

On Thu, Jan 3, 2019 at 9:43 AM Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

Dear Rafael and Antoine – just confirming that I will be able to give a talk at the symposium – I’ve cleared the dates in my calendar and look forward to seeing you all.

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor

New York, NY 10001

Tel. +1 212-380-4474

Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

---

**From:** Rafael Luis Ruiz De Castaneda [mailto:  
**Sent:** Wednesday, December 5, 2018 1:07 PM

**REDACTED**

**To:** Peter Daszak

**Cc:** KAISER Laurent; Isabella Anne Eckerle; Antoine Flahault; Alison Andre; Jonna Mazet; [REDACTED]  
Catherine Machalaba

**Subject:** RE: Follow up from "Application of the One Health Approach to Global Health Centers": Invitation to II Symposium on Emerging Viral Diseases in Geneva

Hi Peter,

No worries, I had great discussions with your team at EcoHealth Alliance yesterday.

Looking forward for your confirmation soon.

Best wishes,

Rafael

Join our MOOC on *Global Health at the Human-Animal-Ecosystem Interface*: [Teaser](#) & [Registration](#)

*Dr. Rafael Ruiz de Castañeda, PhD*

[REDACTED]

Mobile phone: + [REDACTED]

Skype: [REDACTED]



---

**De :** Peter Daszak [mailto:[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)]

**Envoyé :** mercredi 5 décembre 2018 18:32

**À :** Rafael Luis Ruiz De Castaneda <[REDACTED]>; Jonna Mazet

<[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> [REDACTED] Catherine Machalaba

<[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>

**Cc :** KAISER Laurent [REDACTED]; Isabella Anne Eckerle [REDACTED];

Antoine Flahault <[REDACTED]>; Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>

**Objet :** RE: Follow up from "Application of the One Health Approach to Global Health Centers":  
Invitation to II Symposium on Emerging Viral Diseases in Geneva

**Importance :** Haute

Hi Ruiz – sorry I missed you in NYC this week.



I actually got the invite a few weeks ago and have been waiting on one other meeting at WHO to see if it lines up. I think I'll be able to do it and will respond back to your other email or Antoine's to confirm by the end of next week at the latest.

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor

New York, NY 10001

Tel. +1 212-380-4474

Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

---

**From:** Rafael Luis Ruiz De Castaneda [mailto:REDACTED]  
**Sent:** Wednesday, December 5, 2018 9:56 AM  
**To:** Jonna Mazet; REDACTED Peter Daszak; Catherine Machalaba  
**Cc:** KAISER Laurent; Isabella Anne Eckerle; Antoine Flahault  
**Subject:** Follow up from "Application of the One Health Approach to Global Health Centers": Invitation to II Symposium on Emerging Viral Diseases in Geneva

Dear Peter, Jonna, Catherine,

Congratulations again for the great event on “[Application of the One Health Approach to Global Health Centers](#)”! @Catherine, I thank you very much for the invitation and also for the great visit and discussions with the team at *EcoHealth Alliance* yesterday afternoon. We have many common interests and we already identified together opportunities for collaborations in different areas (e.g. Carlos Zambrana-Torrel, Anne Laudisoit etc.). @Peter, it was a pity not meeting on this occasion. @Jonna, it was really a pleasure finally meeting you during the event and briefly discussing about our current and future work on emerging viral diseases in Geneva, Switzerland and internationally.

@Peter, Jonna, my colleagues from the Geneva Centre for Emerging Viral Diseases (Prof. L. Kaiser and Prof. I. Eckerle) and the Institute of Global Health (Prof. A. Flahault) are organising the [II Symposium on Emerging Viral Diseases in Geneva in April between 10 and 12 April 2019](#). We would be pleased to invite one of you to join us for this Symposium and to present your interesting work with Predict and with GVP. This would also be an excellent opportunity to discuss further opportunities for collaboration. What do you think?

Best wishes,

Rafael

Join our MOOC on *Global Health at the Human-Animal-Ecosystem Interface*: [Teaser](#) & [Registration](#)

*Dr. Rafael Ruiz de Castañeda, PhD*

REDACTED

Mobile phone: REDACTED

Skype: REDACTED



**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 02/04/2019 2:27:34 PM (-08:00)  
**To:** "Brian Bird" <bhbird@ucdavis.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Jon Epstein" <epstein@ecohealthalliance.org>  
**Cc:** "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "sja2127@cumc.columbia.edu" <sja2127@cumc.columbia.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Predict inbox" <predict@ucdavis.edu>; "William B. Karesh" <karesh@ecohealthalliance.org>  
**Subject:** RE: EHP briefing (brownbag) on Feb 7

Great abstract Brian, and the title is perfect in my opinion. I think it's a bit wordy at the end (last couple of sentences), but it hits all the high notes.

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

Tel. +1 212-380-4474

Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

---

**From:** Brian Bird [mailto:bhbird@ucdavis.edu]  
**Sent:** Sunday, February 3, 2019 2:46 PM  
**To:** Jonna Mazet; Jon Epstein  
**Cc:** Tracey Goldstein; sja2127@cumc.columbia.edu; Christine Kreuder Johnson; Predict inbox; Peter Daszak; William B. Karesh  
**Subject:** Re: EHP briefing (brownbag) on Feb 7

Thanks Jonna,

Jon and I will work through the assignment on Monday and should have a combined draft slide deck and talking points/approach by the end of the day.

Here is a draft title and paragraph for consideration. I need to check the numbers of folks trained, hence the highlight and guesstimate that needs to be confirmed.

**The PREDICT Ebola Host Project – Enhancing One Health based disease surveillance capacity while searching for the origins of Ebola**

PREDICT's Ebola Host Project (EHP) works with government partners in Sierra Leone, Guinea, and Liberia to build robust One Health based surveillance and disease detection networks in support of GHSA priorities and aims. Since 2016, EHP teams and our in-country partners have trained over 150 individuals at the national, district, and local levels to strengthen One Health capacities to conduct safe and robust virus surveillance with a goal to find the animal origins of the devastating 2013-2016 Ebola virus disease outbreak and other closely related filoviruses. This effort has led to recent major discoveries that have revolutionized our understanding of the ecology and potential health risks posed by Ebola and related deadly viruses in the West African region. In just the past 8 months, PREDICT has reported 1) the discovery of an entirely new species of ebolavirus (*Bombali ebolavirus*) in bats with as yet unknown potential human health risks, 2) the detection in bats of the highly lethal cousin of Ebola (*Marburg virus*) thought previously to be found only in East and Central Africa, and importantly 3) the first ever detection of Ebola virus (*Zaire ebolavirus*) in a bat in West Africa. The identification of these high-consequence health threats *BEFORE* they caused known sickness or further deaths in people is a striking example of how investments in national systems to promote active One Health approaches to health surveillance can save lives through scientific discovery and technical capacity strengthening.

Let me know your thoughts on the above,

-b

---

**From:** Jonna Mazet <jkmazet@ucdavis.edu>

**Date:** Friday, February 1, 2019 at 5:35 PM

**To:** "epstein@ecohealthalliance.org" <epstein@ecohealthalliance.org>, Brian Bird <bhbird@ucdavis.edu>

**Cc:** Tracey Goldstein <tgoldstein@ucdavis.edu>, "Anthony, Simon J." <sja2127@cumc.columbia.edu>, Chris Krueder-Johnson <ckjohnson@ucdavis.edu>, Predict inbox <predict@ucdavis.edu>, Peter Daszak <daszak@ecohealthalliance.org>, William Karesh <karesh@ecohealthalliance.org>

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I'd also like to see your combined slide deck, so please get together to discuss. I know you each have one from recent events, so combining into one would be good, recognizing that the audience is now the people for whom we want to stimulate a next round of funding.

Thanks & have a good weekend,  
Jonna

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 02/04/2019 8:49:21 PM (-08:00)  
**To:** "Brian Bird" <bhbird@ucdavis.edu>  
**Cc:** "Jon Epstein" <epstein@ecohealthalliance.org>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Anthony, Simon J." <sja2127@cumc.columbia.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Predict inbox" <predict@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Billy Karesh" <karesh@ecohealthalliance.org>  
**Subject:** Re: [predict] Re: EHP briefing (brownbag) on Feb 7

Great -- done!  
J

On Mon, Feb 4, 2019 at 6:51 PM Brian Bird <[bhbird@ucdavis.edu](mailto:bhbird@ucdavis.edu)> wrote:

Thanks Jonna. Yes, I checked and that training number holds up well. That would account for solid trainings of government partner staff and PREDICT team staff across the three countries. If you add in the total community members involved in some way for trainings and engagement the EHP three-country totals exceed 350 total...

So, I think it's fair to leave the 150 intact and go with that.

It would be great if you would share forward with the folks that need it in DC.

Draft slides coming either later tonight or early tomorrow morning.

-b

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**From:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Date:** Monday, February 4, 2019 at 5:52 PM  
**To:** Brian Bird <[bhbird@ucdavis.edu](mailto:bhbird@ucdavis.edu)>  
**Cc:** "[epstein@ecohealthalliance.org](mailto:epstein@ecohealthalliance.org)" <[epstein@ecohealthalliance.org](mailto:epstein@ecohealthalliance.org)>, Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>, "Anthony, Simon J." <[sja2127@cumc.columbia.edu](mailto:sja2127@cumc.columbia.edu)>, Chris Krueider-Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>, Predict inbox <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, William Karesh <[karesh@ecohealthalliance.org](mailto:karesh@ecohealthalliance.org)>  
**Subject:** Re: EHP briefing (brownbag) on Feb 7

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**Date:** Friday, February 1, 2019 at 5:35 PM

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**Cc:** Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>, "Anthony, Simon J." <[sja2127@cumc.columbia.edu](mailto:sja2127@cumc.columbia.edu)>, Chris Krueder-Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>, Predict inbox <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, William Karesh <[karesh@ecohealthalliance.org](mailto:karesh@ecohealthalliance.org)>

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Thanks & have a good weekend,

Jonna



**From:** "Jon Epstein" <epstein@ecohealthalliance.org>  
**Sent:** 02/05/2019 6:12:16 AM (-08:00)  
**To:** "Brian Bird" <bhbird@ucdavis.edu>  
**Cc:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Anthony, Simon J." <sja2127@cumc.columbia.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Predict inbox" <predict@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Billy Karesh" <karesh@ecohealthalliance.org>  
**Subject:** Re: EHP briefing (brownbag) on Feb 7

Brian,

It would be good if we could connect again today by phone to discuss the complete slide deck once you've added in yours.

When are you available?

Cheers,

Jon

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**Date:** Friday, February 1, 2019 at 5:35 PM  
**To:** "[epstein@ecohealthalliance.org](mailto:epstein@ecohealthalliance.org)" <[epstein@ecohealthalliance.org](mailto:epstein@ecohealthalliance.org)>, Brian Bird <[bhbird@ucdavis.edu](mailto:bhbird@ucdavis.edu)>  
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Thanks & have a good weekend,

Jonna

--

Jonathan H. Epstein DVM, MPH, PhD

*Vice President for Science and Outreach*

EcoHealth Alliance  
460 West 34th Street, Ste. 1701

New York, NY 10001

1.212.380.4467 (direct)  
**REDACTED** mobile)

web: [ecohealthalliance.org](http://ecohealthalliance.org)

Twitter: [@epsteinjon](https://twitter.com/epsteinjon)

*EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.*

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 09/27/2019 11:29:51 AM (-07:00)  
**To:** "Shah, Cecilia" <cshah@nas.edu>; "Beth Cameron" <cameron@nti.org>;  
"Dean.Jamison@ucsf.edu" <Dean.Jamison@ucsf.edu>; "djamison@uw.edu" <djamison@uw.edu>; "Espinal, Dr. Marcos (WDC)" <espinalm@paho.org>; "Jennifer Gardy" <Jennifer.gardy@bccdc.ca>; "jkmazet@ucdavis.edu" <jkmazet@ucdavis.edu>; "Joshua Michaud" <JoshuaM@kff.org>; "mchawla@worldbank.org" <mchawla@worldbank.org>; "Peter Sands" [REDACTED]; "Taylor, Jami [GCSOUS]" <jtaylo19@its.jnj.com>; "tgevens@worldbank.org" <tgevens@worldbank.org>; "Thomas Inglesby" <tinglesby@jhu.edu>; "Timothy Burgess" <timothy.burgess@usuhs.edu>  
**Cc:** "Ogawa, V. Ayano" <VOgawa@nas.edu>; "Tran, Thu Anh" <TTran@nas.edu>  
**Subject:** Re: FIRST PLANNING CALL - Forum on Microbial Threats Workshop

Apologies - I got tied into another meeting that clashed and won't be able to join the call right now- I'll follow up with the notes and look forward to an excellent workshop!

Cheers,

Peter

Peter Daszak  
(Sent from my iPhone)

President  
EcoHealth Alliance

460 West 34th Street, New York, NY10001, USA

[www.EcoHealthAlliance.org](http://www.EcoHealthAlliance.org)

On Feb 13, 2018, at 11:15 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

Couple of papers attached that analyze behavioral data (travel avoidance) in response to H1N1.

A great person to have talk would be Eli Fenichel, Yale - <https://environment.yale.edu/profile/eli-fenichel/> or Gerardo Chowell <http://publichealth.gsu.edu/profile/gerardo-chowell/> who've worked on this issue.

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

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---

**From:** Shah, Cecilia [<mailto:cshah@nas.edu>]  
**Sent:** Monday, February 12, 2018 10:33 AM  
**To:** Beth Cameron; [Dean.Jamison@ucsf.edu](mailto:Dean.Jamison@ucsf.edu); [djamison@uw.edu](mailto:djamison@uw.edu); Espinal, Dr. Marcos (WDC); Jennifer Gardy; [jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu); 'Joshua Michaud'; [mchawla@worldbank.org](mailto:mchawla@worldbank.org); Peter Daszak; 'Peter Sands'; Taylor, Jami [GCSOUS]; [tgevans@worldbank.org](mailto:tgevans@worldbank.org); Thomas Inglesby; Timothy Burgess  
**Cc:** Ogawa, V. Ayano; Tran, Thu Anh  
**Subject:** FIRST PLANNING CALL - Forum on Microbial Threats Workshop  
**Importance:** High

Dear Planning Committee Members,

We are looking forward to our first planning call tomorrow **Tuesday, February 13 from 10:00 – 11:30 AM (ET)**. In preparation for the call, please see attached 4 documents:

1. First Call Agenda
2. Planning Committee Roster and Bios
3. Draft Workshop Agenda
4. Resources List

As you can see in the agenda for the call, after the conflict of interest discussion (which is mandatory to confirm your appointments to this planning committee), we will discuss the workshop objectives, themes, and proposed sessions. We have prepared a **first draft workshop agenda** that we would like to use as a starting point for the discussion. **Please note that throughout this document, we offer suggestions for presentations and speakers in bubble comments.** We would very much appreciate if you can take a look at this first draft before the call.

The dial-in information is in the calendar invitation Anh sent and also below:

**Toll Free Number:** REDACTED  
**International Number:** REDACTED  
**Participant Passcode:** REDACTED

Looking forward to talking to you tomorrow.

Best,

**Cecilia Mundaca Shah, MD, DrPH**  
Director, Forum on Microbial Threats  
Board on Global Health  
Health and Medicine Division | Find us at [nationalacademies.org/HMD](http://nationalacademies.org/HMD)  
The National Academies of Sciences, Engineering, and Medicine  
500 Fifth Street, NW  
Washington, DC 20001

Phone: 202 334 2622  
E-mail: [cshah@nas.edu](mailto:cshah@nas.edu)

<image001.png>

<Fenichel skip the trip. Airtravel and H1N1.PDF>

<Springborn et al television viewing H1N1.pdf>

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 09/30/2019 5:08:05 PM (-07:00)  
**To:** "Wang Linfa" <linfa.wang@duke-nus.edu.sg>  
**Cc:** [REDACTED]  
**Subject:** Virus Spillover Risk Assessment Manuscript

Dear Prof. Linfa Wang,

We are contacting you regarding a viral risk ranking assessment you previously completed. We are now preparing to submit our manuscript and associated web tool for review and publication. We feel your contribution as an expert was extremely valuable, therefore we would like to acknowledge you in a group co-authorship on the manuscript. If desirable and your permission is given by return of this email, we would like to list your name in an 'Expert Panel' list that will appear on the following website <https://ohi.vetmed.ucdavis.edu/programs-projects/predict-project/authorship>. Or if preferred, you can remain anonymous. As previously stated, identifying information will not be directly linked to any analysis. I have enclosed a copy of the abstract below for your information. If you would like a copy of the full draft manuscript, please contact [REDACTED]

### **Spillover: A New Tool for Viral Risk Ranking**

Tracey Goldstein<sup>1§</sup>, Chris. K. Johnson<sup>1§</sup>, Simon Anthony<sup>2,3,4</sup>, Kirsten Gilardi<sup>1</sup>, Peter Daszak<sup>2</sup>, Kevin J. Olival<sup>2</sup>, Tammie O'Rourke<sup>5</sup>, Suzan Murray<sup>6</sup>, Sarah Olsen<sup>7</sup>, [REDACTED] Gema Vidal<sup>1</sup>, Expert Panel<sup>8</sup>, PREDICT Consortium<sup>9</sup>, and Jonna A.K. Mazet<sup>1\*</sup>

#### **Abstract:**

· **Background:**

Emerging infectious diseases have major societal and economic impacts, with the last 5 epidemics of animal-origin costing 122-163 billion US dollars. We are unprepared for emerging disease outbreaks, given at least 500,000 animal viruses capable of spillover into people remain undiscovered. We need to shift our epidemic approach from reactive response to proactive prevention, and a tool for ranking the risk from newly-discovered viruses is needed.

· **Methods:**

After creating a database of 270,843 records of known zoonotic viruses and viruses detected during the largest virus discovery effort on record, we developed a risk ranking framework and an interactive tool called SpillOver that uses a weighting system and external data to estimate the relative risk of 42 host, virus, and environmental factors to systematically evaluate which viruses pose the greatest threat to people.

· **Results:**

We ranked 687 animal viruses with respect to their spillover risk. The top 45 were known zoonotic viruses, with *Influenza A virus* in first position. Several newly discovered wildlife viruses were assigned higher spillover risk values than known zoonotic viruses.

· **Conclusions:**

Using a scientifically-informed process, we capitalized on the wealth of global virus data being generated to identify targets for further investigation and prioritization for pandemic preparedness. As virus discovery efforts continue to reduce the burden of the unknown and our understanding of zoonotic processes increases, SpillOver provides an adaptive platform to collate and rank new and existing viruses, improve our planning to reduce risk, and prioritize public health interventions for prevention and rapid control of zoonotic disease outbreaks.

Kind regards,

**Prof. Jonna Mazet**

Global Director, PREDICT USAID  
Professor of Disease Ecology and Epidemiology  
One Health Institute  
School of Veterinary Medicine  
University of California Davis  
1089 Veterinary Medicine Drive





Davis, CA 95616, USA  
[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)

**REDACTED**

**From:** predict-request@ucdavis.edu on behalf of "Elizabeth Leasure" <ealeasure@ucdavis.edu>  
**Sent:** 11/27/2019 6:36:53 AM (-08:00)  
**To:** "Evelyn Luciano" <luciano@ecohealthalliance.org>  
**Cc:** "Peter Daszak" <daszak@ecohealthalliance.org>; "Joseph Riccardi" <riccardi@ecohealthalliance.org>; "Hannah R Chale" <hrchale@ucdavis.edu>; "predict Sympa List" <predict@ucdavis.edu>  
**Subject:** [predict] RE: A15-0146-S001 Amd 15

I've forwarded this on to our SPO office, so hopefully you'll get an executed amendment very soon. Thanks!

*Elizabeth Leasure*  
*Financial Operations Manager*  
*One Health Institute*

**REDACTED** (cell)  
530-754-9034 (office)  
Skype: ealeasure

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**From:** Evelyn Luciano <luciano@ecohealthalliance.org>  
**Sent:** Tuesday, November 26, 2019 2:47 PM  
**To:** Elizabeth Leasure <ealeasure@UCDAVIS.EDU>  
**Cc:** Peter Daszak <daszak@ecohealthalliance.org>; Joseph Riccardi <riccardi@ecohealthalliance.org>; Hannah R Chale <hrchale@UCDAVIS.EDU>; predict Sympa List <predict@ucdavis.edu>  
**Subject:** Re: A15-0146-S001 Amd 15

Hi Liz,

Much appreciated. Please find signed amendment.

Have a great Thanksgiving!

Evelyn

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 01/31/2020 5:10:35 PM (-08:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Nomination of Jennifer Gardy - CV Upload

Midnight Pacific tomorrow, so we're okay.  
J

On Fri, Jan 31, 2020 at 5:04 PM Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

I'll wait till the right version's in. I'll keep checking phone tonight and tomorrow am. What's the drop-dead deadline?

Cheers,

Peter

**Peter Daszak**

*President*

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**From:** Jonna Mazet [mailto:[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)]  
**Sent:** Friday, January 31, 2020 7:56 PM  
**To:** Peter Daszak  
**Subject:** Fwd: Nomination of Jennifer Gardy - CV Upload

The CV that I uploaded is a place holder. SHE's updating, but it might allow you to click, science I uploaded something.

Then you don't have to worry about it tomorrow.

Sorry for the last minutedness,

J

----- Forwarded message -----

From: <[namnbr@nas.edu](mailto:namnbr@nas.edu)>  
Date: Fri, Jan 31, 2020 at 4:52 PM  
Subject: Nomination of Jennifer Gardy - CV Upload  
To: <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

Dear Jonna Mazet and Peter Daszak:

A document has been uploaded successfully. The candidate dashboard on your home page should now display a checkmark next to "CV (received)". This confirms that a document has been uploaded. Please check again to ensure that this document is, in fact, the candidate's CV. (Click on "download CV" from the dashboard or from the Navigation Phase Tracker.)

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202.334.1636 or 202.334.2174

**From:** "Amponsah, Edith" <EAmponsah@nas.edu>  
**Sent:** 02/03/2020 9:24:33 AM (-08:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Lichtveld, Maureen Y" <mlichtve@tulane.edu>; "MUMFORD, Elizabeth" [REDACTED] "Kevin Anderson" <kevin.anderson@dhs.gov>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Elizabeth Hermsen" <elizabeth.hermsen@merck.com>; "Sally A. Miller" <miller.769@osu.edu>; "Mary E. Wilson" <mewilson@hsph.harvard.edu>; "Gail Hansen" [REDACTED] "Rushton, Jonathan" [REDACTED] "jmhughe@emory.edu" <jmhughe@emory.edu>; "David Rizzo" <dmrizzo@ucdavis.edu>; "apruden@vt.edu" <apruden@vt.edu>; "Barton Behravesh, Casey (CDC/DDID/NCEZID/OD)" <dlx9@cdc.gov>  
**Cc:** "Mary Radford" <maradford@ucdavis.edu>; "andre@ecohealthalliance.org" <andre@ecohealthalliance.org>; "Pavlin, Julie" <JPavlin@nas.edu>; "Goodtree, Hannah" <HGoodtree@nas.edu>  
**Subject:** ACTION ITEMS - Call for Nominations and Meeting Notes  
**Attachments:** OHAC External Stakeholders List Oct 2019.pdf, Snapshot of Current One Health Action Collaborative Membership Feb 2020.pdf, OHAC Call 20 Notes FINAL.pdf

Dear OHAC members,

Happy New Month! Please find attached the notes from the OHAC call on January 21<sup>st</sup>.

During the call, there was discussion about the ways which OHAC can address the gap in representation of the social and behavioral sciences in the group. The two main ways discussed were:

- Inviting a new member to the group with expertise in the social and behavioral sciences
- A new deliverable that highlights the importance of socio-behavioral approaches in One Health

Action Items:

1. Please send your nominations for potential stakeholders with expertise in the social and behavioral sciences. I have attached a snapshot of the current membership, including expertise and geographic representation as well as the most recent list of external stakeholders that have been nominated in the past.
2. Please send topic ideas that can be explored in a new deliverable.

Thank you,

**Edith Amponsah, MPH, IBCLC**

Research Associate

Forum on Microbial Threats

Health and Medicine Division

The National Academies of Sciences, Engineering, and Medicine

500 Fifth Street, NW

Phone: 202-334-3222

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FORUM ON MICROBIAL THREATS

**ONE HEALTH ACTION COLLABORATIVE (OHAC)**

**Potential Members - A Running List**  
**Fall 2019**

For the past two years, OHAC has been comprised of approximately 14 members; as of October, OHAC has 14 members. During the last two OHAC meetings in June and September 2019, OHAC and Forum members discussed that adding a couple more members could be beneficial due to missing expertise and representation. Below is a list of names and bios of candidates who were nominated by former and current OHAC members and/or have been engaged in our deliverables (e.g., as a reviewer, subcommittee member, etc.).

**Summary of Potential Members**

- **Janetrix Amuguni**, B.V.M., M.A., Ph.D., Cummings School of Veterinary Medicine at Tufts University (Sally Miller)
- **Franck Berthe**, D.V.M., Ph.D., World Bank Group (stakeholder of the Forum)
- **Maria Bowman**, Ph.D., Soil Health Partnership (Gail Hansen)
- **Lisa Conti**, D.V.M., M.P.H., Florida Department of Agriculture and Consumer Services (reviewer for core competencies paper)
- **Tracey Dutcher**, D.V.M., M.S., U.S. Department of Agriculture, Animal and Plant Health Inspection Services (subcommittee member for One Health workers deliverable)
- **Paula Fujiwara**, M.D., M.P.H., The Union **REDACTED**
- **Delia Grace**, Ph.D., International Livestock Research Institute
- **Greg Gray**, M.D., M.P.H., Duke Global Health Institute (self-nomination)
- **Chelsea Himsworth**, D.V.M., Ph.D., University of British Columbia (Jennifer Gardy)
- **Marion Koopmans**, Ph.D., D.V.M., Erasmus MC (Jonna Mazet)
- **Stephen Luby**, M.D., Stanford University (Mary Wilson)
- **Francisco Olea-Popelka**, D.V.M., Ph.D., M.Sc., Western University – Schulich School of Medicine and Dentistry **REDACTED**
- **Peter Rabinowitz**, M.D., M.P.H., University of Washington (Jeff Duchin)
- **Sean Shadomy**, D.V.M., M.P.H., CDC/FAO (Rima Khabbaz)
- **Julie Sinclair**, D.V.M., M.A., M.P.H., CDC (Rima Khabbaz)
- **Stacy Sneeringer**, M.A., Ph.D., USDA/ERS (Gail Hansen)
- **Rafael Ruiz de Castañeda**, Ph.D., University of Geneva (Liz Mumford)
- **Kevin Bardosh**, Ph.D., University of Florida (Liz Mumford)

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**BIOGRAPHIES**

**Janetrix Amuguni, B.V.M., M.A, Ph.D.**

Assistant Professor, Infectious Diseases  
Cummings School of Veterinary Medicine at Tufts University  
North Grafton, Massachusetts  
[Janetrix.Amuguni@tufts.edu](mailto:Janetrix.Amuguni@tufts.edu)

Link: <http://vetprofiles.tufts.edu/faculty/janetrix-hellen-amuguni#tab-about>

*Nominated by: Sally Miller*

BIO: Dr. Hellen Amuguni is a veterinarian with doctoral training in Infectious Diseases. She is an Assistant Professor in the Department of Infectious Disease and Global Health at the Cummings school of Veterinary medicine, Tufts University. Her doctoral dissertation was conducted under the supervision of Professor Saul Tzipori, a renowned scientist in the field of infectious diseases and vaccine research where she investigated sublingual immunization as an alternative delivery route for vaccines. The project, supported by the Bill and Melinda Gates Grand Challenges for Global Health initiative, developed an effective heat stable non-injectable tetanus vaccine that does not require a cold chain and can be used in developing countries. She has many years of experience working as a Veterinarian and Gender specialist among pastoralist communities in the horn of Africa, developing gender programs, conducting gender assessment studies among livestock projects in Kenya, Ethiopia, Southern Sudan and Somalia. She also facilitates in the International Veterinary Medicine forums and Problem Based Learning courses and is the Co-Director of the Human Dimensions of Conservation Medicine course for graduate students in the masters in Conservation Medicine program. Dr. Amuguni is the technical advisor for the USAID RESPOND project Africa. She coordinates projects across six African countries including Kenya, Uganda, Tanzania, Rwanda, Ethiopia and Democratic Republic of Congo working with 14 institutions of public health and veterinary medicine to build the capacity of partner African countries using a One Health approach to investigate, respond to, and counter existing and future emerging infectious disease outbreaks.

**Kevin Bardosh, Ph.D.**

Professor of Anthropology and Emerging Pathogens  
University of Florida  
Gainesville, Florida  
[kevinbardosh@ufl.edu](mailto:kevinbardosh@ufl.edu)

Link: <https://anthro.ufl.edu/kevin-bardosh/>

*Nominated by: Liz Mumford*

BIO: Kevin Bardosh (PhD, Edinburgh) is Research Assistant Professor of Anthropology and Emerging Pathogens at the University of Florida. His work is grounded in a biosocial approach to health problems, with a particular interest in human-animal-ecosystem relations, science and technology, governance and citizen engagement. Kevin has conducted formative and operational research in a dozen countries in Africa, Asia and the Americas, working in collaboration with scientists, civil society and Ministries of Health and Agriculture. A major goal of his work is to use social science knowledge – ethnography, qualitative research and survey data – to improve health policy and practice. Kevin currently has funding from the Gates Foundation to develop a community-based mosquito control initiative in northern Haiti – Polisy Kont Moustik – to assist with the elimination of lymphatic filariasis and malaria, and the control of Zika and other arboviruses. He also holds a Society and Ethics Fellowship from the Wellcome Trust

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(2016-2020) to explore the biopolitics of pandemic preparedness, including a focus on the current Global Zika Response in Latin America and the Caribbean.

**Franck Berthe, D.V.M., Ph.D.**

Senior Livestock Specialist

World Bank Group

Washington D.C.

fberthe1@worldbank.org

Link: <https://blogs.worldbank.org/team/franck-berthe>

BIO: Franck Berthe is Senior Livestock Specialist in the Agriculture Global Practice of the World Bank and coordinator of the Livestock Global Alliance since March 2016. The Alliance brings together the Food and Agriculture Organization of the UN (FAO), the International Fund for Agriculture Development (IFAD), the International Research Institute on Livestock (ILRI/CGIAR), the World Organisation for Animal Health (OIE), and the World Bank, five global public institutions committed for safer, fairer and more sustainable livestock. Franck was previously Head of the Animal and Plant Health Unit at the European Food Safety Authority (EFSA) based in Parma, Italy. His core activity was to assess animal and plant production systems and practices with respect to primary production, ecosystems and public health. Franck's job was to provide scientific advice to the EU risk managers and decision makers on a wide range of risks at the human-animal-ecosystem interface. Prior to coming to Italy in 2007, Franck was Associate Professor at the Atlantic Veterinary College (UPEI) and Canada Research Chair in Aquatic Health Sciences, exploring host pathogens relations in their environment. From 1994 to 2004, Franck has led active research in aquatic animal health at the French institute for the exploitation of the sea (IFREMER) in France and overseas territories. Franck is Vice-President of the Biological Standards Commission of the World Organisation for Animal Health (OIE). He has served on OIE specialized Commissions since 1996. A native of France, Franck received a doctorate of veterinary medicine, and a PhD degree in molecular parasitology. He has a diploma in bacteriology from the Pasteur Institute.

**Maria Bowman, Ph.D.**

Lead Scientist

Soil Health Partnership

Chesterfield, Missouri

maria.bowman@ers.usda.gov

Link: <https://www.ncga.com/news-and-resources/news-stories/article/2018/11/soil-health-partnership-hires-maria-bowman-as-new-lead-scientist>

*Nominated by: Gail Hansen*

BIO: Maria Bowman is the Lead Scientist for the Soil Health Partnership. Maria's primary role is to lead the scientific and data plan for the partnership, specifically overseeing its collection, organizing it, and providing analysis and summaries to the SHP field staff, grower community, scientific community, and to our collaborators and partners. Dr. Bowman comes to the SHP having worked as a research agricultural economist for the United States Department of Agriculture. She holds a Ph.D. in Agricultural and Resource Economics from the University of California, Berkeley. In addition to her work with the USDA, Dr. Bowman was a sustainable livestock economics fellow for the Natural Resource Defense Council. She earned her Master of Science in Forest Economics and Management from the Virginia Polytechnic Institute, and her undergraduate degree in Environmental Science from Juniata College.



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A native of the Shenandoah Valley in Virginia, Maria grew up surrounded by agriculture. She makes her home with her husband in Maryland, where she enjoys gardening, cycling, hiking, relaxing around a campfire and tackling home and yard projects.

**Rafael Ruiz de Castañeda, Ph.D.**

Researcher and Lecturer

**REDACTED**

Link:

**REDACTED**

*Nominated by: Liz Mumford*

BIO: Dr. Rafael Ruiz de Castañeda leads the Precision One Health Unit with Dr. Isabelle Bolon. He has an interdisciplinary and international background at the interface of wild animal ecology and veterinary microbiology. He has an important field and lab experience in screening wild avian populations for the presence of potentially pathogenic and zoonotic bacteria (e.g. *Enterobacteria*) and parasites (e.g. avian malaria), and using this as indicators of population health status and conservation. His current interest have extended into the so called One Health / Eco-Health approach and its application in the context of Global Health challenges (e.g. emerging infectious diseases) and opportunities (e.g. conservation of biodiversity and health promotion) at the human-animal-ecosystem interface. Besides extensive personal experiences in Africa since his childhood, Rafael Ruiz de Castañeda has also worked over several years in the coordination, development and implementation of innovative health education projects based on ITCs in developing and emerging countries in Africa but also in Latin America (e.g. EU-funded Africa Build, RAFT Network). He is also very much involved in the production of MOOCs in Global Health at the Faculty of Medicine and directs now in collaboration with *Institut Pasteur* his third project on *Global Health and the Human-Animal-Ecosystem Interface*.

**Lisa Conti, D.V.M., M.P.H.**

Deputy Commissioner and Chief Science Officer

Florida Department of Agriculture and Consumer Services

Tallahassee, Florida

**REDACTED**

Link: <http://www.onehealthinitiative.com/publications/Lisa%20Conti%20Biography%20January2014.pdf>

BIO: Dr. Lisa Conti, a veterinarian, is currently Deputy Commissioner and Chief Science Officer at Florida Department of Agriculture and Consumer Services. She is the former Director of the Florida Department of Health's Environmental Health Division where she supervised over 200 employees and led five Bureaus: Environmental Public Health Medicine, Onsite Sewage Programs, Community Environmental Health, Water Programs, Radiation Control and the Office of Environmental Health Informatics and Preparedness. Prior to this, she was the Florida State Public Health Veterinarian. Dr. Conti joined the One Health Initiative team of Laura H. Kahn, MD, MPH, MPP, Bruce Kaplan, DVM, Thomas P. Monath, MD, and Jack Woodall, PhD on January 26, 2012. In that capacity she helps co-manage the One Health Initiative website [www.onehealthinitiative.com](http://www.onehealthinitiative.com) in addition to participating in the team's numerous other One Health projects. Dr. Conti is a member of the NIH National Advisory Environmental Health Sciences Council. She was a founding member and Chair of the national State Environmental Health Directors with the Association of State and Territorial Health Officers. She has been an active member of her local, state and national public health, environmental public health and veterinary medical associations for many years. She sits on the Rabies Compendium Committee of the National Association

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of State Public Health Veterinarians (NASPHV), was an Executive Board member of the Florida Veterinary Medical Association (FVMA) and established and chaired the FVMA One Health Committee. She has been a founding member of the Florida Rabies Control and Prevention Advisory Committee. Dr. Conti was a member of the American Veterinary Medical Association (AVMA) Council on Public Relations representing Public Health. Dr. Conti earned her Doctor of Veterinary Medicine (DVM) degree from the University of Florida, Master of Public Health (MPH) degree in Public Health Administration from the University of South Florida and Bachelor of Science (Chemistry/Math) from the University of Miami. She is a Certified Public Manager through Florida State University and Board Certified in Preventive Medicine through the American College of Veterinary Preventive Medicine.

**Tracey Dutcher, D.V.M., M.S.**

Field Epidemiology Investigation Services  
U.S. Department of Agriculture, Animal and Plant Health Inspection Services  
Greater Minneapolis-St. Paul Area, Minnesota.  
tracey.v.dutcher@aphis.usda.gov

Link: <https://www.linkedin.com/in/tracey-dutcher-6b021710/>

BIO: Dr. Tracey Dutcher is a veterinary epidemiologist within the U.S. Department of Agriculture, Animal and Plant Health Inspection Services, working to strengthen USDA's delivery of epidemiologic services using a One Health approach. In addition to direct epidemiologic investigation support, Tracey leverages her extensive training and experience to promote an integrated approach to outbreak investigation among Federal and State partners, facilitating intra- and inter-agency communication, collaboration, coordination and problem solving, especially for zoonotic and other complex epidemiologic issues. Prior to joining USDA, Tracey spent 7 years as a supervisory epidemiologist in Federal and state public health agencies (CDC, Indian Health Service and the Alaska Department of Health and Human Services), working across the spectrum from outbreak investigation and response to policy development for infectious and environmental health concerns. Initially hired into APHIS-Veterinary Services (VS) to assist in building effective collaborations and methods for coordinating zoonotic disease surveillance and data sharing activities between VS and the Centers for Disease Control and Prevention (CDC), Tracey spent 9 years in leadership roles, and received formal training in transformational leadership through the Federal Executive Institute. Tracey also specializes in strengthening applied epidemiologic capacity, and facilitating the development of innovative partnerships with Federal Agencies, academia, and industry to increase efficiency and effectiveness of managing complex health threats through cross-disciplinary collaboration. Her current priorities include facilitating 'operational' approaches to working across organizational and disciplinary lines, and developing and delivering training in One Health collaboration methods.

Dr. Dutcher is an alumnus of the CDC Epidemic Intelligence Service, and a diplomate of the American College of Veterinary Preventive Medicine.

**Paula Fujiwara, M.D., M.P.H.**

Scientific Director  
The Union  
Paris, France  
pfujiwara@theunion.org  
Link: <https://www.theunion.org/who-we-are/leadership/executive-management-team/paula-i-fujiwara-md-mph>

Nominated by: **REDACTED**

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BIO: Dr. Paula I Fujiwara was seconded by the US Centers for Disease Control (CDC) to The Union in 2001. She has since served as Director of both the Departments of HIV and TB and became Scientific Director in June 2013, with responsibility for overseeing all technical departments and projects of The Union. Dr. Fujiwara and her team developed the successful Integrated HIV Care for TB Patients Living with HIV/AIDS (IHC) Programme in Africa and Asia, as well as related courses and a technical guide. She has provided technical assistance to numerous national TB programmes and represents The Union on key committees, such as WHO's STAG-TB, as well as serving as a Senior Advisor to Vital Strategies, The Union's affiliate in North America. Prior to coming to The Union, Dr. Fujiwara was seconded by CDC to New York City's Bureau of TB Control, during which time, the incidence of TB declined by more than two-thirds and MDR-TB almost disappeared. She completed her medical training at the University of California (UC) Davis and UC San Francisco and also holds a Master of Public Health and a Master of Science degree from UC Berkeley. She has published scholarly articles on the public health aspects of TB control and MDR-TB.

**Delia Grace, Ph.D.**

Co-Leader, Animal and Human Health  
International Livestock Research Institute

**REDACTED**

Link: **REDACTED**

BIO: Delia is an epidemiologist and veterinarian with 20 years' experience in developing countries. She is a graduate from several leading universities including the National University of Ireland, Edinburgh University, the Free University Berlin and Cornell University. She leads research on zoonoses and foodborne disease at the International Livestock Research Institute in Kenya and the CGIAR Research Program on Agriculture for Human Nutrition and Health. Her main research focus is food safety in the domestic markets of developing countries. Research interests include emerging diseases, participatory epidemiology, gender and animal welfare. Her career has spanned the private sector, field-level community development and aid management, as well as research. She has lived and worked in Asia, west and east Africa and authored or co-authored more than 200 peer-reviewed publications as well as training courses, briefs, films, articles and blog posts.

**Greg Gray, M.D., M.P.H.**

Professor of Medicine

**REDACTED**

Link: **REDACTED**

*Nominated by: self-nomination*

BIO: Gregory C. Gray MD, MPH, FIDSA is an infectious disease epidemiologist and Professor at Duke University with three affiliations: The Division of Infectious Diseases in Duke University's School of Medicine, the Duke Global Health Institute, and the Duke Nicholas School of the Environment. He also serves as a Professor in the Program in Emerging Infectious Diseases and the Global Health Institute at Duke-NUS Medical School, Singapore and as a Professor of Global Health at Duke Kunshan University in China. He leads the Duke One Health Network which involves more than 30 professionals studying more than 30 pathogens under 30 research and training projects running in multiple countries: China, Iraq,

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Malaysia, Mongolia, Myanmar, Pakistan, Singapore, South Africa, the Philippines, the United States, and Vietnam (see Duke One Health web site at: <http://sites.globalhealth.duke.edu/dukeonehealth/>).

**Chelsea Himsworth, D.V.M., Ph.D.**

Assistant Professor

REDACTED

Link REDACTED

*Nominated by: Jennifer Gardy*

BIO: Dr. Chelsea Himsworth received her DVM from the Western College of Veterinary Medicine in 2007, before staying on to complete a Masters of Veterinary Science and Senior Residency in Anatomic Pathology with a Wildlife Health focus in 2010. She went on to successfully complete the board certification exam and achieve Diplomate status with the American College of Veterinary Pathologists. Dr. Himsworth then joined the PhD program in the School of Population and Public Health, University of British Columbia and completed the program in 2014. Currently, she is a Diagnostic Pathologist and the Leader for Veterinary Science and Diagnostics at the Animal Health Centre, the provincial veterinary diagnostic laboratory for British Columbia. She is also the BC Regional Director for the Canadian Wildlife Health Cooperative.

**Marion Koopmans, D.V.M., Ph.D.**

Head of Viroscience

REDACTED

*Nominated by: Jonna Mazet*

BIO: Dr. Koopmans is a veterinarian by training, with specialization in internal diseases and a PhD in virology. She has worked in academic veterinary and human medicine, as well as public health with a 3 year stay at the US Centers for Disease Control in veterinary. In 2006 she was appointed as professor of Public Health Virology at the Erasmus University in Rotterdam. In 2014, she accepted the position of head of Department of Viroscience at Erasmus MC, Rotterdam. Her research interests include enteric viruses, food-borne infections, emerging disease preparedness, and infections at the human-animal interface, with a particular focus on unraveling mechanisms underlying possible emergence of new health threats and optimizing the early detection and response. She is interested in pursuing the potential applications of novel technologies for enhancing laboratory capacity for infectious disease across the globe, with a strong emphasis on translational activities to facilitate use in clinical and public health settings regardless of level of development.

**Stephen Luby, M.D.**

Senior Fellow

REDACTED

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Link: **REDACTED**

*Nominated by: Mary Wilson*

BIO: Dr. Luby earned his MD degree from the University of Texas-Southwestern Medical School at Dallas. His previous positions include directing the Centre for Communicable Diseases at the International Centre for Diarrhoeal Diseases Research, Bangladesh in Dhaka, Bangladesh, conducting research and teaching epidemiology at the Aga Khan University in Karachi, Pakistan, and working as an epidemiologist in the Foodborne and Diarrheal Diseases Branch of the U.S. Centers for Disease Control and Prevention. Dr. Luby is best known for his work demonstrating the impact of handwashing on disease reduction in low income countries, characterizing the epidemiology of Nipah virus transmission in Bangladesh, and explicating the importance of unsafe injections for transmission of hepatitis C in low income countries. His research focuses on developing and evaluating practical interventions to prevent environmental damage that worsens human health in low income countries. He is particularly interested in strategies to counter perverse incentives where businesses generate income by destroying the environment and compromising public health. He works primarily in Bangladesh but also has projects in Western China and Liberia. His ongoing projects include 1) assessing the impact on health and child cognitive development of scalable strategies to improve water, sanitation and hygiene; 2) reducing the adverse environmental and health consequences of brick manufacturing in Bangladesh; 3) reducing the exposure to lead among residents of rural Bangladesh; 4) characterizing and preventing zoonotic disease transmission especially of henipa and influenza viruses.

**Francisco Olea-Popelka, D.V.M., Ph.D., M.Sc.**

Chair of One Health

**REDACTED**

Link:

**REDACTED**

*Nominated by:* **REDACTED**

BIO: Professor Olea-Popelka earned a Doctor of Veterinary Medicine degree at the College of Veterinary Medicine at Universidad Mayor in Santiago, Chile and a master's in Epidemiology in 2002, and PhD, in Epidemiology in 2007, at the Ontario Veterinary College at the University of Guelph. He served as an Associate Professor in Clinical Sciences at the College of Veterinary Medicine and BioMedical Sciences at Colorado State University in the United States of America from 2007 to 2018. In addition to holding the endowed chair position he is an associate professor in Pathology and Laboratory Medicine, Schulich Medicine & Dentistry. Professor Olea-Popelka's inter-disciplinary research focuses on the study of diseases and addresses health issues at the intersection of livestock, wildlife, and humans globally. His main focus is mycobacterial infection and he is recognized as an international leader in zoonotic tuberculosis (TB). He is leading the global effort to address the public health challenges posed by zoonotic TB in close collaboration with the World Health Organization, The International Union Against Tuberculosis and Lung Disease, The Food and Agriculture Organization of the United Nations, and the World Organization for Animal Health, providing health solutions for humans living in rural communities affected with TB and HIV. He has served on a number of international, national and scholarly committees including Zoonotic Tuberculosis sub-section Program Chair for The Union from 2013-2015, Member of the Association of Veterinary Epidemiology and Preventive Medicine from 2008- to present, and Faculty Advisor and founder for the One Health Club, College of Veterinary Medicine and Biomedical

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Sciences, Colorado State University from 2008 to 2018). He was the recipient of Margaret A.B. Maxwell Memorial Scholarship in 2002 and 2003, the CAVEPM Travel award for ISVEE 10th in 2003, Graduate Students Recognition Award (2005), and the "Achiever" Award at The Union in 2014, and was a nominee for the Department of Clinical Sciences College of Veterinary Medicine and Biomedical Sciences, Colorado State University 'Mentoring Award' in 2017 and the College of Veterinary Medicine and Biomedical Sciences nominee in 2018 for the Monfort Professor rising star award.

**Peter Rabinowitz, M.D., M.P.H.**

Associate Professor, Environmental and Occupational Health Sciences  
University of Washington  
Seattle, WA

[peterr7@uw.edu](mailto:peterr7@uw.edu)

Link: [http://deohs.washington.edu/faculty/rabinowitz\\_peter](http://deohs.washington.edu/faculty/rabinowitz_peter)

*Nominated by: Jeff Duchin*

BIO: Dr. Rabinowitz directs the [Center for One Health Research](#). The Project explores linkages between human, animal, and environmental health in a "One Health" paradigm, including: zoonotic infectious diseases at the human-animal interface, animals as "sentinels" of environmental health hazards, and clinical collaboration between human health care providers and veterinarians in a species-spanning approach. A goal of the Project is to serve as an incubator and organizer of research, training, and clinical activities at the University of Washington related to the human-animal-ecosystem interface. Dr. Rabinowitz also directs the [Canary Database](#), an online resource for evidence about animals as sentinels of environmental health threats from both toxic and infectious hazards. He has been a visiting scientist at the Global Influenza Program of the WHO, and also in the Animal Health Division of the U.N. Food and Agriculture Organization (FAO) where he researched zoonotic diseases. He is the co-editor, with Lisa Conti DVM, MPH, of the clinical manual *Human Animal Medicine: Zoonoses, Toxicants and other Shared Health Risks*. (Elsevier 2010) He is co-director, with Malika Kachani DVM, PhD, of the Stone Mountain Working Group on One Health Proof of Concept Research. Dr. Rabinowitz completed a Family Medicine residency through the University of California San Francisco (Salinas Program). He has also completed fellowships in General Preventive Medicine and Occupational and Environmental Medicine at the Yale School of Medicine, where he served as Associate Professor in the Department of Internal Medicine and Director of Electives for the School of Medicine.

**Sean Shadomy, D.V.M., M.P.H.**

CDC Liaison Officer for FAO

**REDACTED**

Link: **REDACTED**

*Nominated by: Rima Khabbaz*

BIO: Sean V. Shadomy is a Medical Epidemiologist for the National Center for Zoonotic, Vector-borne and Enteric Diseases at the U.S. Centers for Disease Control and Prevention (CDC), where he is the principle epidemiologist for a number of zoonotic pathogens including anthrax and leptospirosis. He received both a Bachelor of Science in Zoology and Doctorate of Veterinary Medicine from Michigan State University. Afterward he served on active duty in the U.S. Army Veterinary Corps, included serving as the Veterinary Medical Officer for the 7th Special Forces Group (Airborne). He received his MPH from the University of Texas - Houston School of Public Health in 2000. From 2000 to 2003 he worked in

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vaccine safety surveillance and research at the Food and Drug Administration, Center for Biologics Evaluation and Research, and then at the National Immunization Program at CDC until 2004. His awards include the U.S. Army Meritorious Service Medal, the FDA CBER Center Director Award for Scientific Achievement, the DHHS Secretary's Award for Distinguished Service, and nomination for the 2009 CDC Charles C. Shepard Science Award. His professional and scientific interests include the development of cost-effective prevention and control strategies for zoonotic diseases, the ecology of emerging infectious diseases, and the relationship between infectious and immune-mediated diseases.

**Julie Sinclair, D.V.M., M.A., M.P.H.**

Senior Epidemiologist

CDC

Atlanta, Georgia

bwg5@cdc.gov; jsinclair@cdc.gov

Link: <http://pmac2018.com/site/speaker/details/85>

*Nominated by: Rima Khabbaz*

BIO: Julie R. Sinclair is the CDC One Health Liaison to the World Organisation for Animal Health (OIE) previously based in Paris, France and now based in Atlanta, Georgia. Her duties are focused on Tripartite (FAO-OIE-WHO) and One Health activities and Emerging/Re-Emerging Diseases and providing ongoing communication between the OIE and CDC. Prior to her current position, Dr. Sinclair was a Senior Quarantine Veterinary Medical Officer in the Division of Global Migration and Quarantine/National Center for Emerging and Zoonotic Infectious Diseases/Centers for Disease Control and Prevention (CDC) where she served as both a medical officer and subject matter expert in zoonotic diseases, border health, and importation policies and regulations from 2007–2016. Dr. Sinclair is a native of northeastern Kansas (USA). She received a Bachelor of Arts in Political Science (French and Arabic) from Kansas State University and a Masters of Arts in Near Eastern Studies (Arabic) from Princeton University before joining the U.S. Peace Corps as a Small Animal Husbandry volunteer in Togo. She then interned with the Foreign Affairs and National Defense Division/Congressional Research Service before returning overseas as an Associate Logistic Officer/Junior Professional Officer with the United Nations' High Commissioner for Refugees in Malawi. In 1995 she returned to Kansas State University to pursue a Doctorate of Veterinary Medicine after which she practiced small animal veterinary medicine in Bucks County, Pennsylvania. In 2003, she received a Masters of Public Health (Epidemiology) and a Vaccine Science Certificate from Johns Hopkins University. She then worked as a research microbiologist on an E. coli O157:H7 tenderized beef / food safety project for the U.S. Department of Agriculture/Agriculture Research Service. In 2004, she joined CDC and the U.S. Public Health Service as an Epidemic Intelligence Service Officer assigned to the West Virginia Department of Health and Human Resources. As an EIS Officer, she worked on a variety of infectious disease outbreaks (e.g., hantavirus, pertussis, enteric bacterial and viral diseases, hepatitis C and meningitis) and responses (e.g., Hurricane Katrina, Rainbow Family and polio eradication). With CDC and the U.S. Public Health Service, she has deployed to India, Hurricane Katrina, Haiti, Guinea, Cote d'Ivoire, and the Dominican Republic (U.S.S. Kearsarge) working on projects as varied as polio, cholera, animal health and immunization and Ebola. Dr. Sinclair is licensed to practice Veterinary Medicine in Pennsylvania (USA), is certified to issue international health certificates through the USDA's National Veterinary Accreditation, Pennsylvania, Category II (all species), is boarded by the American College of Veterinary Preventive Medicine (ACVPM) and is a Foreign Animal Disease Practitioner (USDA trainings in Ames, Iowa and Plum Island, New York). Dr. Sinclair is a Commander in the U.S. Public Health Service.

*The National Academies of*  
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**Stacy Sneeringer, M.A., Ph.D.**

Economist in the Structure, Technology, and Productivity Branch

USDA/ERS

Washington, D.C.

ssneeringer@ers.usda.gov; stacy.sneeringer@gmail.com

Link: <https://www.stacy-e-sneeringer.com/>

*Nominated by: Gail Hansen*

BIO: Stacy Sneeringer is a Research Economist in the Structure, Technology, and Productivity Branch, Resource and Rural Economics Division, Economic Research Service, U.S. Dept. of Agriculture. Stacy joined ERS in February, 2010. Her research predominantly uses econometric methods to evaluate environmental and public health aspects of livestock agriculture in the United States.



# Snapshot of Current One Health Action Collaborative Membership

February 2020

**TOTAL: 14 MEMBERS**

## Forum Members (5)

**Jonna A. K. Mazet, D.V.M., Ph.D., M.P.V.M. (Chair)**  
University of California, Davis

**Kevin Anderson, Ph.D.**  
U.S. Department of Homeland Security

**Peter Daszak, Ph.D.**  
EcoHealth Alliance

**Elizabeth D. Hermsen, Pharm.D., M.B.A.**  
Merck & Co., Inc.

**Sally A. Miller, Ph.D.**  
The Ohio State University

## External Stakeholders (9)

**Casey Barton Behravesh, D.V.M., Dr.P.H., M.S.**  
CDC

**Gail R. Hansen, D.V.M., M.P.H.**  
Hansen Consulting, LLC

**James M. Hughes, M.D.**  
Emory University

**Maureen Lichtveld, M.D., M.P.H.**  
Tulane University

**Elizabeth Mumford, D.V.M., M.S.**  
Independent Consultant, Geneva

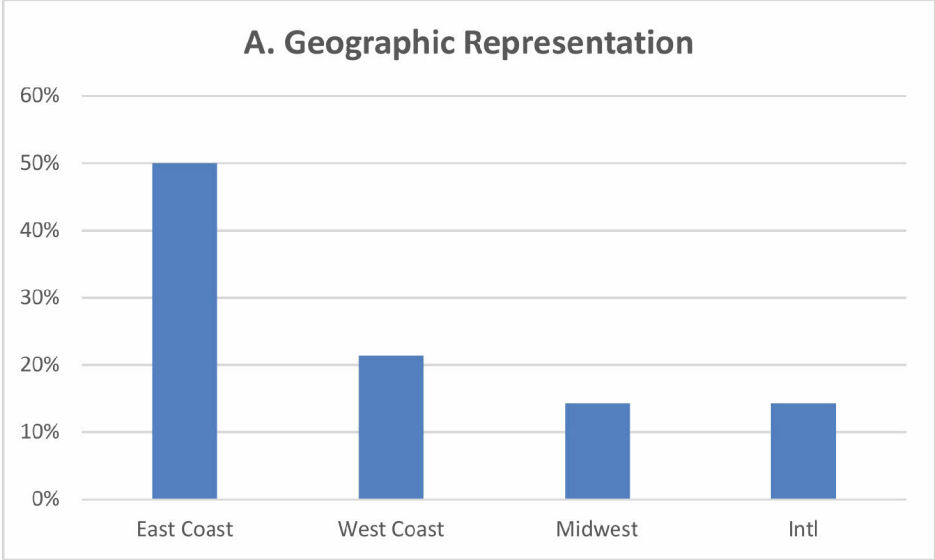
**David M. Rizzo, Ph.D.**  
University of California, Davis

**Mary E. Wilson, M.D.**  
University of California, San Francisco

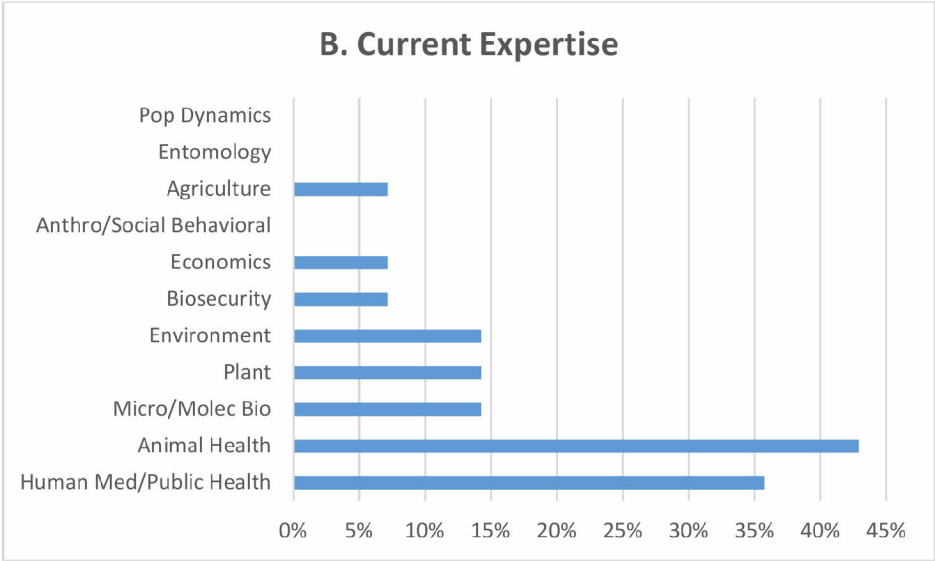
**Amy Pruden, Ph.D.**  
Virginia Tech

**Jonathan Rushton, Ph.D., M.A., M.AgSci.**  
University of Liverpool

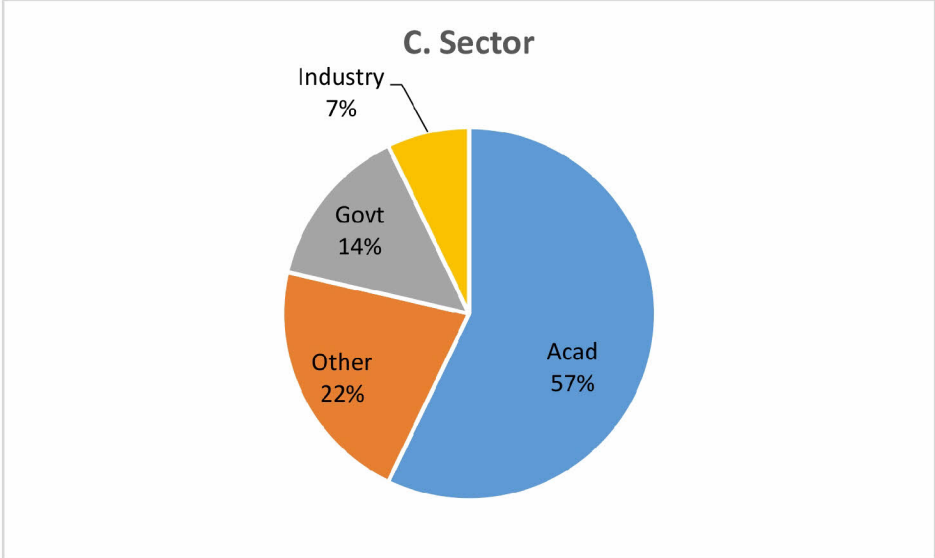
**MEMBERSHIP BREAKDOWN:  
By Location, Expertise, Sector, and Gender**



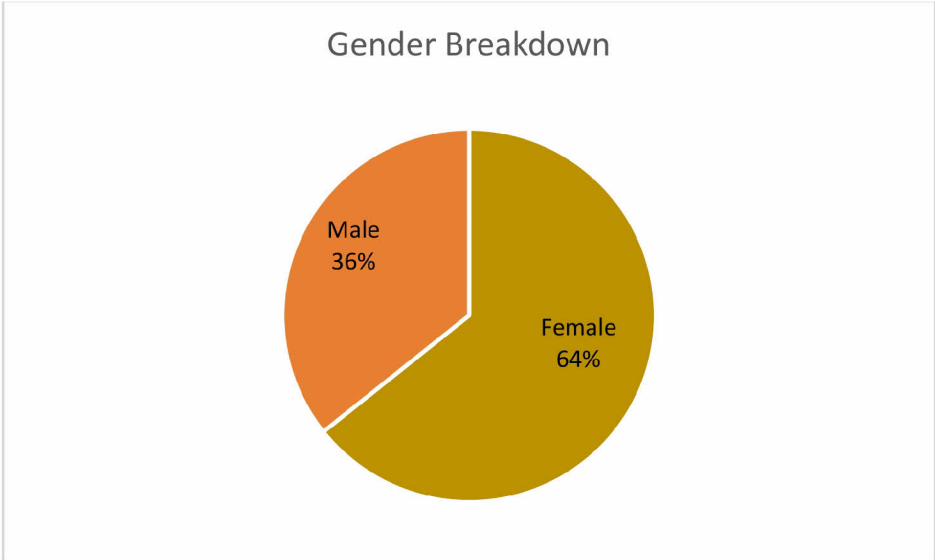
**Low geographic representation:**  
International  
Midwest



**Missing Expertise:**  
Demography/Population Dynamics  
Entomology  
Anthropology/Social and Behavioral Sciences



**Low Representation:**  
Industry  
Gov't



**Lower Representation:**  
Fewer males

## ONE HEALTH ACTION COLLABORATIVE (OHAC) MEETING #20

**DATE:** Tuesday, January 21, 2020

**PARTICIPANTS:**

*OHAC members* - Jonna Mazet (*chair*), Kevin Anderson, Casey Barton Behravesh, Gail Hansen, Elizabeth Hermsen, Jim Hughes, Maureen Lichtveld, Sally Miller, Liz Mumford, Amy Pruden, Dave Rizzo, and Mary Wilson

(Absent: Peter Daszak and Jonathan Rushton); REDACTED (formerly UC Davis)

*Staff:* Julie Pavlin, Edith Amponsah, and Hannah Goodtree (National Academies)

**AGENDA:**

1) Welcome and updates; 2) Food Safety deliverable; 3) One Health and State and Local Associations deliverable; 4) Other brief updates; 5) Next steps and action items

### KEY DISCUSSION POINTS

#### 1. Welcome and updates

Edith welcomed everyone to the call and noted that this is the 20<sup>th</sup> OHAC meeting. Edith reminded everyone that since the last call in November, Yamrot Negussie (Yami) has left the National Academies and Ceci Shah is no longer director of the Forum on Microbial Threats (FMT). The forum is now temporarily led by [Julie Pavlin](#).

Julie introduced herself to OHAC members. She stated that she is the acting director of the forum and that [Gillian Buckley](#) will start transitioning as forum director next month and is expected to be on staff full time by April. Gillian is a Senior Program Officer at the National Academies of Sciences, Engineering, and Medicine (NASEM), and has been at the National Academies for 10 years. She is currently completing a consensus study on [Stronger Food and Drug Regulatory Systems Abroad](#).

Jonna informed OHAC members that REDACTED has transitioned to the World Health Organization headquarters in Geneva. REDACTED is now working as a technical consultant at the Emergency Operations Center of the Health Emergencies Programme, working specifically with the Democratic Republic of Congo (DRC) Ebola outbreak response team.

- Jonna added that REDACTED will continue to support the deliverables she's been a part of (One Health workers and food safety and plant health).
- Mary added that REDACTED has been terrific to work with and wondered if she will be attending the World One Health Congress meeting in Edinburgh in June 2020. Mary also inquired about REDACTED new email so that she and others may continue to be in contact with her.
- Jonna responded that she will defer to REDACTED to send a note to OHAC members and share her new contact information.

#### 2. Food Safety deliverable

As co-leads on the food safety deliverable, Sally and Dave provided an update on the status of the manuscript. Sally stated that the manuscript is almost ready to be submitted to the American Journal of

Public Health (AJPH). She added that Maureen will provide final review of the manuscript before it is submitted.

- Sally also commented on [REDACTED] contribution to the paper, which included a case study and a table connecting each case study theme to plant health and its public health impact.
- Dave agreed with Sally's comments and added that some work needs to be done with the references and formatting of the paper.
- Dave added that the next step is to complete the cover letter required for submission. Dave inquired from Maureen about examples of cover letters to use as a template to work from.
  - Edith responded that she has been working with Maureen to draft a cover letter and will share the updated draft with the subcommittee following this call.<sup>1</sup>
- Mary noted that the paper has shaped up nicely. She suggested adding the term One Health in the abstract because the abstract is the initial access to the manuscript, and sometimes the only access to the manuscript for some, so it is important to have the term appear early on in the manuscript.
  - Sally, Dave, and Jonna agreed with Mary's assessment.
  - Maureen commented that this paper is a good example of teamwork with subcommittee members contributing to the writing of the paper.
- As corresponding author, Sally will submit the manuscript to AJPH.
  - Maureen added that she would like to review the manuscript before it is submitted and can make some internal calls after it is submitted to AJPH.

### 3. One Health and State and Local Associations concept note

Gail provided a brief overview of the motivation for developing a deliverable on implementing One Health on the state and local levels, emphasizing the importance of providing guidance to local and state organizations on implementing One Health policies.

- Gail added that she has been working with Cheryl Stroud from the One Health Commission to explore some case studies and to begin putting together a business case for the deliverable.
- She noted that there is interest in providing international case studies, or expanding the scope of the deliverable to include local organizations outside of the U.S.
- Gail stated that currently, the subcommittee members for this deliverable are herself, Jonathan, Jonna, and Cheryl.
  - Other possible members who have been suggested by OHAC and FMT members are [Lilly Kan](#), senior director of infectious disease and informatics at the National Association of County & City Health Officials (NACCHO) and [Amanda Beaudoin](#), director of One Health antibiotic stewardship at the Minnesota Department of Health.
- Liz and Casey volunteered to serve on the subcommittee for this deliverable.
- Mary suggested including in the American Society of Microbiology (ASM) to the list of organizations/audience the deliverable will target.

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<sup>1</sup> Subcommittee members have finalized the cover letter since this call.

- On the subject of expanding the audience beyond the U.S., Liz opined that there are pros and cons of widening the audience, and it may lead to complications in terms of language and focus of the deliverable.
- Gail agreed with Liz’s comment and noted that Jonathan is the only international contributor of the deliverable so the group may consider bringing on more international stakeholders.
- Maureen stated that she is active in the Caribbean and that there are at least two organizations in the English speaking Caribbean that are very active in the One Health area. She volunteered to connect the group to these organizations if interested.
  - Gail included that many South American countries are active in One Health on the state and local levels.
- Jim Hughes suggested the Association of Public Health Laboratories (APHL) and the Association of Public and Land-grant Universities (APLU) be added to the list of organizations/audience the deliverable will target.
- Gail questioned if subcommittee members would prefer to have the deliverable be international or U.S. focused.
  - Jonna responded that it is reasonable to go either way, adding that though OHAC is within FMT which is a National Academies activity and U.S. based, there is a global focus and OHAC has made international recommendations in its deliverables in the past.
  - Jonna continued that the subcommittee will evaluate the scope of the deliverable as work begins on it.
  - Liz concurred with Jonna that the scope of the deliverable will depend on how work on it evolves. Additionally, she suggested that the focus could be somewhere close to the middle, mostly focused on the U.S. but with a case study from a Caribbean or other international country.
  - Jonna agreed with Liz’s suggestion and noted that the One Health Workforce consortium she is part of has partners in the Caribbean that could be potential resources.

#### **4. Other brief updates**

- World One Health Congress
  - Jonna updated the group on the joint side event with the One Health Workforce – Next Generation at the World One Health Congress in June. Jonna informed that she (representing the One Health Workforce – Next Generation), Julie, Edith, and Hannah (National Academies) had a conference call with organizers from the One Health Platform to discuss the side event.
  - Jonna noted that the representatives from the One Health Platform are thrilled about a partnership with OHAC and the National Academies, and with the One Health Workforce – Next Generation.
  - Jonna continued that the organizers from the One Health Platform selected the proposal for the side event as one of their top preferences out of the 30 submitted proposals.

- Additionally, the organizers stated on the call that they would waive the food and beverage fee associated with having more than 50 participants in a side event in the spirit of partnership.<sup>2</sup>
  - Dave inquired about the updated proposal for the side event. Jonna will recirculate the proposal.
  - Julie added that staff is excited to see OHAC help push this agenda forward and inquired about the support that would be required by staff.<sup>3</sup> She also added that staff can help disseminate the event through the National Academies communications office.
  - OHAC members who will be/are planning on attending the One Health Congress event:
    - Jonna Mazet
    - Liz Mumford
    - David Rizzo
    - Casey Barton Behravesh
    - Peter Daszak
    - Gail Hansen (definite maybe)
    - Mary Wilson (hoping to attend)
  - Dave informed the group that he submitted an abstract of the plant health and food safety manuscript to the World One Health Congress.
    - Dave thanked subcommittee members for their feedback and edits to the abstract.
  - Jonna reminded the group that OHAC's first deliverable, Core Competencies in One Health Education, was highlighted at the 2018 International One Health Congress. Jonna expressed her hope for OHAC to be represented in a similar capacity at this year's Congress through the food safety abstract.
- One Health timeliness metrics for outbreak response
  - Jonna updated the group on a meeting she participated in on the establishment of One Health timeliness metrics for outbreak response organized by Ending Pandemics and the Salzburg Global Summit.
  - Jonna praised the meeting organizers for bringing together a diverse group of people representing different demographics, organizations, and countries. She continued that the outcome of the meeting was intended to build upon or to supplement human-only outbreak timeliness metrics.
  - Jonna stated that at the end of the meeting, it was decided that the One Health outbreak metrics should replace the human health metrics because the metrics were developed to be species agnostic and useful for human to human outbreaks as well as outbreaks with more complicated interactions.

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<sup>2</sup> The side event is expected to have 130 participants and audience members. The event will be open to conference attendees to allow for panelists and speakers to present to a broader interested audience. The side event is expected to occur on Sunday June 14<sup>th</sup>.

<sup>3</sup> Staff and Jonna will communicate about staff participation and support for the event.

- Jonna brought it to the group’s attention that there will be a more detailed paper than the Salzburg Global Statement which was shared with the group before the call.
- Gordon & Betty Moore Foundation Foresight Memo
  - Jonna commended the Moore foundation for highlighting One Health in this memo and considering it a cutting edge area that foundations should think about, noting that other organizations will follow suit.
  - Jonna also expressed her gratitude to OHAC members for their thoughtful comments and contributions to the Gordon and Betty Moore Foundation foresight memo in a short period of time.
  - Jonna acknowledged that it was a challenge to discuss everything in a three-page document, but noted that the group did well with staying within the focus of the team, which was more human patient care focused.
  - Jonna added that perhaps the document can be repurposed to discuss other themes.
- On the subject of incorporating the social sciences in OHAC activities or membership makeup, Jonna stated that it has been an ongoing goal of the group to have an inclusive membership but have yet to bring it to fruition.
  - Jonna presented to the group the option of adding a new member from the social sciences sector.
  - Liz proposed that in addition to filling this gap in membership, the group could consider engaging in activities that highlight or include a behavioral sciences approach. Providing human health examples of how a behavioral science approach would have benefited Ebola control efforts in 2015 and ongoing issues with measles, Liz acknowledged that similarly, One Health requires involvement from non-traditional health sectors.
  - Jonna agreed with Liz’s comments and opined that the behavioral sciences and community engagement are areas which OHAC would benefit from.
  - Jonna suggested that perhaps a deliverable could be developed to address this gap. A subcommittee for such a deliverable could be a way to engage with experts in those fields, Jonna added.
  - Liz commented that a good starting point would be compiling names of potential stakeholders with expertise in behavioral science and community engagement.
  - Maureen expressed support of the ideas discussed by Liz and Jonna. Using Hurricane Katrina as an example, Maureen explained how non-chemical stressors such as economics and socio-demographics played a role in community resilience (see resulting [consensus study](#) and report Maureen contributed to).
  - To provide a framework for discussion, Liz urged the group to think of a scenario where including a behavioral or social science approach is best practice for addressing the problem.
- Julie announced to OHAC members that the next FMT workshop will explore “The Critical Public Health Value of Vaccines in the Age of Pandemics” and will be held May 28–29, 2020 in Washington, DC. The workshop will explore vaccine hesitancy as well as access to vaccines.



- Jonna inquired about nominations or self-nominations for chair of OHAC as her term has come to an end. She encouraged the group to think about nominees to discuss on the next call and to reach out if interested in learning more about her experiences chairing the group.
- Edith proposed to hold the May OHAC meeting in person during the FMT vaccines workshop.<sup>4</sup>
  - Jonna supported this proposal and added that holding the meeting in person at the workshop would give the group the opportunity to update forum members and solicit their participation in OHAC.

## 5. Next steps and action items

- Staff:
  - Edith will send an email to OHAC members soliciting nominations and recommendations for a possible new member with expertise in the social and behavioral sciences or for topic ideas to address the gap in representation of the social sciences. [*forthcoming*]
  - Julie will inquire about Amanda Beaudoin and Lilly Kan's interest in participating in the subcommittee for the deliverable on implementing One Health at the state and local levels.<sup>5</sup> [**completed**]
- OHAC members
  - Jonna will recirculate the side event proposal. [**completed**]

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<sup>4</sup> There was general consensus and agreement to hold the May meeting in person at the next FMT workshop.

<sup>5</sup> Amanda Beaudoin confirmed her interest in joining the subcommittee. Staff is waiting on Lilly Kan's response to the email querying her interests.

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 02/10/2020 3:27:15 PM (-08:00)  
**To:** "Samantha Maher" <maher@ecohealthalliance.org>  
**Cc:** "Mary Radford" <maradford@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: GVP BOD Metting handouts

Not sure we need them all printed. Whatever you two think is best/necessary. I will try to get folders.  
See you there,  
Jonna

On Mon, Feb 10, 2020 at 1:55 PM Samantha Maher <[maher@ecohealthalliance.org](mailto:maher@ecohealthalliance.org)> wrote:  
Thanks Jonna- I can get all of these documents printed (aside from the ones you've already done).

Cheers,

Sam

On Mon, Feb 10, 2020 at 9:52 PM Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:  
Thanks -- sent in a separate chain that I have all of those on the stick, but I didn't print any of them. I have printed the appropriate ELSI documents & BCA brief, as well as the MacArthur 2-pager for fundraising.  
Travel well,  
Jonna

On Mon, Feb 10, 2020 at 1:41 PM Samantha Maher <[maher@ecohealthalliance.org](mailto:maher@ecohealthalliance.org)> wrote:  
Hi Jonna,

I'm flying in straight from Cote D'Ivoire so I won't have any materials with me. I was planning on printing whatever is needed at the hotel the night before.

If you'd like to send me a copies of the documents that we need hard copies of, I would be happy to print everything out together.

To the best of my knowledge, the documents we were planning on distributing are all added as attachments to the email that Peter sent out to the board today. Peter, can you confirm that this is everything?

Best,

Sam

On Mon, Feb 10, 2020 at 9:34 PM Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:  
Hi Sam,  
Are you bringing folders or anything to pass out to the board members? I have some documents that we should probably put into a hand-out folder.  
Let me know what you are bringing & thinking.  
I'm also bringing thumb drives that have the documents and Power Points on them. If you have any documents that will be distributed or that they should have as a take-away, please send & I will add to the thumb drives.  
Thanks,  
Jonna

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 03/13/2020 2:40:50 PM (-07:00)  
**To:** "Phyllis D. Meadows" <PDMeadows@kresge.org>  
**Cc:** "Bassett, Mary Travis" <mbassett@hsph.harvard.edu>; "Besser, Richard" <rbesser@rwjf.org>; "Borel, Bridget" <BBorel@nas.edu>; "Brown, Lisa" <LBrown@nas.edu>; "David A Relman" <relman@stanford.edu>; "Diane Griffin" <dgriffi6@jhmi.edu>; "Downey, Autumn" <ADowney@nas.edu>; "Embrey, Ellen" <eembrey@stratitia.com>; "Faulknor, Jill" <jbaker@rwjf.org>; "Georges Benjamin" <georges.benjamin@apha.org>; "John Hick" <[REDACTED]>; "Kester, Kent /US" <Kent.Kester@sanofi.com>; "Kristian G. Andersen" <[REDACTED]>; "Logan, Kendall" <KLogan@nas.edu>; "Mark Smolinski" <mark@endingpandemics.org>; "O'Toole, Tara" <totoole@iqt.org>; "Patricia King" <[REDACTED]>; "Pavlin, Julie" <JPavlin@nas.edu>; "Peisch, Samuel Francis" <speisch@hsph.harvard.edu>; "Pope, Andrew" <APope@nas.edu>; "Shore, Carolyn" <CShore@nas.edu>; "Trevor Bedford" <trevor@bedford.io>; "Walt, David" <dwalt@bwh.harvard.edu>; "Wollek, Scott" <SWollek@nas.edu>; "alp81@georgetown.edu" <alp81@georgetown.edu>; "andre@ecohealthalliance.org" <andre@ecohealthalliance.org>; "daszak@ecohealthalliance.org" <daszak@ecohealthalliance.org>; "harvey.fineberg@moore.org" <harvey.fineberg@moore.org>; "mnavish@iqt.org" <mnavish@iqt.org>; "peggy@hbfam.net" <peggy@hbfam.net>  
**Subject:** Re: Recap of Topics from the First Meeting of the Standing Committee on Emerging Infectious Diseases

Thanks for developing the comprehensive list. I think we also need to emphasize the immediate need to evaluate how widespread current exposure is to be able to make immediate recommendations on work & school closures & travel. Serology is available to make this assessment & it may be our best chance to stem ongoing economic impacts (diagnostics & Surveillance: Short-term & Risk Communication).

Looking good,  
Jonna

On Fri, Mar 13, 2020 at 2:28 PM Phyllis D. Meadows <[PDMeadows@kresge.org](mailto:PDMeadows@kresge.org)> wrote:

Hello Lisa:

Given there is some evidence this virus is a mutation from the SARS - CoVid, it would be important to understand and follow variations of the virus over time? I just noted a variation of this question under the section Diagnostics and Surveillance.

Regarding risk factors - I'm not sure I agree that information under risk factors - specifically "Socio-economic and behavioral factors is sufficiently clear. I believe the interest was in understanding the economic impacts of the virus and whether there were differences in response.

It is also likely that we'll need to effectively engage the private sector in development and testing - it will be important to understand the most effective systems for engagement and delivery. We also need to assess/evaluate the efficacy of EUA policies in viral response.

Surprisingly, we did not discuss prevention measures such as assessing policies and protocols for screening and testing. There also should be analysis of coverage policies (barriers and opportunities) related to testing, treatment and care.

Otherwise...this looks like a good start. Thanks for inviting me to the table.

March 13, 2020, 5:23 PM

**From:** Brown, Lisa <[LBrown@nas.edu](mailto:LBrown@nas.edu)>

**Sent:** Friday, March 13, 2020 5:01 PM

**To:** [harvey.fineberg@moore.org](mailto:harvey.fineberg@moore.org) <[harvey.fineberg@moore.org](mailto:harvey.fineberg@moore.org)>; Kristian G. Andersen <[REDACTED]>; Diane Griffin <[dgriffi6@jhmi.edu](mailto:dgriffi6@jhmi.edu)>; 'O'Toole, Tara' <[totoole@iqt.org](mailto:totoole@iqt.org)>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Phyllis D. Meadows <[PDMeadows@kresge.org](mailto:PDMeadows@kresge.org)>; [peggy@hbfam.net](mailto:peggy@hbfam.net) <[peggy@hbfam.net](mailto:peggy@hbfam.net)>; David A Relman <[relman@stanford.edu](mailto:relman@stanford.edu)>; Mark Smolinski <[mark@endingpandemics.org](mailto:mark@endingpandemics.org)>; Bassett, Mary Travis

<[mbassett@hsph.harvard.edu](mailto:mbassett@hsph.harvard.edu)>; Trevor Bedford <[trevor@bedford.io](mailto:trevor@bedford.io)>; Georges Benjamin <[georges.benjamin@apha.org](mailto:georges.benjamin@apha.org)>; Besser, Richard <[rbesser@rwjf.org](mailto:rbesser@rwjf.org)>; John Hick [REDACTED]; <[alp81@georgetown.edu](mailto:alp81@georgetown.edu)> <[alp81@georgetown.edu](mailto:alp81@georgetown.edu)>; Embrey, Ellen <[eembrey@stratitia.com](mailto:eembrey@stratitia.com)>; Walt, David <[dwalt@bwh.harvard.edu](mailto:dwalt@bwh.harvard.edu)>; <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Kester, Kent /US <[Kent.Kester@sanofi.com](mailto:Kent.Kester@sanofi.com)>; Patricia king [REDACTED]

Cc: Pope, Andrew <[APope@nas.edu](mailto:APope@nas.edu)>; Pavlin, Julie <[JPavlin@nas.edu](mailto:JPavlin@nas.edu)>; Shore, Carolyn <[CShore@nas.edu](mailto:CShore@nas.edu)>; Wollek, Scott <[SWollek@nas.edu](mailto:SWollek@nas.edu)>; Borel, Bridget <[BBorel@nas.edu](mailto:BBorel@nas.edu)>; Logan, Kendall <[KLogan@nas.edu](mailto:KLogan@nas.edu)>; Peisch, Samuel Francis <[speisch@hsph.harvard.edu](mailto:speisch@hsph.harvard.edu)>; Faulknor, Jill <[jbaker@rwjf.org](mailto:jbaker@rwjf.org)>; <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)> <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>; <[mnavish@iqt.org](mailto:mnavish@iqt.org)> <[mnavish@iqt.org](mailto:mnavish@iqt.org)>; Downey, Autumn <[ADowney@nas.edu](mailto:ADowney@nas.edu)>

**Subject:** Recap of Topics from the First Meeting of the Standing Committee on Emerging Infectious Diseases

Hello all,

Thanks so much for a fantastic first meeting of the Standing Committee on Emerging Infectious Diseases and 21<sup>st</sup> Century Health Threats. We are very grateful that you took an entire afternoon to meet and speak with the sponsors. In follow up to the meeting and in response to a request from the sponsors, staff drafted an initial list of research topics. This list of research topics was compiled based on discussions held at the meeting, as well as from the list of topics you and the sponsors submitted before the meeting. We wanted to give you a chance to review and provide feedback, mainly if something is inaccurate, points should be reorganized, etc. **We are asking for you to review this document and to provide your feedback by 8 a.m. ET tomorrow morning (3/14).** This recap will eventually be made public on our website and shared with the sponsors.

Please let us know if you have any questions.

Many thanks,  
Lisa

Lisa Brown, MPH  
Senior Program Officer  
Board on Health Sciences Policy  
Health and Medicine Division  
The National Academies of Sciences, Engineering, and Medicine  
[500 Fifth Street, NW, Washington, DC 20001](https://www.nationalacademies.org/500-Fifth-Street-NW-Washington-DC-20001)  
202-334-2487 (office)  
[lbrown@nas.edu](mailto:lbrown@nas.edu)

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**From:** Brown, Lisa

**Sent:** Tuesday, March 10, 2020 7:41 PM

**To:** 'harvey.fineberg@moore.org' <[harvey.fineberg@moore.org](mailto:harvey.fineberg@moore.org)>; 'Kristian G. Andersen' <[REDACTED]>; 'Diane Griffin' <[dgriffi6@jhmi.edu](mailto:dgriffi6@jhmi.edu)>; 'O'Toole, Tara' <[totoole@iqt.org](mailto:totoole@iqt.org)>; 'Jonna Mazet' <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; 'Phyllis D. Meadows' <[PDMeadows@kresge.org](mailto:PDMeadows@kresge.org)>; 'peggy@hbfam.net' <[peggy@hbfam.net](mailto:peggy@hbfam.net)>; 'David A Relman' <[relman@stanford.edu](mailto:relman@stanford.edu)>; 'Mark Smolinski' <[mark@endingpandemics.org](mailto:mark@endingpandemics.org)>; 'Bassett, Mary Travis' <[mbassett@hsph.harvard.edu](mailto:mbassett@hsph.harvard.edu)>; 'Trevor Bedford' <[trevor@bedford.io](mailto:trevor@bedford.io)>; 'Georges Benjamin' <[georges.benjamin@apha.org](mailto:georges.benjamin@apha.org)>; 'Besser, Richard' <[rbesser@rwjf.org](mailto:rbesser@rwjf.org)>; 'John Hick' [REDACTED]; <[alp81@georgetown.edu](mailto:alp81@georgetown.edu)>; Embrey, Ellen <[eembrey@stratitia.com](mailto:eembrey@stratitia.com)>; Walt, David <[dwalt@bwh.harvard.edu](mailto:dwalt@bwh.harvard.edu)>; <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Kester, Kent /US <[Kent.Kester@sanofi.com](mailto:Kent.Kester@sanofi.com)>; 'Patricia king' [REDACTED]

**Cc:** Pope, Andrew <[APope@nas.edu](mailto:APope@nas.edu)>; Pavlin, Julie <[JPavlin@nas.edu](mailto:JPavlin@nas.edu)>; Shore, Carolyn <[CShore@nas.edu](mailto:CShore@nas.edu)>; Wollek,

Scott <[SWollek@nas.edu](mailto:SWollek@nas.edu)>; Borel, Bridget <[BBorel@nas.edu](mailto:BBorel@nas.edu)>; Logan, Kendall <[KLogan@nas.edu](mailto:KLogan@nas.edu)>; 'Peisch, Samuel Francis' <[speisch@hsph.harvard.edu](mailto:speisch@hsph.harvard.edu)>; 'Faulknor, Jill' <[jbaker@rwjf.org](mailto:jbaker@rwjf.org)>; '[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)' <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>; '[mnavish@igt.org](mailto:mnavish@igt.org)' <[mnavish@igt.org](mailto:mnavish@igt.org)>

**Subject:** Information and Briefing Materials for the First Meeting of the Standing Committee on Emerging Infectious Diseases

**Importance:** High

Greetings Committee,

We are looking forward to convening the first meeting of the *Standing Committee on Emerging Infectious Diseases and 21<sup>st</sup> Century Health Threats* tomorrow, **Wednesday, March 11<sup>th</sup>, from Noon – 5:30 p.m. ET**. Thanks so much again for your willingness to participate on such short notice, and we are excited to work with you on this very important initiative. Attached you will find the following:

- **Final Agenda** – Please note that tomorrow’s meeting will consist of both closed and open sessions. The committee will be in closed session from Noon – 1:30 p.m. ET to become oriented with the task and role of the standing committee and to conduct a brief bias and conflict of interest discussion. The meeting will open to the public from 1:30 p.m. to 5:00 p.m. ET. During the open session, the committee will hear from and engage with the sponsors on specific issues, and the committee will also have time to discuss its topics and issues of interest with the sponsors. The meeting will close at 5:00 p.m. ET, and the committee will debrief and discuss next steps until about 5:30 p.m. ET.
- **Remote Participation Zoom/Call-In Information** – As the meeting consists of both closed and open sessions, we will be using two different Zoom meeting log-ins. Please find attached the Zoom and call-in information.
  - Please use the closed meeting details to access the closed sessions from Noon – 1:30 p.m. ET and 5:00 p.m. – 5:30 p.m. ET.
  - For the open session, each of you has a specific URL link to use, which will identify you as a participant and not an individual from the public. These URL links are unique to use, so please don’t share them with others. Please click on the link by your name in the table to join the event.
  - If you are having trouble connecting to Zoom, please contact Kendall Logan, [klogan@nas.edu](mailto:klogan@nas.edu)
- **Electronic Briefing Materials** – You can also access the electronic briefing book [here](#).
  - Directly following the table of contents under Tab 1, you will find the final agenda and remote participation Zoom and call-in information.
  - Tabs 2 and 3 contain information about the committee membership, statement of task, and a description of what standing committees can do. If you have any edits to your contact information, affiliation, or biosketch, please let us know.
  - Tab 4 includes research questions and topics suggested by the sponsors and committee members related to the COVID-19 outbreak (also attached separately for your convenience), and Tab 5 contains several articles related to these topics.
  - Tab 6 contains background information on the National Academies and the Health and Medicine Division. Please bring to the staff’s attention any other relevant materials we should secure for the committee at any point during this activity.

If you have colleagues interested in attending the open session, they can register at <https://www.eventbrite.com/e/1st-meeting-on-emerging-infectious-diseases-and-21st-century-health-threats-registration-99208448139>.

Lastly, if you have not yet returned your bias and conflict of interest form, please do so as soon as possible.

Please let us know if you have any questions.

Very best,  
Lisa

Lisa Brown, MPH  
Senior Program Officer  
Board on Health Sciences Policy  
Health and Medicine Division  
The National Academies of Sciences, Engineering, and Medicine  
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**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/15/2020 10:13:40 PM (-07:00)  
**To:** "Johnson Christine Kreuder (ckjohnson@ucdavis.edu)" <ckjohnson@ucdavis.edu>; "David J Wolking" <djwolking@ucdavis.edu>; "Jonna Mazet (jkmazet@ucdavis.edu)" <jkmazet@ucdavis.edu>;  
**REDACTED**  
**Cc:** "William B. Karesh" <karesh@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Kevin Olival" <olival@ecohealthalliance.org>; "Aleksi Chmura" <chmura@ecohealthalliance.org>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>  
**Subject:** EHA's response to the USAID RFI questions.  
**Attachments:** STOP Spillover RFI Comments EHA.docx  
**Importance:** High

CKJ, Jonna, David, Christian,

Here are EHA's responses to the RFI Questions.

Cheers,

Peter

**Peter Daszak**  
*President*

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*EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation*



10 March 2020

EcoHealth Alliance response to USAID “Strategies TO Prevent (STOP) Spillover” Request for Information (RFI) Number 7200AA20RFA00007

**1. Which would be more effective towards accomplishing the goals of the RFI; multiple awards divided by geographic region and/or technical focus or one centralized award? Please provide rationale and specific recommendations.**

One centralized award would be more effective towards accomplishing project goals, allowing for consistent approaches to monitor (sample collection, testing protocols) and characterize (analytical and behavioral methods) zoonotic disease risk across countries. A single award will streamline the refinement, adaptation, and scalability of efforts. Extensive coordination and engagement of government and other partners will also be crucial to promote awareness, buy-in, and sustainable capacity transfer and ultimately maintenance. We anticipate that coordination of multiple awards, especially if divided by technical focus, could be burdensome for key stakeholders and inadvertently stress existing personnel and national systems. Division by technical focus also risks creation of vertical or siloed capacity that is not agile nor able to rapidly scale up for other diseases or situations. From experience with PREDICT, resources occasionally needed to be shifted within the project to a geographic focus of need, or expanded to a new geography (e.g. West Africa post Ebola outbreak), which can be more effectively and efficiently accomplished within a single overarching project management system. This is a major limitation of prior global health investments by other donors and does not sufficiently prepare countries for known and novel threats. The functionality of wildlife health systems will rely on multiple components (e.g. initial and progressive training, sample and chain management, biosafety and biosecurity, diagnostics, reporting, intervention design and rollout, evaluation); therefore, it is crucial that inputs to develop the system be coordinated for seamless integration tailored to each project country. A centralized award would also account for variability in countries to promote outputs of wider utility that deliver benefits beyond project countries where risk reduction is also needed (e.g. via training materials, protocols, methods, interventions, etc.).

**2. Please comment on the countries listed in Section 4 STOP Spillover Goal & Objectives of the draft program description. Are the countries listed the right countries in which to implement based on low capacity and high risk for the prioritized viruses? Should additional countries be added? Should some be removed? Please provide rationale.**



The rationale for selection of countries is appropriate and targeted to countries with heightened risk (“hotspot” countries for disease emergence) and severe deficits in public, animal and environmental health capacity demonstrated by the consequences of recent zoonotic disease outbreaks. In particular, the regional coverage is strategic given the frequent movement of people and animals, particularly in West Africa and Southeast Asia. Accordingly, we would recommend also including Malaysia to promote continuity of efforts and improved monitoring of cross-border disease risk. Despite its relatively prosperous image, Malaysia has many challenges: Political instability, corruption, disparity in public health coverage in different states (Sabah, Sarawak vs. Peninsular Malaysia), presence of disenfranchised communities (e.g. large undocumented communities in Sabah, Orang Asli), extensive wildlife trade networks that supply other southeast Asian countries and China. Malaysia has made some critical investments of value to this program, including wildlife surveillance capacity, e.g. through its federal Department of Wildlife and National Parks (PERHILITAN) and Sabah Wildlife Department, all of which partnered with EPT PREDICT. There is also political will to strengthen surveillance with support from US partners. Malaysia is strategically positioned to help with regional surveillance and spillover prevention as it shares borders with Thailand and Indonesia and includes established high-risk interfaces such as land-conversion, wildlife trade, and agricultural expansion. There is anticipated amplification of risk of disease emergence with the planned move of the Indonesian capital, Jakarta, to Borneo, which will cause massive ecological disruption, potentially increasing the exposure of thousands of people to unknown pathogen. Sabah state has limited capacity to detect and respond to zoonotic disease spillover and will be a crucial point of defense in an EID hotspot. We would also recommend that Thailand be included as a regional hub for strengthening capacity for diagnostics, surveillance, and risk characterization and management in South and Southeast Asian countries. Thailand is also a logical choice to facilitate collaboration with WHO and FAO, who have regional offices there.

Additional details reinforcing of the importance of project activities in the proposed countries include:

- *Liberia*: Wildlife in Liberia fall under the jurisdiction of the Forestry Development Authority (FDA) and Environmental Protection Agency (EPA), but there is no government agency responsible for wildlife health with mandated monitoring and response activities. There currently are no available training programs to build capacity in animal health or disease surveillance skills.
- 3. Are the zoonotic viruses noted in the Section 4 STOP Spillover Goal & Objectives of the draft program description the most important emerging zoonotic viruses on which to focus? If not, which would you add or delete? Please provide rationale.**

The rationale for the list of prioritized viruses is appropriate given their pandemic risk, the importance of wildlife reservoirs in maintenance or transmission, and the poor availability or use of interventions to date to prevent spillover at source. However the current COVID-19 pandemic is caused by a previously unknown coronavirus closely related to one discovered by the PREDICT team, and part of the SARS-CoV clade. Thus, we recommend targeting groups of viruses, rather than specific, known agents, so that we might be better prepared for future emergence of currently unknown relatives of the prioritized viruses. Potential expansion could consider:

- Other Nipah-like viruses (Henipaviruses) whose diversity is poorly characterized and which have a widely distributed bat reservoir. For example, there is evidence of henipavirus spillover in human populations in Central Africa, but currently there is no surveillance in human populations in Africa.
- Other high risk coronaviruses, such as the HKU-2 & -10 clades that have proven capacity to infect people. This includes Severe Acute Diarrhea Syndrome (SADS)-CoV that caused a largescale outbreak in pigs in China (>25,000 died) and can infect human cells in the lab.
- Other Filoviruses, for example recent evidence from India has demonstrated that Ebola-related (Asian strains) are likely spilling over in to high risk groups. Filoviruses have been discovered in bats in China, Bangladesh and likely occur throughout the Asian-African regions.
- A small number of pathogens (one or two) that are easily detectable in wildlife to promote ‘quick-wins’ for capacity strengthening that may build momentum for progressive capacity strengthening?
- Monkeypox?
- Other Arenaviruses, hemorrhagic fevers?

**4. Are there other illustrative applied research topics under Objective 1 that USAID should consider? Please provide examples and justification.**

- STOP Spillover should continue the work begun under PREDICT-1 & -2 to identify where the key risk of spillover is among varied geographies, communities, risk behaviors and interfaces. The scope of PREDICT-1 & -2 was not sufficient to provide a complete understanding of current risk because: 1) in a rapidly changing environment, the geography and communities involved in spillover events shifts; and 2) only largescale serological testing using broad platforms able to identify viral groups will allow us to identify which populations are truly at risk. For example, with COVID-19, the wildlife trade was clearly a pivotal part of the spillover of SARS-CoV-2. However, serological testing of rural communities in Yunnan province shows 0.44-2.89% of the population were exposed in the last 2-3 years to bat viruses (SARS antibodies last 2-3 yrs in recovered people). This suggests a non-wildlife trade related

spillover interface across the SE Asian distribution of rhinolophid bats of some 1-7.5 million people per year getting exposed to bat viruses.

- Given the expectation to engage with national One Health Coordination Mechanisms, another illustrative applied research topic could be the evaluation of policies and process solutions for strengthening wildlife health and One Health systems. For example, evaluating the impact of including wildlife disease reports in Integrated Disease Surveillance and Response reporting.
- Support the development and implementation of broad serological platforms that can be used by partner labs both for surveillance in human and animal populations and research to shed light on: 1) animal reservoirs for target viral groups; 2) historical exposure in humans and domestic animals to high consequence viruses – which provides evidence for high risk populations and human-animal interfaces (e.g. populations in Yunnan next to rhinolophid bat caves exposed to SARS-like viruses; populations consuming bats and exposure to filoviruses in India, and hunting communities exposed to henipaviruses in Africa)
- Objective 1 Illustrative Activity ‘Support economic analyses to demonstrate the value of investing in risk reduction interventions’ is proposed on a country-country basis and we interpret this to mean it may involve primary data collection for detailed micro-costing (e.g. disease or intervention costs at household level). While this is of great value given lack of existing data in most countries, we believe this activity could also be complemented by low-resource engagement in additional countries to ensure all project countries benefit from cost-effective interventions. We envision this could take the form of a series of One Health economics workshops to advance selection and uptake of cost-effective interventions in all project countries. A potential structure for the workshops over the project period could be: 1) issue identification and stakeholder analysis; 2) multi-sectoral cost estimate exercises; 3) intervention options; 4) cost-benefit analysis and selection of interventions for testing; and 5) evaluation and wider translation to prioritization/planning.

**5. Are there any additional risk reduction measures that have been tested in low- and middle-income countries that can be deployed right now? Please provide examples and note in which countries they might be useful.**

- PREDICT consortium launched a ‘Living safely with bats’ communication tool in >20 countries and 11 languages in response to the West African Ebola outbreak. This would be relevant for all countries listed in the RFI and could be expanded to a ‘Living safely with wildlife’ tool to engage communities on safe practices to limit contact with all wildlife. Thorough evaluation of the impact of this tool could be supported in STOP Spillover.
- Test efficacy of sentinel detection networks for wildlife diseases/die-offs as an early intervention/risk reduction measure in human populations. For example, empowering

hunters in Central Africa to report and avoid harvest of great ape carcasses as an input to Ebola virus detection and prevention (previously piloted in Gabon). Potentially relevant for all project countries and can be adapted to specific stakeholders and country context.

- Evaluation of changes to hygiene practices (e.g. site level infrastructure changes like hand-washing stations, or personal protective equipment) at sites with high levels of wildlife contact, e.g. in bat guano mining caves of Southeast Asia or in live animal wildlife markets.

**6. Given the competing demands and limited resources in our focus countries, how important is supporting a country's wildlife surveillance system focused at high risk interfaces to attain the RFI's stated goal?**

It is an extremely important (and to date largely overlooked) component of pandemic preparedness. Not doing so will perpetuate vulnerability to pandemic risk and resulting health and economic impacts. Countries face significant capacity gaps in surveillance, prevention and response to zoonotic pathogens from wildlife. This operational deficit is visible in the >70% of emerging infectious diseases that have spilled over from wildlife since 1940. A review of more than 100 published WHO Joint External Evaluation (JEE) and OIE Performance of Veterinary Services (PVS) mission reports (EcoHealth Alliance, unpublished) indicates that the majority of countries lack wildlife surveillance systems, and where they do exist, they have major gaps in capacity, scope, or coordination with other sectors. Because there is no global body that oversees wildlife health, it is essential that countries are enabled with support for developing and/or strengthening their own wildlife surveillance system. Without a functional wildlife surveillance system and risk-based surveillance that can inform appropriate interventions, local and global populations are left susceptible to the next outbreak and unable to cost-effectively mitigate pandemic threats. For example, wildlife surveillance efforts in West Africa led to the first detection of Zaire ebolavirus in a bat (Liberia), discovery of a novel ebolavirus in a bat (Sierra Leone) and identification of Marburg virus in bats in Sierra Leone. These findings were used by the governments of Liberia and Sierra Leone to inform public risk reduction strategies. In China, identification of SARS-related coronaviruses allowed for the rapid identification of the closest related virus (96% identical) to SARS-CoV2 and provided important evidence of a bat origin for the current pandemic.

**7. Globally, are there existing capacities or platforms within the wildlife sector that can be better leveraged to monitor spillover? Please provide examples and note in which countries they exist. Conversely, are there critical gaps within the wildlife sector that should be targeted for improved surveillance? Please provide examples and note in which countries they exist.**

- Unlike notifiable diseases in humans and domestic animals under the IHR and OIE Code, there is no official required reporting for most wildlife diseases. The OIE WAHIS-Wild database receives select reports from member countries, but reporting is voluntary, inconsistent, and highly biased to a few countries (which are outside of the proposed project countries).
- The OIE hosts a network of focal points for wildlife in its 182 member countries, with regional training events every few years. However, there is no infrastructure to routinely consult with countries on capacity in the interim nor assess and prioritize country needs for wildlife health systems.
- Unlike the JEE for public health and the PVS for veterinary services, there is no parallel tool that expressly includes wildlife and environment risk considerations for disease spillover (see World Bank 2018 “Operational Framework for Strengthening Human, Animal, and Environmental Public Health Systems at their Interface”). This is a major policy deficit as it means 1) capacity benchmarks are not established; 2) wildlife and environment capacity is under-developed and fragmented across agencies because of lack of attention and clear mandates; 3) the wildlife and broader environment sector may not immediately recognize relevance and entry points to contribute to, nor have the resources to do so. Public health collaboration should be considered in the design and implementation of National Biodiversity Strategies and Action Plans to mobilize environmental expertise and other resources in zoonotic disease prevention and detection. Wildlife sector input should be meaningfully included in PVS and JEE missions as well as development and implementation of multisectoral National Action Plans for Health Security.
- Current activities under the One Health Workforce program (USAID) include applied training for in-service professionals, including wildlife officers, to conduct surveillance for zoonotic viruses in free-ranging wildlife. This program is active in southeast Asia (Thailand, Malaysia, Indonesia, Vietnam) and Africa (Ethiopia, Tanzania, Uganda, Senegal, DRC, and Kenya).
- There are some examples of processes put in place to mitigate risk, such as safeguards. New Zealand uses standard operating procedures for Wildlife Health as part of management for reintroduction of threatened species. Various other countries, e.g. Bangladesh and Thailand, have officially adopted One Health principles and included the wildlife sector in their national strategic plans for emerging infectious diseases.
- Many developed countries routinely conduct passive or active wildlife disease surveillance, including screening of hunter-provided specimens. For avian influenzas, this is often targeted to high-risk interfaces for 1) mixing and re-assortment (important migratory bird areas, sites of wild-domestic animal contact such as farms in flyway settings) and 2) spillover to humans (e.g. live bird markets).

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 03/23/2020 3:28:38 PM (-07:00)  
**To:** "Becker, Michael" <mbecker@anl.gov>  
**Cc:** "JPavlin@nas.edu" <JPavlin@nas.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Becker, Michael" <mbecker@anl.gov>  
**Subject:** Re: COVID-19 structural biology links for NASEM OHAC and Forum

Thank you!  
Jonna

On Mon, Mar 23, 2020 at 1:02 PM Becker, Michael <[mbecker@anl.gov](mailto:mbecker@anl.gov)> wrote:

Dear Julie, Jonna, and Peter,

Perhaps the COVID-19 structural biology links and info below will be helpful to the OHAC and Forum.

(1) A running list of COVID-19 atomic-level structures:

<http://www.rcsb.org/news?year=2020&article=5e3c4bcba5007a04a313edcc>

(2) DOE's portal for scientists to gain COVID-19-focused rapid access to DOE x-ray and electron facilities for enabling structure-based drug and vaccine design:

<https://www.bnl.gov/structuralbio/>

(3) We learned that Erica Ollmann Saphire of the La Jolla Institute of Immunology was recently asked by the Gates Foundation to lead an antibody therapeutic effort against the virus. She has been leading a similar large effort against Ebola (and is a frequent user of our GM/CA@APS beamlines, <https://www.gmca.aps.anl.gov/>).

Sorry if these are already well known. If I can be helpful to the OHAC or Forum in any way, please let me know.

Thank you and best wishes,

Michael Becker

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/25/2020 8:38:28 PM (-07:00)  
**To:** "Walzer, Christian" <REDACTED>; "Jonna Mazet DVM, MPVM, PhD" <jkmazet@ucdavis.edu>; "Vertefeuille, Jan" <Jan.Vertefeuille@wwfus.org>  
**Cc:** "Keith Martin" <kmartin@cugh.org>; "Marc Valitutto" <valituttom@si.edu>; "Steven A. Osofsky" <s.osofsky@cornell.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; "Suzan Murray" <MurrayS@si.edu>; "Lieberman, Susan" <REDACTED>; "Fine, Amanda" <REDACTED>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@wwfus.org>  
**Subject:** RE: FOR REVIEW: Joint call to action on COVID-19

Hi Christian,

I asked Billy Karesh and Carlos Zambrana-Torrel here at EHA to suggest some minor edits, on top of Jonna's, which represent EHA's contribution.

I think the main issues are that 1) calling to close all wet markets would likely lead to underground trading and if an outbreak were to occur then it would be very difficult to trace and may spread more insidiously before detected. Also, many communities rely on wildlife trade for their survival, and it could be seen as culturally inappropriate. The first part of the bullet is much more aligned with how we think this issue could be addressed; 2) Calling for a halt to biodiversity loss is not exactly aligned with reducing pandemic risk, and seems to be a different agenda for a different policy statement.

Looking forward to seeing a revised version and if these two issues can be modulated, we'll sign on.

Cheers,

Peter

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*President*

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*EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation*

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**From:** Walzer, Christian [REDACTED]  
**Sent:** Tuesday, March 24, 2020 5:05 PM  
**To:** Jonna Mazet DVM, MPVM, PhD <jkmazet@ucdavis.edu>; Vertefeuille, Jan <Jan.Vertefeuille@wwfus.org>  
**Cc:** Keith Martin <kmartin@cugh.org>; Marc Valitutto <valituttom@si.edu>; Steven A. Osofsky <s.osofsky@cornell.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird <mkinnaird@wwf.panda.org>; Suzan Murray <MurrayS@si.edu>; Lieberman, Susan [REDACTED]; Fine, Amanda [REDACTED]; Catherine Machalaba <machalaba@ecohealthalliance.org>; Peter Daszak <daszak@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@wwfus.org>  
**Subject:** Re: FOR REVIEW: Joint call to action on COVID-19

Hi Jan and all,

My apologies for the delay. Thanks very much for pulling this together. Attached my comments, which address the ,illegal' focus and the use of the term ,wet' market.

Similarly, thanks for allowing me to comment.

Kind regards, stay safe and sane

Chris

---

Chris Walzer, Dr. med. vet., Dipl. ECZM (wph)  
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On 24.03.2020, at 14:18, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

**EXTERNAL EMAIL - Please Use Caution**

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Here you go, some edits from me for accuracy that can later help with ongoing credibility.  
Thanks for letting me weigh in & sorry not to be able to do that yesterday.  
Stay well & let's all please help promote calm,  
Jonna

Jonna AK Mazet, DVM, MPVM, PhD  
Professor of Epidemiology & Disease Ecology  
Executive Director, One Health Institute  
Director, One Health Workforce – Next Generation of USAID Emerging Threats Division  
Director Emeritus, PREDICT Project of USAID Emerging Threats Division



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For scheduling and logistical issues, please contact:

Ms. Mary Radford  
[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)  
+1-530-752-3630

On Mon, Mar 23, 2020 at 8:05 AM Vertefeuille, Jan <[Jan.Vertefeuille@wwfus.org](mailto:Jan.Vertefeuille@wwfus.org)> wrote:

All,

Thank you to those who offered their quick feedback over the weekend. To keep this moving, I've attached the next iteration of the letter. Please kindly review the attached and send back comments by COB Tuesday.

Best,

Jan

**From:** Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>  
**Sent:** Saturday, March 21, 2020 3:34 PM  
**To:** Vertefeuille, Jan <[Jan.Vertefeuille@WWFUS.ORG](mailto:Jan.Vertefeuille@WWFUS.ORG)>  
**Cc:** Marc Valitutto <[valituttom@si.edu](mailto:valituttom@si.edu)>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Christian Walzer <REDACTED>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; <REDACTED>; [machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org); Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>  
**Subject:** Re: FOR REVIEW: Joint call to action on COVID-19

It was very nice to speak with everyone this week.

Below is the link to the Global Health Security Agenda I was talking about.

We have an important opportunity to strengthen this global structure to prevent, detect and respond to potential pandemics.

<https://ghsagenda.org/>

Best

Keith

Keith Martin MD, PC  
Executive Director  
Consortium of Universities for Global Health  
Washington, DC  
[www.cugh.org](http://www.cugh.org)  
[@CUGHnews](https://twitter.com/CUGHnews) [@CUGH\\_TAC](https://twitter.com/CUGH_TAC)  
202-974-6363

Attend CUGH's 2021 Annual Conference, Houston, Texas

March 12-14, 2021, Satellite Sessions, March 11

On Sat, Mar 21, 2020 at 1:32 PM Vertefeuille, Jan <[Jan.Vertefeuille@wwfus.org](mailto:Jan.Vertefeuille@wwfus.org)> wrote:

Dear all,

I know how incredibly busy you all are and thank you to those who could join the call on Thursday.

We discussed coordinating a **scientist sign-on letter** that would be shared with specific decisionmakers in Asian countries, as well as serve as an open letter to donor agencies and nations about what needs to be done to help prevent the next zoonotic disease outbreak. This would be unbranded, so it is a collective call from the scientific community and civil society.

I've taken a stab at a first draft, borrowing liberally from the strong work this group and others have already put out there. (I am a campaigner, not a zoonotic disease expert, so forgive any errors I've made.) To have the most effect, it needs to be released very soon so I've kept it short and high-level in hopes that we can quickly agree on a common call to action on this.

We are also exploring creating a microsite that this letter could live on in multiple languages, allow additional experts to sign on after it's launched and link to the research and background you all have developed that provides greater direction for leaders. Would love to hear other ideas as well.

Can I ask for your quick read on this – no need to wordsmith at this point – and feedback by **COB Monday**? I will then take onboard your feedback and circulate a next draft.

Thank you!

Jan

-----Original Appointment-----

**From:** Vertefeuille, Jan

**Sent:** Monday, March 16, 2020 12:49 PM

**To:** Marc Valitutto; Steven A. Osofsky; Christine Kreuder Johnson; Maggie Kinnaird; Suzan Murray; Christian Walzer; Jonna

Mazet; [REDACTED]; [machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org); Peter Daszak; Keith Martin

**Subject:** Conservation & public health coordination COVID-19

**When:** Thursday, March 19, 2020 8:00 AM-9:00 AM (UTC-05:00) Eastern Time (US & Canada).

**Where:** [REDACTED]

### Draft Agenda

- COVID-19 efforts underway of relevance to the group (all)
- Opportunities for collective call to policymakers (discussion)
- Next steps, other ways to coordinate (discussion)



Hi there,

Jan Vertefeuille is inviting you to a scheduled Zoom meeting.

[Join Zoom Meeting](#)

Phone one-tap: US: [REDACTED]

Meeting URL: [REDACTED]

Meeting ID: **REDACTED**

**Join by  
Telephone**

For higher quality,  
dial a number  
based on your  
current location.

Dial:

**REDACTED**

Meeting ID: **REDACTED**

[International  
numbers](#)

<Open Letter to Global PolicymakersDraftv1 JM.docx>

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 04/02/2020 7:49:26 PM (-07:00)  
**To:** "Vertefeuille, Jan" <Jan.Vertefeuille@wwfus.org>  
**Cc:** "Steven A. Osofsky" <s.osofsky@cornell.edu>; "Suzan Murray" <MurrayS@si.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Keith Martin" <kmartin@cugh.org>; "Valitutto, Marc" <ValituttoM@si.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@wwfus.org>; "O Criodain, Colman" <cocriodain@wwfint.org>; "Aileo Weinmann" <WeinmannA@nwf.org>; "Martin Gilbert" <m.gilbert@cornell.edu>  
**Subject:** Re: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

You can list me,  
Jonna

Jonna AK Mazet, DVM, MPVM, PhD  
Professor of Epidemiology & Disease Ecology  
Executive Director, [One Health Institute](#)  
Director, [One Health Workforce – Next Generation](#) of USAID Emerging Threats Division  
Director Emeritus, [PREDICT Project](#) of USAID Emerging Threats Division  
Board of Directors, [Global Virome Project](#)

School of Veterinary Medicine  
University of California, Davis

[Institute for Global Health Sciences](#)  
University of California, San Francisco

For scheduling and logistical issues, please contact:  
Ms. Mary Radford  
[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)

On Wed, Apr 1, 2020 at 7:38 AM Vertefeuille, Jan <[Jan.Vertefeuille@wwfus.org](mailto:Jan.Vertefeuille@wwfus.org)> wrote:

Sue and WCS colleagues,

That's a disappointing decision, but thanks for working with us to refine the messaging and we look forward to continuing to collaborate on addressing this public health risk.

For others, we have worked to make this a strong call to action that allows enough flexibility to be adaptable to different contexts – high-risk markets and high-risk taxa will vary by geographic and cultural context and policy advocacy will need to be different from country to country. I look forward to others' input and sign-off.

And Aileo, your comment is noted and we can modify the language around Asian urban markets.

Best,

Jan

---

**From:** Lieberman, Susan <[REDACTED]>  
**Sent:** Tuesday, March 31, 2020 5:51 PM  
**To:** Vertefeuille, Jan <[Jan.Vertefeuille@WWFUS.ORG](mailto:Jan.Vertefeuille@WWFUS.ORG)>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>; Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Walzer, Christian <[REDACTED]>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Fine, Amanda <[REDACTED]>; Catherine Machalaba <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>; O Criodain, Colman <[cocriodain@wwfint.org](mailto:cocriodain@wwfint.org)>; Aileo Weinmann <[WeinmannA@nwf.org](mailto:WeinmannA@nwf.org)>; Martin Gilbert <[m.gilbert@cornell.edu](mailto:m.gilbert@cornell.edu)>  
**Subject:** RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Thank you for initiating this effort, and to everyone for all of your work to find consensus.

We appreciate that some of our suggestions have been incorporated. However, upon reflection and internal discussion, WCS is not able to sign on to this joint call.

As you know, WCS has just issued our policy statement and recommendations on the issue, and it would be confusing to sign on to something that is weaker. We think calling for action on “high risk markets” and “high risk taxa” leaves far too much flexibility and room for interpretation and limited actions; we also see this issue as going beyond wildlife trafficking. Even if governments stopped all wildlife trafficking tomorrow, that would not eliminate the risk of another similar viral outbreak. We are also working very closely with our government partners in some of the countries we are working in, with a particularly local context, and signing on to this statement also risks confusion as to what we are advocating for.

We would like to be kept in the loop as this develops, and to collaborate when possible.

Thank you for your understanding,

Sue



**Susan Lieberman, Ph.D.**

**Vice President, International Policy**

[Wildlife Conservation Society](#)

2300 Southern Boulevard, Bronx, New York 10460  
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1325 G St. NW, Suite 500, Washington, DC 20005

Cell/mobile phone: +1 (240) 779-5045

Skype: sslieberman; Twitter: @sslieberman

Please visit:

[WCS and COVID-19](#)

[WCS International Policy Page](#)

---

**From:** Vertefeuille, Jan [<mailto:Jan.Vertefeuille@WWFUS.ORG>]

**Sent:** Tuesday, March 31, 2020 11:30 AM

**To:** Lieberman, Susan <[REDACTED]>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>

**Cc:** Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Walzer, Christian <[REDACTED]>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Fine, Amanda <[REDACTED]>; Catherine Machalaba <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>; O Criodain, Colman <[cocriodain@wwfint.org](mailto:cocriodain@wwfint.org)>; Aileo Weinmann <[WeinmannA@nwf.org](mailto:WeinmannA@nwf.org)>; Martin Gilbert <[m.gilbert@cornell.edu](mailto:m.gilbert@cornell.edu)>

**Subject:** RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

**EXTERNAL EMAIL - Please Use Caution**

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Thanks, Sue.

Let's make the **deadline COB Thursday, 2 April**, for agreement. After that, I suggest that we allow – and encourage -- other groups or experts to sign on, but that the text will be closed for revisions.

I've put back in some of the background info that Maggie noted had been taken out, but otherwise left this otherwise untouched. Same text is in the attached document and below for easy access:

### **An Open Letter to Global Policymakers**

The world is in crisis. The novel coronavirus disease known as COVID-19 is costing the lives of increasing numbers of people and devastating the global economy.

Tragically, this type of pandemic was predicted for years by infectious disease experts. We didn't know where or when it would arrive, but we knew it would occur and that it would likely come from a zoonotic outbreak – whereby a pathogen jumps from animals to humans. We could have and should have been prepared to prevent or halt it before it became extremely damaging.

We know what needs to be done to greatly decrease the likelihood of future pandemics. Wildlife trafficking substantially increases our globally shared risk. Wildlife markets that sell live animals of different species warehoused together in unsanitary conditions, like those that can often be found in Asian urban centers, are mixing vessels for the emergence of dangerous viruses in human populations.

We call on policymakers everywhere to immediately and urgently undertake these steps to reduce the chances of another pandemic:

- **Shut down high-risk wildlife markets, with a priority focus on those in high-density urban areas**
- **Urgently scale up efforts to combat wildlife trafficking and halt trade of high-risk taxa**
- **Strengthen efforts to reduce consumer demand for high-risk wildlife products**

High-risk human-wildlife interactions and interfaces that facilitated the emergence of COVID-19, SARS, ebola and H1N1 continue to exist in emerging disease hotspots globally.

In our hyper-connected modern world, the emergence of a new virus anywhere can impact people everywhere. We are now at the moment to join forces across nations, sectors, scientific disciplines and civil society to ensure that never again does high-risk wildlife trade lead to a global pandemic.

---

**From:** Lieberman, Susan [REDACTED]

**Sent:** Monday, March 30, 2020 11:44 PM

**To:** Vertefeuille, Jan <[Jan.Vertefeuille@WWFUS.ORG](mailto:Jan.Vertefeuille@WWFUS.ORG)>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>

**Cc:** Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Walzer, Christian [REDACTED]; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Fine, Amanda [REDACTED]; Catherine Machalaba <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>; O Criodain, Colman <[cocriodain@wwfint.org](mailto:cocriodain@wwfint.org)>; Aileo Weinmann <[WeinmannA@nwf.org](mailto:WeinmannA@nwf.org)>; Martin Gilbert



<[m.gilbert@cornell.edu](mailto:m.gilbert@cornell.edu)>

**Subject:** RE: FOR REVIEW: Joint call to action on COVID-19

Thanks, Jan and Steve . What's your deadline? I imagine this is near final so we won't try to get it stronger again (and we appreciate that is now stronger than it was). We have to check with a few people.

All the best, and please do check out our policy statement at [WCS and COVID-19](#).

Sue



**Susan Lieberman, Ph.D.**

**Vice President, International Policy**

[Wildlife Conservation Society](#)

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Skype: sslieberman; Twitter: @sslieberman

Please visit:

[WCS and COVID-19](#)

[WCS International Policy Page](#)

---

**From:** Vertefeuille, Jan [<mailto:Jan.Vertefeuille@WWFUS.ORG>]

**Sent:** Monday, March 30, 2020 5:07 PM

**To:** Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>

**Cc:** Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Walzer, Christian [REDACTED]; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Lieberman, Susan [REDACTED]; Fine, Amanda [REDACTED]; Catherine Machalaba <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>; O Criodain, Colman <[cocriodain@wwfint.org](mailto:cocriodain@wwfint.org)>; Aileo Weinmann <[WeinmannA@nwf.org](mailto:WeinmannA@nwf.org)>; Martin Gilbert <[m.gilbert@cornell.edu](mailto:m.gilbert@cornell.edu)>  
**Subject:** RE: FOR REVIEW: Joint call to action on COVID-19

Steve,

Thanks for this streamlined draft, version 3. I have added one phrase that colleagues in Southeast Asia have urged us to include to capture the full range of interventions needed (it's highlighted) but otherwise have left all of your changes intact.

Everyone, is this version acceptable to all? I'd love to be able to move this forward this week.

Thanks,

Jan

---

**From:** Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>  
**Sent:** Thursday, March 26, 2020 12:10 PM  
**To:** Vertefeuille, Jan <[Jan.Vertefeuille@WWFUS.ORG](mailto:Jan.Vertefeuille@WWFUS.ORG)>  
**Cc:** Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Walzer, Christian [REDACTED]; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>; Valitutto, Marc <[ValituttoM@si.edu](mailto:ValituttoM@si.edu)>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; [REDACTED] Fine, Amanda <[REDACTED]>; Catherine Machalaba <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>; O Criodain, Colman <[cocriodain@wwfint.org](mailto:cocriodain@wwfint.org)>; Aileo Weinmann <[WeinmannA@nwf.org](mailto:WeinmannA@nwf.org)>; Martin Gilbert <[m.gilbert@cornell.edu](mailto:m.gilbert@cornell.edu)>  
**Subject:** Re: FOR REVIEW: Joint call to action on COVID-19

Great to see so many colleagues chipping-in, recognizing we all come from different personal and institutional perspectives.

In the spirit of trying to hone-in on a common messaging denominator, I've tried to simplify the piece even a bit more— recognizing the complexities of the issues we've all been thinking about get sacrificed in the process. But perhaps that's necessary given this exercise's primary objective.

Keep safe everyone,

Steve

**From:** Peter Daszak <daszak@ecohealthalliance.org>  
**To:** Vertefeuille, Jan <Jan.Vertefeuille@WWFUS.ORG>; Martin Gilbert <m.gilbert@cornell.edu>; Keith Martin <kmartin@cugh.org>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; Steven A. Osofsky <s.osofsky@cornell.edu>; Maggie Kinnaird <mkinnaird@wwf.panda.org>; Catherine Machalaba <machalaba@ecohealthalliance.org>; Hemley, Ginette" <ginette.HEMLEY@WWFUS.ORG>; O Criodain, Colman <cocriodain@wwfint.org>; Aileo Weinmann <WeinmannA@nwf.org>; SacconeM@nwf.org <SacconeM@nwf.org>; William B. Karesh <karesh@ecohealthalliance.org>; Catherine Machalaba <machalaba@ecohealthalliance.org>  
**CC:** Nicolas, Alexander <Alexander.Nicolas@wwf.org>  
**Sent:** 4/26/2020 1:41:43 PM  
**Subject:** RE: Sign-on letter website and launch plans

Cc'ing Billy and Catherine into the email chain.

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street  
New York, NY 10001  
USA

Tel.: +1-212-380-4474

Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation*

**From:** Vertefeuille, Jan

**Sent:** Sunday, April 26, 2020 2:10 PM

**To:** Martin Gilbert ; Keith Martin ; Christine Kreuder Johnson ; Peter Daszak ; Jonna Mazet ; Steven A. Osofsky ; Maggie Kinnaird ; Catherine Machalaba ; Hemley, Ginette ; O Criodain, Colman ; Aileo Weinmann ; SacconeM@nwf.org

**Cc:** Nicolas, Alexander

**Subject:** Sign-on letter website and launch plans

All,

I'm delighted to share that our letter now lives on its own website -- [www.PreventPandemics.org](http://www.PreventPandemics.org) -- in 6 languages, with a signup form for additional experts to add their names to the letter. We have more than 100 signers from 24 countries, including One Health leaders from Vietnam, Thailand, Bangladesh, Hong Kong, Malaysia, Indonesia, Zambia, Tanzania, Uganda and more. A big thank you to everyone who has shared this with colleagues to secure these signatures!

We are using the next few days to double check translations and functionality and will publicly announce the

website during the CUGH webinar that Keith is organizing on Thursday morning Asia time. We are also working on a press release and plans for delivering this to decisionmakers, so please let us know if you are interested and available to do press interviews.

**We encourage you to continue sharing the letter to potential signers and welcome additional experts to add their names via [PreventPandemics.org](http://PreventPandemics.org) even before we formally launch it on Thursday, but please do not post the letter or website publicly to social media or other public channels until Thursday. And please ask anyone you're sharing the link with to do the same.**

I'm copying here Alexander Nicolas, who oversaw the site development – launching a site in 6 languages in two weeks' time is no small feat! And we have set up an email address, [PreventPandemics@wwfus.org](mailto:PreventPandemics@wwfus.org), for questions or issues with the site.

Thanks,  
Jan

**From:** Jonna Mazet <jkmazet@ucdavis.edu>  
**To:** Peter Daszak <daszak@ecohealthalliance.org>  
**Sent:** 9/11/2020 11:44:37 AM  
**Subject:** Re: Some of Jonna's emails to me were blocked.

Here you go & thanks for checking. I got that other one back three times for some reason.  
Have a nice weekend,  
Jonna

On Thu, Sep 10, 2020 at 9:40 PM Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

Aleksei – please check this out with Ripple tomorrow. One sent on Sun sept 6<sup>th</sup> 3.10pm CA time was blocked  
– (see image)

Jonna – I got one from you on Thursday at 4:05pm my time, so it might be just temporary glitch, but we'll look into it.

Can you send a response to this just so we can see if it's still blocking.

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

520 Eighth Avenue, Suite 1200

New York, NY 10018-6507

USA

Tel.: +1-212-380-4474

Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)

Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation*

**From:** Peter Daszak <daszak@ecohealthalliance.org>  
**To:** Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Alison Andre <andre@ecohealthalliance.org>  
**CC:** Jonna Mazet <jkmazet@ucdavis.edu>; David John Wolking <djwolking@ucdavis.edu>  
**Sent:** 1/6/2017 12:08:03 PM  
**Subject:** RE: Call with Peter today re pathways?

OK – got your email CK, just after I sent mine!

No problem, totally understand the constraints – let's talk briefly at 4.30 to get on the same page, and no problem to have this as a discussion without ppt...

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

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+1.212.380.4465 (fax)  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

**From:** Christine Kreuder Johnson [mailto:ckjohnson@ucdavis.edu]  
**Sent:** Friday, January 6, 2017 2:58 PM  
**To:** Alison Andre; Peter Daszak  
**Cc:** Jonna Mazet; David John Wolking  
**Subject:** Re: Call with Peter today re pathways?

Hi Peter –

We're still here meeting with CDC and could catch up when we wrap up later this afternoon (~ 4pm?).

In checking with Jonna on this, we'd rather have the emergence pathways as a general discussion with us moderating the discussion to assess our commitment to pathways and identifying sites that make sense for this across political boundaries, as opposed to a ppt presentation. I didn't want to task our team with gathering more info for this meeting next week, given the holidays and all of the recent reporting.

Also, we want to be careful about what we emphasize with the broader group next week because Africa activities must specifically map to GHSA milestones and most of us do not have the budget to prioritize beyond 1-2 sites per country (which is not easily conducive to pathways-specific planning). That said, I think we have the right people on hand at this meeting to have a good discussion of where we're working and how we might be able to piece together emergence pathways and encourage collaboration across boundaries.

Even though the analyses can be a modeling activity, the discussion of where and how we're sampling to facilitate this seems like a primary surveillance effort and we'd rather keep this within the context of surveillance prioritization all together on the agenda.

I'm not planning any ppts for this meeting as I hope we'll have a more productive discussion at this stage. Am of course happy for you to lead the justification of the emergence pathways aspect and I can help with assessing where this is feasible. If we need to brainstorm proposed data analysis and modeling aspects, can we do that in a separate modeling team call?



Feel free to call us at 4 if we can clarify.

We missed you at this meeting. It was great to have Jon and we've had a very productive meeting with CDC.

/ckj

**From:** Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>

**Date:** Friday, January 6, 2017 at 10:49 AM

**To:** Christine Kreuder Johnson <[ckjohnson@UCDAVIS.EDU](mailto:ckjohnson@UCDAVIS.EDU)>

**Cc:** Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Subject:** Call with Peter today re pathways?

Hi Chris,

Can Peter give you a call sometime today re pathways? He's available any time after 1:00pm ET today so please let me know if there's a time that would work best for you.

Thanks!

Alison

**Alison Andre**

*Program Assistant*

EcoHealth Alliance  
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**From:** "George GAO" [REDACTED]  
**Sent:** 01/29/2017 3:05:25 AM (-08:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Cc:** "Carlos Morel" [REDACTED] "Matt Blake" <mblake@ucdavis.edu>  
**Subject:** Re: Carlos join

It is Chinese new year holiday now but I guess it will be confirmed by tomorrow

鑿戮嚙錫戩殞 iPhone George Gao

斡?2017騫?鏈?9鏹?紅涓嬩嶽2:14鐸�onna Mazet <jkmazet@ucdavis.edu> 鏷櫳亾鐸?br>

Okay -- thanks!

Did you buy it, because we were just discussing an itinerary to purchase for Carlos yesterday. If you've purchased one, we won't pay for the one we have on hold.

Appreciate any help and don't want to buy two,

Jonna

On Sat, Jan 28, 2017 at 8:35 PM, George GAO [REDACTED] wrote:

Jonna

It seems I managed getting a business ticket for Carlos鐸密o he may join you.

Best

George

鑿戮嚙錫戩殞 iPhone George Gao

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 02/09/2017 11:58:53 AM (-08:00)  
**To:** [REDACTED] "Kevin Olival, PhD" <olival@ecohealthalliance.org>  
**Cc:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Alison Andre" <andre@ecohealthalliance.org>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "sja2127@cumc.columbia.edu" <sja2127@cumc.columbia.edu>  
**Subject:** RE: Viral Risk Ranking draft participant worksheet  
**Attachments:** participantWorksheet\_v3 Completed.xlsx

Sorry for the delay [REDACTED] here are my rankings and comments. It's interesting how little we really know about the comparative risks among these groups!

I made a bunch of comments and I think the only important issues are that some of the questions are hinting at risk of spillover, emergence and spread, rather than just risk of spillover, but I answered them as asked...

Great job pulling this together.

I'll look at the list of experts now...

Cheers,

Peter

**Peter Daszak**

*President*

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---

**From:** [REDACTED]  
**Sent:** Thursday, February 2, 2017 3:50 PM  
**To:** Peter Daszak; Kevin Olival, PhD  
**Cc:** Jonna Mazet; Alison Andre; Tracey Goldstein; Christine Kreuder Johnson; sja2127@cumc.columbia.edu  
**Subject:** Re: Viral Risk Ranking draft participant worksheet

Hi Peter,

No problem, please see attached for the new worksheet version after gaining feedback from the call yesterday. Once I receive your feedback I'll prepare a final version of the worksheet/invite for everyone's approval before sending to the experts.

Have a safe flight!

Cheers,

REDACTED

REDACTED

REDACTED

Mobile REDACTED

---

**From:** Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>

**Date:** Thursday, February 2, 2017 at 12:01 PM

**To:** "Kevin Olival, PhD" <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)>, REDACTED

**Cc:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>, Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>, Christine Kreuder Johnson <[ckjohnson@UCDAVIS.EDU](mailto:ckjohnson@UCDAVIS.EDU)>, "[sja2127@cumc.columbia.edu](mailto:sja2127@cumc.columbia.edu)" <[sja2127@cumc.columbia.edu](mailto:sja2127@cumc.columbia.edu)>

**Subject:** RE: Viral Risk Ranking draft participant worksheet

Very sorry I missed the call. I couldn't get reception where I was. I spoke with Kevin later on and he said you're going to wait for me (thanks!). I'll go through everything on the plane to China and email back comments etc.

Cheers,

Peter

**Peter Daszak**

*President*

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---

**From:** Kevin Olival, PhD  
**Sent:** Wednesday, February 1, 2017 4:33 PM  
**To:** REDACTED  
**Cc:** Peter Daszak; Jonna Mazet; Alison Andre; Tracey Goldstein; Christine Kreuder Johnson; [sja2127@cumc.columbia.edu](mailto:sja2127@cumc.columbia.edu)  
**Subject:** Re: Viral Risk Ranking draft participant worksheet

Sure you guys have seen this, in case not:  
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0048519>

**Kevin J. Olival, PhD**  
*Associate Vice President for Research*

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On Feb 1, 2017, at 12:00 PM, Kevin Olival, PhD <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)> wrote:

Drop downs are working! Thanks.

**Kevin J. Olival, PhD**  
*Associate Vice President for Research*

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On Feb 1, 2017, at 11:17 AM, [REDACTED] wrote:

Hi Kevin,

Great points about the spillover statement and further ranking of levels within a parameter, I agree both need to be revised.

The spreadsheet should have dropdown boxes with levels of ranking for the factors and the level of expertise, let me know if it isn't working.

Look forward to catching up later.

Cheers,

[REDACTED]

[REDACTED]

[REDACTED]

Mobile: [REDACTED]

---

**From:** "Kevin Olival, PhD" <[olival@ecohealthalliance.org](mailto:olival@ecohealthalliance.org)>

**Date:** Wednesday, February 1, 2017 at 11:00 AM

**To:** [REDACTED]

**Cc:** Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, Alison Andre <[andre@ecohealthalliance.org](mailto:andre@ecohealthalliance.org)>

**Subject:** Re: Viral Risk Ranking draft participant worksheet

Hi [REDACTED]

Sorry for not chiming in sooner. I'll review today before the call at 4pm EST.

Couple of notes on the email below:

I would delete " In this context, a spillover event occurs when a reservoir population with a high pathogen prevalence comes into contact with a novel host population." This is introducing bias to their ranking up front, and is not necessarily a universally excepted definition of spillover. For example what is a "reservoir population" and why is "high pathogen prevalence" a condition? Can't you have spillover in the case of a relatively low prevalence, given the presence of other important risk factors?

Also, maybe just define this statement a little more? "The levels of severity within each of the parameters will be evaluated at a later date. "

Lastly, not sure if I missed something obvious in the email below or the spreadsheet itself, but what system are we using for ranking and level of expertise respectively? 0-10 for both? 1-5? High, medium, low?

Thank you!  
Kevin

**Kevin J. Olival, PhD**

*Associate Vice President for Research*

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On Jan 19, 2017, at 7:44 PM, **REDACTED**  
wrote:

Hi Kevin and Peter,

I have attached a draft version of the viral risk ranking expert opinion worksheet for your review. Please can you go through the exercise (described below) and send me your feedback prior to the co-author meeting at 1PM PST / 4PM EST on the 1<sup>st</sup> of February.

If you have suggestions / opinions on any aspect of the exercise, either note them in the comments section of the worksheet or save them to discuss at the co-author meeting. I will send an agenda nearer to the time.

Happy to be working with you,

REDACTED

---

## PARTICIPANT EMAIL TEMPLATE

Dear Participant,

You are receiving this email because you have been selected as an expert in one or more of aspects of disease ecology, epidemiology or virology. Prof. Jonna Mazet, Global Director of PREDICT (<http://predict.global>) and I, REDACTED would like to invite you to complete a short assessment of selected host, viral and environmental factors in terms of their importance in the risk of a viral spillover event from animals to humans. In this context, a spillover event occurs when a reservoir population with a high pathogen prevalence comes into contact with a novel host population.

If you decide to participate, your expert opinion will be used to evaluate the contribution (if any) the factor has in an overall risk assessment of novel and known viruses detected in animals. At this point we are primarily interested in how much each parameter should affect the overall assessment of spillover risk. The levels of severity within each of the parameters will be evaluated at a later date. We anticipate the time allocation to this exercise will be 10 to 20 minutes.

This study is intended for scientific publication, all contributions to this exercise are voluntary and identifying information will not be published. We ask that the attached worksheet remain confidential and not to be shared with others.

### Instructions:

- 1) Please open and save the worksheet with your initials in the title (i.e. Partipantworksheet\_ZG.xlsx)
- 2) Complete the first tab called 'Demographic Information'
- 3) Open the second tab called 'Risk Ranking Worksheet'
  - a. Answer all categories for 'Importance for risk of viral spillover event' and 'Level of expertise' using provided dropdown options
  - b. Completion of the 'Comments' box is optional
- 4) Please return your completed worksheet to REDACTED by ..... 2017

Please accept my gratitude for your time and contribution to scientific collaboration.

Kind regards,

REDACTED

REDACTED



**REDACTED**

Mobile: **REDACTED**  
<participantWorksheet\_v2.xlsx>

produced in native format

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/31/2017 1:33:56 PM (-07:00)  
**To:** "Nrandhawa@ucdavis.edu" <Nrandhawa@ucdavis.edu>; "David J Wolking" <djwolking@ucdavis.edu>; "Elizabeth S Chase (eschase@ucdavis.edu)" <eschase@ucdavis.edu>; "Jonna Mazet (jkmazet@ucdavis.edu)" <jkmazet@ucdavis.edu>  
**Cc:** "Alison Andre" <andre@ecohealthalliance.org>; "Brooke Watson" <watson@ecohealthalliance.org>  
**Subject:** URGENT - need to edit the figure for the GVP paper  
**Attachments:** GVP.figure 1.png  
**Importance:** High

Hi Nistara,

Jonna said I should send you an email because she's not got email access today. I'm finishing off edits to the GVP paper and need to change the text on the figure that we're using. It's the 'hairy eyeball' figure, see attached.

The problem is that I only have the un-editable version. Could you email me the editable version. I'm going to change some of the numbers in the text so that it fits what the revised paper says.

Thanks very much – I'm trying to get this submitted tonight so we can push it along, and didn't realize it's a holiday in CA.

Cheers,

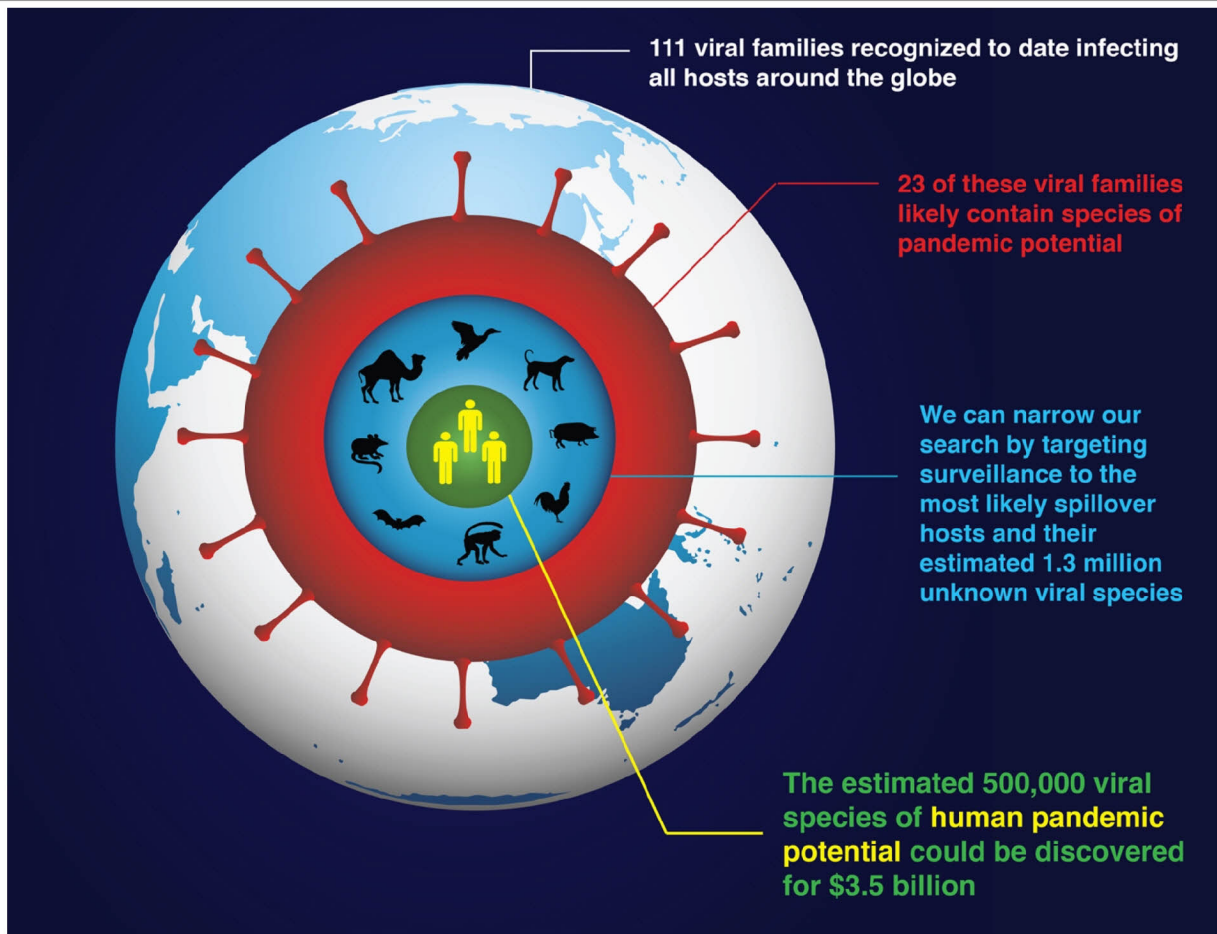
Peter

**Peter Daszak**  
*President*

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**From:** William B. Karesh <karesh@ecohealthalliance.org>  
**To:** PREDICTMGT <predictmgt@usaid.gov>  
**CC:** predict@ucdavis.edu <predict@ucdavis.edu>; Catherine Machalaba <machalaba@ecohealthalliance.org>; Peter Daszak <daszak@ecohealthalliance.org>; Jonna Mazet <jkmazet@ucdavis.edu>; Brooke Watson <watson@ecohealthalliance.org>; Yasha Feferholtz <feferholtz@ecohealthalliance.org>  
**Sent:** 5/11/2017 11:32:23 AM  
**Subject:** OFFLU annual report

Just in case you did not receive this directly.

BK

# OFFLU Annual Report 2016

In 2016, avian influenza (AI) outbreaks continued to threaten both animal health and public health worldwide. More than 50 countries within Asia, Africa, Europe and North America experienced highly pathogenic avian influenza (HPAI) virus outbreaks during 2016 and strains of AI subtypes H5N1, H5N2, H5N3, H5N5, H5N6, H5N8, H5N9, H7N1, H7N3, H7N7 and H7N8 were detected. Also H7N9 which was circulating in China in low pathogenic form since 2013 has recently mutated to become HPAI H7N9.

In response to these HPAI outbreaks, the OFFLU network experts participated in various teleconferences and meetings to share epidemiological and experimental data and diagnostic protocols that are needed to inform surveillance and control policies, and in building technical partnerships with Member Countries. OFFLU and WHO have been in regular communication to share both public and animal health data so that risk assessments can be continually updated and to discuss issues related to the animal-human interface, including pandemic preparedness.

## Contribution of avian influenza data for pandemic preparedness

Every six months OFFLU coordinates inputs from OIE/FAO Reference Centres and national veterinary laboratories to provide animal virus data for consideration during the WHO Vaccine Composition Meeting. These data are needed to update pre-pandemic candidate vaccine viruses for human vaccines against zoonotic viruses of concern, and contribute to the WHO biannual report of “[Antigenic and genetic characteristics of zoonotic influenza viruses and development of candidate vaccine viruses for pandemic preparedness.](#)”

In the February 2016 meeting, OFFLU contributed genetic data from clade 2.3.2.1c H5N1 viruses from reported poultry outbreaks in China, Vietnam, Burkina Faso, Ghana, Ivory Coast, Niger and Nigeria; clade 2.3.2.1a viruses in India; and clade 2.2.1.2 viruses in Egypt. A new candidate vaccine virus strain was proposed from a poultry-origin virus isolate from Vietnam representing one of the currently circulating clade 2.3.4.4 H5 HPAI lineages.

In the September 2016 meeting, OFFLU contributed 85 new H5Nx HA sequences from Cameroon (H5N1), China (H5N6), Egypt (H5N1), Ghana (H5N1), India (H5N1), Iran (H5N1), Lebanon (H5N1), Niger (H5N1), the Republic of Korea (H5N8), the Russia Federation (H5N8), Taiwan Province of China (H5N8), and Vietnam (H5N1). The majority of these were additions to the recent H5Nx virus sequence data generated by OFFLU Reference Laboratories that have been deposited in the public domain. Additionally, 50 HA sequence data on H9N2 viruses of avian/poultry host origins were shared. These were reported from six different countries, including China, Egypt, India, Myanmar, Vietnam and the Republic of Korea. More limited data of historical significance from wave three

H7N9 viruses from poultry in China, and H9N2 from Egypt was contributed. Furthermore, OFFLU contributed HPAI H5Nx and H5N1, and LPAI H9N2 antigenic data, characterized using the WHO ferret antisera panel, from poultry outbreaks reported in Vietnam, Cameroon, Ghana, Niger, Iran, India, Myanmar and Lebanon.

In the February 2017 meeting, sequence data for 248 H5, H7, and H9 were contributed by OFFLU from 32 animal health laboratories in 24 countries representing Europe, Asia, Africa, and the Americas. The contributing countries include Egypt, Morocco, Niger, Nigeria, Togo, Chile, USA, Bhutan, China, India, Japan, Korea, Laos, Myanmar, Taiwan, Vietnam, Austria, France, Germany, Italy, Netherlands, Romania, Russia and UK. Antigenic data for H5 clades 2.3.4.4 and 2.3.2.1, and H9 Y280 lineage viruses were contributed by three of the OFFLU reference laboratories (Istituto Zooprofilattico Sperimentale delle Venezie in Italy, the Animal and Plant Health Agency in the UK and the Australian Animal Health Laboratory, Australia).

The OFFLU VCM team would like to specifically acknowledge the OFFLU network laboratories and Member Countries involved in the significant contribution of HPAI genetic data for the year 2016 - 2017.

[http://www.who.int/influenza/resources/documents/characteristics\\_virus\\_vaccines/en/](http://www.who.int/influenza/resources/documents/characteristics_virus_vaccines/en/)

[http://www.who.int/influenza/vaccines/virus/201703\\_zoonotic\\_vaccinevirusupdate.pdf?ua=1](http://www.who.int/influenza/vaccines/virus/201703_zoonotic_vaccinevirusupdate.pdf?ua=1) [http://www.who.int/influenza/vaccines/virus/201703\\_zoonotic\\_vaccinevirusupdate.pdf?ua=1](http://www.who.int/influenza/vaccines/virus/201703_zoonotic_vaccinevirusupdate.pdf?ua=1)

## OFFLU avian influenza virus characterization meeting

In March 2017, OFFLU organized an avian influenza virus characterization technical meeting at FAO Headquarters, Rome, comprising experts from OIE-FAO Reference Centres for avian influenza, national veterinary laboratories and public health laboratories. The meeting served as a platform to discuss and promote sharing of genetic and antigenic data relating to avian influenza with the purpose of establishing a methodology for monitoring genetic and antigenic changes among the circulating strains. The experts also discussed the production of chicken sera by OFFLU labs against the main circulating viruses. The ultimate goal of this activity is to provide detailed data on genetic and antigenic properties of

virus, and the associated immunology in animals, to scientifically support countries in developing optimal control strategies, including potential use in selecting poultry vaccine seed strains against circulating low and high pathogenicity avian influenza viruses. The Reference Centres experts also agreed to participate in a proficiency testing exercise to ensure mechanisms of harmonization of the various diagnostic methods employed and avian influenza virus characterization. The meeting provided an opportunity for the network of Reference Centres to agree to processes and procedures to meet these requirements.

## Guidance on Influenza A cleavage sites

OFFLU experts updated a guidance document that provided information about influenza A (avian) cleavage sites for assistance in differentiation of low pathogenicity and high pathogenicity AI viruses through molecular analyses. This document included molecular sequences for consistent multi-basic cleavage sites of HPAI H5N1 viruses from Asia, Africa and Europe; previously reported multi-basic cleavage sites of other HPAI viruses (H5 and H7); and a list of 2-3 residue multi-basic cleavage sites. The document was updated in December 2016

taking into account the recent HPAI outbreaks for the past year. Considering the importance of this information, the document has been referenced in the avian influenza chapter of the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial animals*.

[http://www.offlu.net/fileadmin/home/en/resource-centre/pdf/Influenza\\_A\\_Cleavage\\_Sites.pdf](http://www.offlu.net/fileadmin/home/en/resource-centre/pdf/Influenza_A_Cleavage_Sites.pdf)

## OFFLU Swine influenza virus group activities

The OFFLU swine influenza group met for the sixth annual technical meeting in March 2017 at the FAO Headquarters, Rome and shared data about influenza in global pig populations including regional and country-specific reports from Australia, Japan, Thailand, Vietnam, South Korea, Europe, USA, Canada, Brazil, Chile, Guatemala, Colombia, Argentina and Africa. Participants included scientists conducting influenza surveillance and/or performing influenza research or diagnoses in swine and at the human-swine interface.

The members of the group published a paper on the global antigenic diversity of swine influenza A viruses. The study characterized the antigenic diversity of H1 and H3 viruses circulating in both swine and humans on a multi-continental scale within and between different regions of the world where swine influenza viruses (SIV) surveillance data were available. There is considerable diversity in both H1 and H3 influenza viruses circulating in swine. The current global antigenic diversity of SIV creates substantial risks for both human and swine populations. The antigenic divergence of SIV to seasonal influenza viruses circulating in humans may be a major contributor to the risk of outbreaks and pandemics of SIV in humans.

The group also published a paper describing the development of a phylogeny-based global nomenclature system for SIV and an automated annotation tool for H1 hemagglutinin genes for all H1 genes available in GenBank. Phylogenetic criteria were used to establish a globally consistent nomenclature to compare swine H1 virus hemagglutinin (HA) among regions and between swine and humans. The annotation tool utilized a data set of 7,070 H1 sequences. The tool can be updated readily to include evolving nomenclature as new clades emerge. A common global nomenclature facilitates communications about the genetic relationship of influenza A viruses (IAVs) infecting humans and pigs, within and between regions.

The tool was then integrated into the Influenza Research Database (IRD) for public access and offers multiple interfaces to existing applications within IRD.

<https://elifesciences.org/content/5/e12217>

<http://msphere.asm.org/content/msph/1/6/e00275-16.full.pdf>

[https://www.fludb.org/brc/influenza\\_h1clade\\_search\\_segمنت.spg?method=ShowCleanSearch&decorator=influenza](https://www.fludb.org/brc/influenza_h1clade_search_segمنت.spg?method=ShowCleanSearch&decorator=influenza)

## Equine influenza experts update vaccine recommendations

Equine influenza (EI) is a respiratory disease of horses and has the potential to disrupt major equestrian events. EI can be controlled by vaccination but it has been demonstrated in the field that antigenic drift impacts vaccine efficacy. The Expert Surveillance Panel of EI comprised of OFFLU and WHO influenza experts met at the OIE Headquarters in March 2017 and reviewed the EI virus activity, characteristics of the viruses isolated and vaccine performance. The panel studied the

individual animal cases and outbreaks of equine influenza reported by Ireland, Sweden, UK and the USA in the past year and recommended that vaccines for the international market should contain both clade 1 and clade 2 viruses of the Florida sublineage.

<http://www.oie.int/en/our-scientific-expertise/specific-information-and-recommendations/equine-influenza/>

## OFFLU wildlife/wild bird influenza group

The experts from various continents involved in wildlife/ wild bird influenza surveillance and research met by teleconferences on various occasions to share data and provided situation updates of outbreaks in wild birds and poultry and updated guidance document on the role of wild birds in the circulation of avian influenza viruses. Guidance was provided on wild bird movements, surveillance strategies, diagnostics, reporting and response to detection in wildlife.

The group developed a concept note for a global surveillance program for avian influenza viruses in wild birds. The

overarching objective of this proposed global surveillance program for influenza viruses in wild birds is to cost-effectively and regularly monitor the changing characteristics of genomic diversity of influenza viruses and secure the benefits of such surveillance information equally for all countries through a single affordable program. The funding mechanism for this project needs to be identified.

[http://www.offlu.net/fileadmin/home/en/resource-centre/pdf/H5N8\\_OFFLU\\_Statement.pdf](http://www.offlu.net/fileadmin/home/en/resource-centre/pdf/H5N8_OFFLU_Statement.pdf)

## OFFLU applied epidemiology working group

Recognizing the need to develop integrated epidemiological approaches to avian influenza risk assessment and management at a global level, the OFFLU Steering and Executive Committee approved the formation of the Applied Epidemiology Working Group in September 2016. The experts of this group will work to identify the pathways leading to the introduction, spread and maintenance of relevant avian influenza viruses in different eco-social system settings and estimate the risks associated with these pathways. The

technical activity will also develop appropriate risk management options for relevant avian influenza viruses in different eco-social system settings, including the design of surveillance systems and its components. A technical meeting is being planned for this group at FAO Headquarters in June 2017 to agree on the terms of reference and to develop specific work plans. In addition, the experts will assess the utility of the FLURISK tools for integrated risk assessment and management of avian influenza.

## OFFLU website

The OFFLU website ([www.offlu.net](http://www.offlu.net)) was restructured to include animal influenza information on all species including avian, swine, equine and wildlife. The information related to outbreaks, OIE and FAO publications on influenza, outputs of OFFLU technical activities, diagnostic protocols, training

materials, influenza at human-animal interface were updated regularly. Please use the website and if you have any material to post or share with the worldwide network contact [secretariat@offlu.net](mailto:secretariat@offlu.net)

## Acknowledgements

OFFLU expresses its sincere gratitude to all OFFLU experts for their exceptional efforts and enthusiasm and the Chief Veterinary Officers of countries who support these experts and share data for the global health benefits. OIE and FAO would also like to thank the donors of OFFLU who have and are supporting the OFFLU activities.



[www.offlu.net](http://www.offlu.net)  
[secretariat@offlu.net](mailto:secretariat@offlu.net)



**From:** "Lipkin, Ian W." <wil2001@cumc.columbia.edu>  
**Sent:** 06/22/2017 1:09:46 AM (-07:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Cc:** "Briese, Thomas" <tb2047@cumc.columbia.edu>; "Kanas, Allison M." <amk2203@cumc.columbia.edu>; "Kahn, Eleanor J." <ejk2162@cumc.columbia.edu>  
**Subject:** Re: NSTDA project

We typically train two people from each group. Time required depends on level of expertise in sequencing and bioinformatics. It's rarely less than 2 weeks (a few European teams) and can be as long as 3 months (China CDC). We have a formal syllabus, wet lab and computer lab components. Trainees bring samples for characterization and pursue publishable projects.

Ian

On Jun 22, 2017, at 3:18 AM, Thanat Chookajorn <[REDACTED]> wrote:

Dear Jonna,

Thank you very much. I look forward to working with you and your team.

Prasert suggested that our team should adopt the SOP for sample collection used in GVP. My project involves partners who rely on blood, urine, nasal swab and throat swab. I would like to ask for your SOP on sample collections.

I am glad to hear that a powerful technique like VirCapSeq will be adopted as a tool. I assume that there is now a protocol with a medium/high-throughput workflow. I was wondering whether it can be shared with us.

I am new to the virus field, but I am very eager to learn. Please do not hesitate to let me know if there is anything that I can do from my side.

Best wishes,  
Thanat

On Thu, Jun 22, 2017 at 12:43 AM, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Dear Thanat & Prasert,

This is definitely wonderful news. We will be very pleased to assist in any way helpful and to provide protocols and guides for sampling and analyses for your consideration. We welcome you as collaborators and thank you for considering making intellectual contributions to GVP.

I'm glad you were inspired by Dr. Lipkin, as so many of us have been! He has also offered to share the VirCapSeq technology in case that would be of interest, as it will likely be the path we take in GVP in the future. I have copied Thomas Briese for this purpose, as he is the point person for this powerful method. We will follow-up with introductions to other team members as their expertise becomes useful to you and your project.

Please let us know what you need for the next steps.

Thank you so much for helping us to kick-start this powerful global collaboration, with Thailand in the lead!  
Jonna

Jonna AK Mazet, DVM, MPVM, PhD

Professor of Epidemiology & Disease Ecology

Executive Director, One Health Institute

Global Director, PREDICT Project of USAID Emerging Pandemic Threats Program

School of Veterinary Medicine

University of California

1089 Veterinary Medicine Drive

Davis, CA 95616, USA

[+1-530-752-3630](tel:+15307523630)

[onehealthinstitute.net](http://onehealthinstitute.net)

For scheduling and logistical issues, please contact:

Ms. Brooke Genovese

[bgenovese@ucdavis.edu](mailto:bgenovese@ucdavis.edu)

[+1-530-752-3630](tel:+15307523630)

On Sat, Jun 17, 2017 at 8:04 AM, Thanat Chookajorn <**REDACTED**> wrote:  
Dear Jonna,

This is Thanat Chookajorn from Mahidol University. I am grateful for Prasert's introduction. My research interest is on evolutionary biology with focus on malaria drug resistance (my CV is attached). I have become hooked on virus evolution and discovery during the last year or two. One of the reasons is the talk by Professor Lipkin at Sanger last year. I attended a malaria epidemiology meeting. I spent a few extra days to plan experiments with my colleagues and took the opportunity to attend a virus conference. Many of the talks were mesmerizing.

Our team is working with partners at the Department of Livestock Development to integrate genome analysis in their routine workflow. Their surveillance work relies on conventional PCR and immunological-based methods. We wish to introduce MiSeq and MinION in their programme. We are keen to adapt the ongoing method to match widely established protocols in order to prepare ourselves for future collaborations under GVP.

It is worth noting that I will spend the next two months at the Sanger institute. If you think that I should meet anyone in the area, please do not hesitate to let me know.

Yours sincerely,  
Thanat

On Sat, Jun 17, 2017 at 9:42 AM, Prasert Auewarakul <**REDACTED**> wrote:

Dear Jonna,

We will initiate a project in Thailand funded by the National Science and Technology Development Agency (NSTDA) to do high-throughput sequencing for pathogen discovery. The scope is not exactly GVP as there will be samples from both wildlife and livestock/humans. Nevertheless, I think this can be a good starting point for capacity building to serve future GVP. The project will be led Arunee and Thanat, whose emails are cc.. Ian has kindly agreed to help with technology transfer. I think it'll be best that they do sample collection and field work according to GVP/PREDICT guideline and SOP. Would you mind helping them? Thanat will communicate with you. I thank you in advance for your kind help.

Best regards,

Prasert

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 07/30/2017 10:15:08 AM (-07:00)  
**To:** "Brian Bird" <bhbird@ucdavis.edu>; "Leilani Francisco" <francisco@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "William B. Karesh" <karesh@ecohealthalliance.org>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "David J Wolking" <djwolking@ucdavis.edu>; "Emily Hagan" <hagan@ecohealthalliance.org>  
**Subject:** RE: Checking in on SL  
**Importance:** High

Great to see movement on this and also to get clarity from you Jonna that the USAID partners are just not looking like they'll be helping out anytime soon.

Please keep cc'ing me on emails so I know where we are. I'll be out of the office for 3 weeks, but will check in with Leilani in the last week of August to see what's happening and make sure we have the right resources to support this effort and the PREDICT-wide bat messaging also.

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

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*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

---

**From:** Brian Bird [mailto:bhbird@ucdavis.edu]  
**Sent:** Sunday, July 30, 2017 8:45 AM  
**To:** Leilani Francisco; Jonna Mazet; Peter Daszak; William B. Karesh; Christine Kreuder Johnson; Tracey Goldstein; David J Wolking; Emily Hagan  
**Subject:** Re: Checking in on SL

Thanks Leilani for the ideas below. I will add a discussion about these to the agenda for Tuesday's EHP call that I'm sending out later today.

Generally, the leave-behinds (booklet, posters, etc) make sense and would work here in SL. We struggled during the outbreak to get penetrance with TV, and radio honestly in SL so the value added was low overall.

If we do want broad mass dissemination the best way is to partner with Africell and Airtel to push out short SMS messages. That would probably be pricey unless they saw it as a free PSA, which they did during the outbreak.

Regardless of what we settle on, the broad messages that are targeted at communities and villages will have to be translated into Krio as a big percentage of folks outside of Freetown don't really read English. As a quick work around for that problem, we found that simple picture flipbooks that were read aloud or presented at community engagement events had the best results. Especially early on when the ideas and concepts of viruses, infection control etc. were new and strange in most communities. So that's an idea of a device to use to guide a discussion during site visits on these things.

Looking forward to discussing more on Tuesday.

-b

---

**From:** Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)>  
**Date:** Friday, July 28, 2017 at 12:11 AM  
**To:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, "William B. Karesh, D.V.M" <[karesh@ecohealthalliance.org](mailto:karesh@ecohealthalliance.org)>, Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>, Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>, David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>, Brian Bird <[bhbird@ucdavis.edu](mailto:bhbird@ucdavis.edu)>, Emily Hagan <[hagan@ecohealthalliance.org](mailto:hagan@ecohealthalliance.org)>  
**Subject:** RE: Checking in on SL

Hi again,  
 In the meantime, to get us started, below are some ideas.  
 Feedback is most welcome.  
 Thanks,  
 Leilani

	Materials	Modes	Audience	Messaging
1	Tri-fold booklet	To be handed out by community leaders	Community members	Ways to safely and humanely live with bats Who to contact for assistance
2	Posters	To hang in community centers, human and animal health clinics, etc.	Community members	Ways to safely and humanely live with bats Who to contact for assistance
3	2-page slick sheet	To distribute to human and animal health care providers	Health care professionals	FAQs for healthcare professionals
4	Print ad	Newspaper	Community members	Ways to safely and humanely live with bats Who to contact for assistance
5	Script	Radio	Community members	Ways to safely and humanely live with bats Who to contact for assistance
6	Short commercial, similar to a PSA	TV	Community members	Ways to safely and humanely live with bats Who to contact for assistance
7	Facebook	Internet	Community	Ways to safely and

	page, twitter feed, YouTube short		members	humanely live with bats Who to contact for assistance
8	Short info-booklet	Hardware stores and bat exclusion consultants	Bat exclusion consultants	Ways to construct simple bat exclusion devices (based on housing types at the sites)

**From:** Leilani Francisco [mailto:[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)]

**Sent:** Thursday, July 27, 2017 6:56 PM

**To:** 'Jonna Mazet' <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>

**Cc:** Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; William B. Karesh <[karesh@ecohealthalliance.org](mailto:karesh@ecohealthalliance.org)>; 'Christine Kreuder Johnson' <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; 'Tracey Goldstein' <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>; 'David J Wolking' <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; 'Brian Bird' <[bhbird@ucdavis.edu](mailto:bhbird@ucdavis.edu)>; Emily Hagan <[hagan@ecohealthalliance.org](mailto:hagan@ecohealthalliance.org)>

**Subject:** RE: Checking in on SL

Hi Jonna,  
Thanks for the update.

All,  
If there have been updates to any of the materials since I was last involved could you forward them to me please?  
Best,  
Leilani

**From:** [REDACTED] **On Behalf Of** Jonna Mazet

**Sent:** Thursday, July 27, 2017 6:46 PM

**To:** Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)>

**Cc:** Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Billy Karesh <[karesh@ecohealthalliance.org](mailto:karesh@ecohealthalliance.org)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>; David J Wolking <[djwolking@ucdavis.edu](mailto:djwolking@ucdavis.edu)>; Brian Bird <[bhbird@ucdavis.edu](mailto:bhbird@ucdavis.edu)>

**Subject:** Re: Checking in on SL

Hi Leilani,  
We are very much hoping that you will quickly be able to provide core messages regarding minimizing or supporting safe bat-human interaction and associated human behavioral options to reduce risk, as well as a plan for the types of materials that might be most useful in the short and long terms. We will start rolling out in SL as soon as you have some materials ready. We cannot wait any longer for USAID partners, but should one or more partner materialize from USAID, we will incorporate them in the planning and implementation.

For now, we will use our existing team in SL to begin to provide these bat messages to communities where we have been sampling in lieu of providing actual results. Consistent with what I believe you are hearing from Peter, Billy & Chris, we want to use the broad bat messages across all Predict countries, as appropriate, and develop specific risk-reducing messages for location/regional-specific risks for all countries in the project. Our team stands ready to help with messages and materials, especially to get started in Sierra Leone. I have also copied Tracey, Brian & David to that end.

Andrew is also starting to ask to see our messages and planned materials, since the communication partner from them is not going to be immediately available to us.

Please do move forward ASAP and use the materials already collected by the team, as well as their collective expertise to help guide development of simple messages and communication materials.

Thanks,  
Jonna

On Thu, Jul 27, 2017 at 2:17 PM, Leilani Francisco <[francisco@ecohealthalliance.org](mailto:francisco@ecohealthalliance.org)> wrote:

Hi Jonna,  
Hope this finds you well.

I remembered you mentioning potential movement on needed bat content during a recent MT call but wasn't sure if it was related to the overall BR plan or SL specifically. I haven't seen emails on SL for a few months so I wanted to follow up on the latest.

Have there been developments in SL that I can help with? Or were you referring to the overall BR plan or other?

Best,  
Leilani

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 09/11/2017 1:38:14 PM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Fwd: PCR vs VirCapSeq  
**Attachments:** GVP Cost Estimates-2.docx

Ian sent this after I had a call with him while you were on the road this summer. Are we having a morning meeting on this topic? It was one of the meetings your team requested with me, but I didn't see it show up on the calendar.

Let me know,  
J

----- Forwarded message -----

**From:** Lipkin, Ian W. <[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)>  
**Date:** Mon, Aug 14, 2017 at 2:30 PM  
**Subject:** PCR vs VirCapSeq  
**To:** Mazet Jonna <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>  
**Cc:** "Briese, Thomas" <[tb2047@cumc.columbia.edu](mailto:tb2047@cumc.columbia.edu)>, "Kahn, Eleanor J." <[ejk2162@cumc.columbia.edu](mailto:ejk2162@cumc.columbia.edu)>, "Kanas, Allison M." <[amk2203@cumc.columbia.edu](mailto:amk2203@cumc.columbia.edu)>

Jonna-

Attached please find our analysis of cost for nested viral family PCR vs VirCapSeq for the GVP.

All the best,

Thomas and Ian



## Costs for viral surveillance and discovery via PCR versus VirCapSeq

Foundation for estimates:

- Analysis of a set of 100 samples
- Personnel and supply costs in a US laboratory (in the developing world, supply costs are higher, personnel costs are lower)

### PCR-based approach

1. Six viral families are targeted using nested PCR. This requires two sets of reactions per family, resulting in a 100% increase in costs for supplies, personnel and risk of contamination or other technical error.
2. Amplification products are identified by gel electrophoresis.
3. Viral sequences that are not homologous to both primary **and** secondary primer sets are lost.
4. Primary analysis of 100 samples requires 1200 separate PCR reactions and 600 gel electrophoresis assays.
5. On average, 10% of products are difficult to visualize in electrophoresis. The products are therefore ligated into plasmids, used to transform *E. coli*, grown on plates and 8 colonies are selected for classical dideoxy sequencing. Where this yields a viral sequence, the original sample is reamplified as in the primary analysis using one of the original six family nested PCR assays (approximately 5% of the original 100 sample pool).

Note: The original sample is submitted for VirCapSeq or unbiased high throughput sequencing in the event that **any** of these PCR analyses identifies a viral sequence. This occurs with up to 40% of samples resulting in a cost of \$8,000 for VirCapSeq per set of 100 samples. The costs for unbiased sequencing is higher still and requires a higher level of operator expertise due to the need for nuclease digestion, subtraction of ribosomal RNA and a 10-20 fold increase in sequencing depth.

*Time required to process 100 samples through step 5 by two technicians is 2 weeks*

### Supply and other costs

• Extraction and RT (1 extraction and 2 RT-reactions x 100 samples):	\$ 3,000
• Primary nested PCR analyses (12 reactions x 100 samples):	\$ 2,400
• Followup nested PCR analyses (2 reactions x 5 samples):	\$ 20
• Gel electrophoresis after primary nested PCR (600 samples):	\$ 3,000
• Gel electrophoresis after followup nested PCR (5 samples):	\$ 25
• Ligation and transformation (10 samples)	\$ 50
• Colony isolation and sequencing (80 samples)	\$ 560
• VirCapSeq	\$ 8,000
<i>Total</i>	<i>\$17,055</i>

## VirCapSeq approach

Targeting all viruses of vertebrates with a record in GenBank and related viruses (genome sequencing if >80% nucleotide sequence conservation to a GenBank sequence; detection of novel viruses (ranging between 50-80% sequence conservation) through conserved regions/motifs).

1. Library preparation
2. Hybridization
3. Sequencing
4. Bioinformatic analyses

*Time required to process 100 samples for VirCapSeq through Step 4 by 1 technician and 1 bioinformatician is 2 weeks*

### *Supply and other costs*

• Extraction and RT (1 extraction and 1 cDNA-reaction x 100 samples):	~ \$ 2,500
• Library preparation (1 library x 100 samples)	~ \$ 9,000
• Sequence capture (1 capture/50 samples x 2)	~ \$ 340
• Sequencing (1 lane HiSeq/50 samples x 2)	~ \$ 5,000
• Bioinformatics	~ \$ 3,500
<i>Total</i>	<i>\$20,340</i>

## Comments

We show a cost difference for 100 samples of \$3,285 (\$17,055 for PCR vs \$20,340 for VirCapSeq). This is probably an over estimate because personnel effort is higher with the PCR approach. Not calculated is the cost of operator error and loss of resolution with the PCR approach. The potential for operator error is much higher with nested PCR than with VirCapSeq. Furthermore, failure of any of the primers will necessarily result in failure to detect a virus. Thomas and I appreciate that the family-based PCR approach generated important data and built a foundation for future work in PREDICT 1. VirCapSeq is nonetheless the best path forward for the GVP.

**From:** "William B. Karesh" <karesh@ecohealthalliance.org>  
**Sent:** 09/13/2017 8:27:41 AM (-07:00)  
**To:** [REDACTED]  
**Cc:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Subject:** Re: Thank you-etcetera etcetera 🙏

So glad you could join us. And great to finally meet you.

Billy

**William B. Karesh, D.V.M**

*Executive Vice President for Health and Policy*

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President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

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On Sep 13, 2017, at 9:36 AM, [REDACTED] > wrote:

Dear Jonna & Billy,

Just a quick note of thanks for letting me wine and dine with you all last night. I appreciate your gracious generosity and so enjoyed seeing/meeting the terrific Predict players. The company was every bit as delicious as the meal! I am only sorry that we missed out on the ensuing rooftop revelry. Must have been a spectacular nightscape.

Thanks again for such an enjoyable evening,

PK

Sent from my iPhone

**From:** REDACTED on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 09/19/2017 8:42:18 AM (-07:00)  
**To:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Cc:** "Brooke Watson" <watson@ecohealthalliance.org>; REDACTED  
"Alison Andre" <andre@ecohealthalliance.org>  
**Subject:** Edit to SOM if we get positive news from Science

Hi Peter,

Something to keep in the mix for modeling & editing, should Science come back positively. We've been trying to align the risk ranking paper with all of our other outputs, and REDACTED flagged this one for us:

"I did notice that you list Bocaviridae in the supplementary material, and from what I can find there is no such family. According to ICTV, all members of the Bocavirus (now called Bocaparvovirus) genus belong to the Parvoviridae family, but happy to be proved wrong."

Just a note for final proofing,  
J

**From:** "Cara Chrisman" <cchrisman@usaid.gov>  
**Sent:** 03/17/2018 3:17:18 PM (-07:00)  
**To:** "Dennis Carroll" <dcarroll@usaid.gov>  
**Cc:** "Peter Daszak" <daszak@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Nathan Wolfe" <nwolfe@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "Brooke Watson" <watson@ecohealthalliance.org>; [REDACTED] "Cassandra Louis Duthil" <clouisduthil@usaid.gov>; "Alison Andre" <andre@ecohealthalliance.org>; "Brooke Genovese" <bgenovese@ucdavis.edu>  
**Subject:** Re: In Person GVP Mtg

Sounds good, thanks for the quick responses!

Sent from my iPhone

On Mar 17, 2018, at 5:26 PM, Dennis Carroll <[dcarroll@usaid.gov](mailto:dcarroll@usaid.gov)> wrote:

All, thanks for the quick response. We need to huddle. Lots of machinations and great opportunities. I believe I can pull off the 9th. Cara, can you work with Cassandra to make it happen? Day flight on the 8th - Dulles to SF

THANKS

d

Dr Dennis Carroll  
Director, Emerging Threats Program  
U.S. Agency for International Development  
Office: (202) 712-5009  
Mobile: [REDACTED]

On Mar 17, 2018, at 11:58 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

BTW – if Dennis can't do April 9<sup>th</sup>, I do have dates after that for East coast or West coast...

Cheers,

Peter

**Peter Daszak**  
*President*

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[@PeterDaszak](#)

[@EcoHealthNYC](#)

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---

**From:** Peter Daszak

**Sent:** Saturday, March 17, 2018 11:53 AM

**To:** 'Jonna Mazet'; Cara Chrisman

**Cc:** Nathan Wolfe; Eddy Rubin; Brooke Watson; [REDACTED] Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese; Alison Andre

**Subject:** RE: In Person GVP Mtg

I could do the 9<sup>th</sup> April in Davis, although I have a Ph.D viva to do by phone from 9-11am PST that day, so maybe we do from 11am onwards?

The other dates are harder for me, and March 26<sup>th</sup> and April 3<sup>rd</sup> are definitely out...

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

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[@EcoHealthNYC](#)

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**From:** [REDACTED] **On Behalf Of** Jonna Mazet

**Sent:** Friday, March 16, 2018 7:02 PM

**To:** Cara Chrisman

**Cc:** Peter Daszak; Nathan Wolfe; Eddy Rubin; Brooke Watson; [REDACTED] Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese

**Subject:** Re: In Person GVP Mtg

Hi Cara,

Not sure if it will work for others, but Peter and Eddy will be joining me for a Predict Semi-annual consortium meeting in Napa on April 10 & 11.

We'll see what Peter says, but we could add April 9 to their potential travel schedules and meet in Napa or Davis on the 9th. I can't do the 12th, I'm afraid, as I have a One Health Institute Annual Meeting that day.

Alternatively, I may be able to change a ticket around and be in New York on March 26 after 9:30 am. That option is more risky, as my mom is having surgery next week, and if that doesn't go well, I'll have to cancel my New York travel.

March 29th or April 3 in Davis are options.

Let me know & have a nice weekend,

Jonna

On Fri, Mar 16, 2018 at 12:35 PM, Cara Chrisman <[cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)> wrote:  
Hi Team,

Following a series of conversations over the past few days and building on the work which came out of Bangkok and the BCG project, we would like to propose an in-person GVP meeting.

The plan for the meeting would be to walk through where we are, any issues, plot out how to navigate the way forward, and assess the 100 day plan. We envision this to be best accomplished in person and to take around a full day.

We realize everyone is quite busy, but given the momentum and other questions which have arisen recently, we would like to propose that we have the meeting in the next 3 weeks (if possible). Perhaps to be held in UC Davis, if that makes the most sense for everyone's schedules.

We would like to request that your schedulers work with Cassandra to identify a time and location for the meeting.

Thanks in advance,

Cara

Cara J. Chrisman, PhD  
Senior Infectious Diseases Technical Advisor  
Emerging Threats Division  
Office of Infectious Disease  
Bureau for Global Health  
U.S. Agency for International Development (USAID)

Desk: [\(571\) 551-7413](tel:5715517413)

Cell: **REDACTED**

E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/17/2018 3:21:53 PM (-07:00)  
**To:** "Cara Chrisman" <cchrisman@usaid.gov>; "Dennis Carroll" <dcarroll@usaid.gov>  
**Cc:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Nathan Wolfe" <nwolfe@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "Brooke Watson" <watson@ecohealthalliance.org>; REDACTED  
REDACTED; "Cassandra Louis Duthil" <clouisduthil@usaid.gov>; "Alison Andre" <andre@ecohealthalliance.org>; "Brooke Genovese" <bgenovese@ucdavis.edu>  
**Subject:** RE: In Person GVP Mtg

OK – I'll book in on that day too..

Cheers,

Peter

**Peter Daszak**  
*President*

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[@PeterDaszak](#)  
[@EcoHealthNYC](#)

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---

**From:** Cara Chrisman [mailto:cchrisman@usaid.gov]  
**Sent:** Saturday, March 17, 2018 6:17 PM  
**To:** Dennis Carroll  
**Cc:** Peter Daszak; Jonna Mazet; Nathan Wolfe; Eddy Rubin; Brooke Watson; REDACTED; Cassandra Louis Duthil; Alison Andre; Brooke Genovese  
**Subject:** Re: In Person GVP Mtg

Sounds good, thanks for the quick responses!

Sent from my iPhone

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All, thanks for the quick response. We need to huddle. Lots of machinations and great opportunities. I believe I can pull off the 9th. Cara, can you work with Cassandra to make it happen? Day flight on the 8th - Dulles to SF



THANKS

d

Dr Dennis Carroll  
Director, Emerging Threats Program  
U.S. Agency for International Development  
Office: (202) 712-5009  
Mobile: **REDACTED**

On Mar 17, 2018, at 11:58 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

BTW – if Dennis can't do April 9<sup>th</sup>, I do have dates after that for East coast or West coast...

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
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[@PeterDaszak](https://twitter.com/PeterDaszak)  
[@EcoHealthNYC](https://twitter.com/EcoHealthNYC)

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---

**From:** Peter Daszak  
**Sent:** Saturday, March 17, 2018 11:53 AM  
**To:** 'Jonna Mazet'; Cara Chrisman  
**Cc:** Nathan Wolfe; Eddy Rubin; Brooke Watson; **REDACTED** Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese; Alison Andre  
**Subject:** RE: In Person GVP Mtg

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Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

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[@PeterDaszak](#)

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**From:** [REDACTED] **On Behalf Of** Jonna Mazet  
**Sent:** Friday, March 16, 2018 7:02 PM  
**To:** Cara Chrisman  
**Cc:** Peter Daszak; Nathan Wolfe; Eddy Rubin; Brooke Watson; [REDACTED]; Dennis Carroll; Cassandra Louis Duthil; Alison Andre; Brooke Genovese  
**Subject:** Re: In Person GVP Mtg

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Let me know & have a nice weekend,  
Jonna

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We would like to request that your schedulers work with Cassandra to identify a time and location for the meeting.

Thanks in advance,  
Cara

Cara J. Chrisman, PhD  
Senior Infectious Diseases Technical Advisor  
Emerging Threats Division  
Office of Infectious Disease  
Bureau for Global Health  
U.S. Agency for International Development ([USAID](#))

Desk: [\(571\) 551-7413](tel:5715517413)

Cell: **REDACTED**

E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/19/2018 9:12:40 AM (-07:00)  
**To:** "Nathan Wolfe" <nwolfe@metabiota.com>; "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Cc:** "Cara Chrisman" <cchrisman@usaid.gov>; "Dennis Carroll" <dcarroll@usaid.gov>; "Eddy Rubin" <erubin@metabiota.com>; "Brooke Watson" <watson@ecohealthalliance.org>; [REDACTED]  
"Cassandra Louis Duthil" <clouisduthil@usaid.gov>; "Alison Andre" <andre@ecohealthalliance.org>; "Brooke Genovese" <bgenovese@ucdavis.edu>  
**Subject:** Booked in for Sacramento April 9th - In Person GVP Mtg

Hi all – I've booked my flight and will be at Sacramento ready for the meeting on the 9<sup>th</sup>...

Look forward to brainstorming with y'all...

Cheers,

Peter

**Peter Daszak**  
*President*

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**From:** Nathan Wolfe [mailto:nwolfe@metabiota.com]  
**Sent:** Sunday, March 18, 2018 12:58 PM  
**To:** Jonna Mazet  
**Cc:** Cara Chrisman; Dennis Carroll; Peter Daszak; Eddy Rubin; Brooke Watson; [REDACTED] Cassandra Louis Duthil; Alison Andre; Brooke Genovese  
**Subject:** Re: In Person GVP Mtg

April 9th works for me!

On Sat, Mar 17, 2018 at 5:21 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:  
You may have more direct flight options to SFO (convenience there), but there is at least one direct/day to SMF, which is a bit easier traffic-wise for Davis and Napa.  
Up to you,  
Jonna

On Sat, Mar 17, 2018 at 3:17 PM, Cara Chrisman <[cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)> wrote:  
Sounds good, thanks for the quick responses!

Sent from my iPhone

On Mar 17, 2018, at 5:26 PM, Dennis Carroll <[dcarroll@usaid.gov](mailto:dcarroll@usaid.gov)> wrote:

All, thanks for the quick response. We need to huddle. Lots of machinations and great opportunities. I believe I can pull off the 9th. Cara, can you work with Cassandra to make it happen? Day flight on the 8th - Dulles to SF

THANKS

d

Dr Dennis Carroll  
Director, Emerging Threats Program  
U.S. Agency for International Development  
Office: [\(202\) 712-5009](tel:(202)712-5009)  
Mobile: **REDACTED**

On Mar 17, 2018, at 11:58 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

BTW – if Dennis can't do April 9<sup>th</sup>, I do have dates after that for East coast or West coast...

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
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E-mail: [cchrisman@usaid.gov](mailto:cchrisman@usaid.gov)

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 04/19/2018 10:21:59 AM (-07:00)  
**To:** REDACTED; REDACTED; "Ariful Islam" <arif@ecohealthalliance.org>; "Jon Epstein" <epstein@ecohealthalliance.org>; "Hongying Li" <li@ecohealthalliance.org>; "ckjohnson@ucdavis.edu" <ckjohnson@ucdavis.edu>; "Emily Hagan" <hagan@ecohealthalliance.org>; "Thomas Hughes" <tom.hughes@ecohealthalliance.org>; "Allison White" <white@ecohealthalliance.org>; "olival@ecohealthalliance.org" <olival@ecohealthalliance.org>; "Alice Latinne" <latinne@ecohealthalliance.org>; REDACTED  
"tgoldstein@ucdavis.edu" <tgoldstein@ucdavis.edu>; "dmciver@metabiota.com" <dmciver@metabiota.com>; "ssilithammavong@metabiota.com" <ssilithammavong@metabiota.com>; REDACTED  
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REDACTED "Ava Sullivan" <sullivan@ecohealthalliance.org>; REDACTED  
REDACTED "Debapriyo Chakraborty" <chakraborty@ecohealthalliance.org>; REDACTED  
REDACTED  
"murrays@si.edu" <murrays@si.edu>; "valituttoM@si.edu" <valituttoM@si.edu>; "Patrick Dawson" <dawson@ecohealthalliance.org>; REDACTED  
"ghazi@human-link.org" <ghazi@human-link.org>; "William B. Karesh" <karesh@ecohealthalliance.org>; REDACTED  
REDACTED "jayukekbong@metabiota.com" <jayukekbong@metabiota.com>; REDACTED  
REDACTED; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>;  
"ksaylors@metabiota.com" <ksaylors@metabiota.com>; "pmulembakani@metabiota.com" <pmulembakani@metabiota.com>; REDACTED  
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REDACTED; "Jim Desmond" <desmond@ecohealthalliance.org>; "cmonagin@ucdavis.edu" <cmonagin@ucdavis.edu>;  
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"ZimmermanD@si.edu" <ZimmermanD@si.edu>; "jkamau@primateresearch.org" <jkamau@primateresearch.org>; REDACTED  
REDACTED "wasmith@ucdavis.edu" <wasmith@ucdavis.edu>;  
"jklane@ucdavis.edu" <jklane@ucdavis.edu>; "jkmazet@ucdavis.edu" <jkmazet@ucdavis.edu>  
**Cc:** "Alison Andre" <andre@ecohealthalliance.org>; "Aleksei Chmura" <chmura@ecohealthalliance.org>; "Kevin Olival, PhD" <olival@ecohealthalliance.org>; "Anna Willoughby" <willoughby@ecohealthalliance.org>; "predict@ucdavis.edu" <predict@ucdavis.edu>; "Kevin Olival, PhD (olival@ecohealthalliance.org)" <olival@ecohealthalliance.org>; "Noam Ross" <ross@ecohealthalliance.org>  
**Subject:** PREDICT Emerging Disease Insights - 2 pagers  
**Attachments:** EDI Economic case for the GVP.pdf, EDI Identifying the next Zika virus.pdf, EDI Measuring viral discovery.pdf  
**Importance:** High

Dear PREDICT global team leads, regional leads and country coordinators,

I am delighted to share with you the latest Emerging Disease Insights (EDIs) 2-pagers from our PREDICT Modeling and Analytics Team. These are 2-page reports on the analyses that our team is doing to guide surveillance and test out ideas about the risk of emergence of novel PREDICT viruses we discover. These three focus on:



1. Measuring viral discovery: Using the viral accumulation curves from PREDICT 1 to determine how many samples we need to collect and test to discover the majority of viruses in a host species
2. Identifying the next Zika virus: Analyzing all known flaviviruses to assess which ones have the characteristics that could allow them to emerge and spread.
3. Economic case for the GVP: Economic analysis of the Global Virome Project sampling and testing strategy, with an estimate of return-on-investment.

These EDIs are intended to be easily understood, provide an interesting background story based on PREDICT that demonstrates how we're using state-of-the-art modeling and analytics, and our data from PREDICT, to better understand the risk of disease emergence globally. Please share them widely with your staff, colleagues and partners! They will also be available publicly from [livescience.ecohealthalliance.org](https://livescience.ecohealthalliance.org), as well as on Basecamp, of course.

We are actively working on other Emerging Disease Insights to be completed this and next year, so please send any ideas you may have: Comments are very welcome!

Cheers,

Peter

**Peter Daszak**

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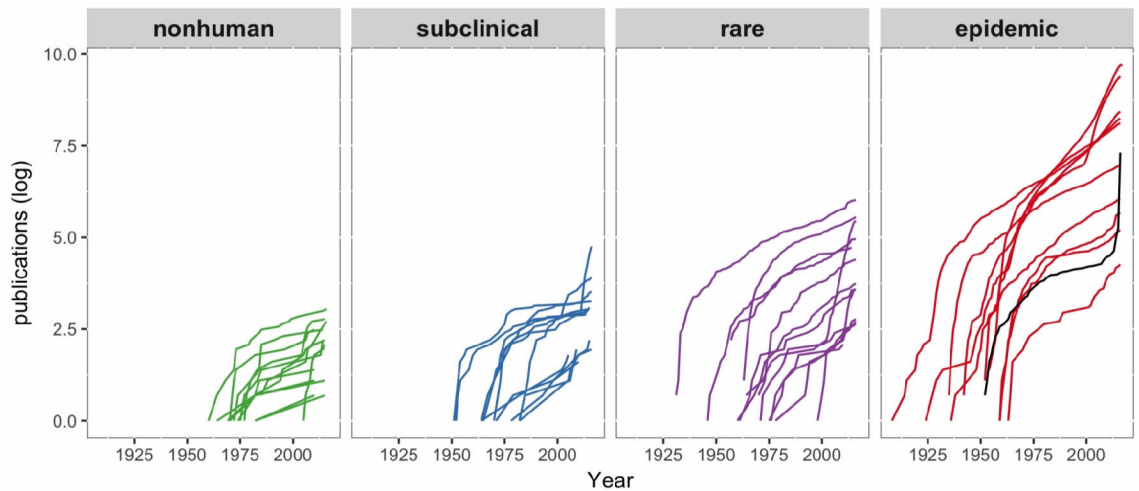
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# Identifying the Next Zika: An Analysis of Understudied Flaviviruses

The ongoing Zika virus epidemic was declared a public health emergency of international concern by WHO in February 2016, due to its rapid spread and link to birth defects. Despite discovery in 1947, evidence of human infection, and close relation to high-impact human viruses like Dengue and Yellow Fever, the study of Zika remained limited until the Yap Island, Micronesia outbreak in 2007<sup>1</sup> (Figure 1). The pandemic spread of Zika emphasizes the need to better understand the distribution, host range, and epidemic potential of other understudied flaviviruses<sup>2</sup>.

The PREDICT-2 Modeling & Analytics team compiled a database of all known natural host and vector species for the 53 ICTV-recognized viruses<sup>3</sup> in the genus *Flavivirus*. In total, 1,768 flavivirus-host associations (including 317 unique mammal species and 743 bird species) and 309 flavivirus-vector associations (149 unique insect vector species) were identified. We then calculated the taxonomic breadth and geographic range of each flavivirus in order to inform both current and potential risks of flavivirus spillover and spread.



**Figure 1:** Publication effort 1900-2016 of each flavivirus (n = 53). Publication counts per virus retrieved from Web of Science on 10/27/16. Virus color based on human impact: nonhuman viruses = green, subclinical viruses (detected only via serology) = blue, rare viruses (<20 pathogenic cases) = purple, epidemic viruses (>20 pathogenic cases) = red. Zika is colored black to emphasize the sharp rise in publications after its human impact changed to epidemic in 2007.

In order to control for the effect of research effort and understand the relative importance of host and vector breadth in the zoonotic potential of Flaviviruses, we developed a generalized linear model of likelihood a virus is zoonotic. We simplify host and vector breadth to the lowest taxonomic group that encompasses all known natural host or vector species. Both non-human host breadth (p = 0.02) and vector breadth (p = 0.03) were significant in determining if a virus is classified as zoonotic, so these variables were used to prioritize viruses for more research (Table 1). Using the IUCN mammalian range and BirdLife spatial files, we created a unique vertebrate host distribution layer for each flavivirus, and combine these to produce a global map of known flavivirus diversity in wild mammals and birds (Figure 2).

Of the 53 flaviviruses, 37 (70%) have been detected in humans, and 25 of these human-

April 16, 2018

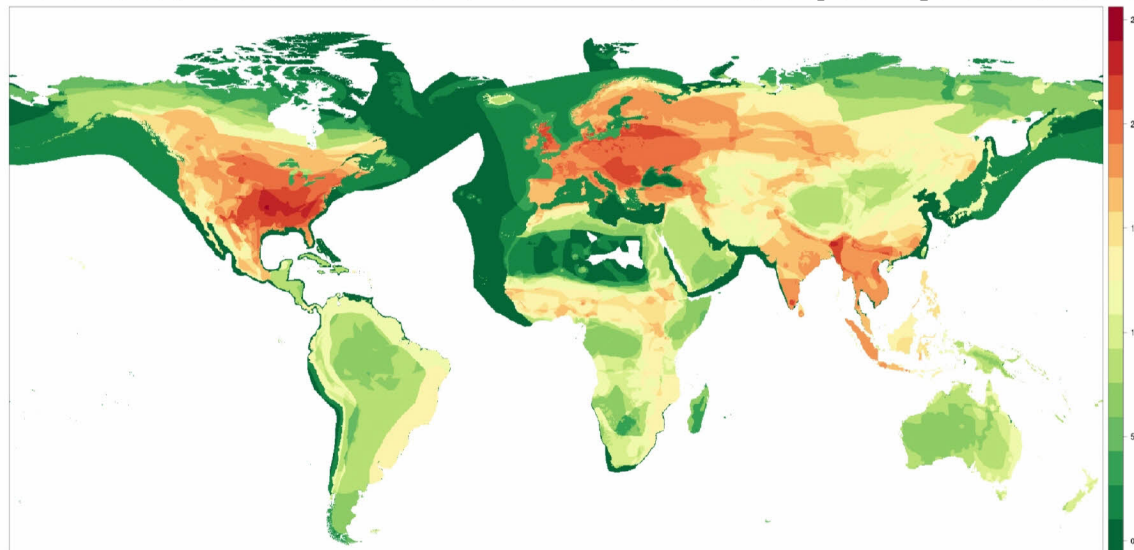
For details on methods or analysis contact: [PREDICTmodeling@ecohealthalliance.org](mailto:PREDICTmodeling@ecohealthalliance.org)



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associated flaviviruses have yet to cause significant outbreaks. Using taxonomic breadth of host and vectors, we prioritize 10 of these 25 pre-epidemic flaviviruses for further research using just two variables (host and vector breadth) that relate to zoonotic and epidemic potential (Table 1).



**Figure 2:** Geographic map of currently known flavivirus diversity in wild mammals and birds (n = 42 viruses). Virus distribution calculated as aggregate range of all mammal and bird hosts for each virus (1 to 294 host per virus, median = 3). Redder regions show higher concentration of unique flaviviruses based on vertebrate host range. Hotspots in the United States and Europe likely due to research bias.

**Table 1:** The top 10 pre-epidemic human flaviviruses prioritized for further research based on large host and vector breadth. Current human infection is classified as subclinical (only detected in humans via serology) or rare (<20 human cases).

Virus	Human Infection	Host Breadth	Vector Breadth	Host Orders	Pub Count
Wesselsbron	rare	Phylum	Phylum	4	113
Usutu	rare	Phylum	Family	11	234
Ilheus	rare	Phylum	Family	4	142
Louping Ill	rare	Phylum	Genus	8	413
Uganda S	subclinical	Phylum	Genus	2	26
Tembusu	subclinical	Class	Family	3	116
Aroa	rare	Class	Family	2	36
Bagaza	rare	Class	Family	2	36
Saboya	subclinical	Class	Species	5	21
Apoi	rare	Order	none	1	15

Zika virus has now been detected in South American mammals<sup>4</sup>, which shows that human transport of a virus can lead to establishment in new animal hosts. Viral adaptability to diverse host and vector species is likely critical for successful formation of new sylvatic cycles. Our analyses highlight the need for ongoing monitoring of host and vector breadth to identify pre-epidemic viruses, potential new viral reservoirs, and geographic areas prone to viral expansion. In particular, we found that Wesselsbron virus and Usutu virus are high priority neglected flaviviruses at risk of becoming epidemic.

## References

1. Kindhauser, M. K. *et al.* Zika: the origin and spread of a mosquito-borne virus. *Bull World Health Organ* 171082 (2016).
2. Olival, K. J. & Willoughby, A. R. Prioritizing the dormant flaviviruses. *EcoHealth* (2017).
3. King, A. M. *et al.* Virus taxonomy: classification and nomenclature of viruses: Ninth Report of the International Committee on Taxonomy of Viruses. Vol. 9, Elsevier (2011).
4. Favoretto, S. *et al.* First detection of Zika virus in neotropical primates in Brazil: a possible new reservoir. *bioRxiv*, 049395 (2016).

# Global Costs of Emerging Infectious Diseases: an Economic Case for the Global Virome Project

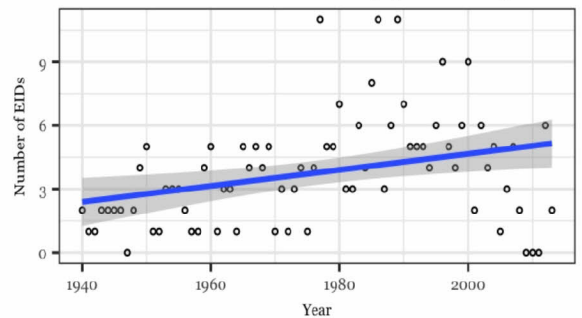
A single emerging infectious disease epidemic such as the SARS pandemic in 2003 can cost the global economy an estimated \$30-50 billion, but investments in prevention and research are often insufficient. To make the economic case for investing in large-scale research, surveillance, and prevention programs, it is important to model and quantify the future economic impacts of Emerging Infectious Diseases (EIDs) and pandemics.

The **Global Virome Project (GVP)** is a proposed 10-year global effort to discover the majority of viruses with likely zoonotic potential residing in mammals and waterfowl. This project could reduce the burden of emerging infectious diseases by creating a viral sequence and metadata atlas that will support risk assessments, development of mitigation plans, and lower response times. The data generated by the GVP is also likely to speed technological advancements and provide a starting point for diagnostic and therapeutic discovery and development. Based on current projected lab and field costs, the GVP is estimated to be achievable for \$1.2 billion or \$120M annually over the next ten years. Given our estimations of EID frequency, mortality rates, and impacts on the global economy, we project the costs of all potential zoonotic emerging disease events over the next 30 years and calculate projected Return on Investment (ROI).

## COSTS OF EMERGING INFECTIOUS DISEASES

The incidence of emerging infectious disease events is on the rise (1). A majority of these diseases, including SARS, MERS, Avian Influenza, and Ebola, are zoonoses caused by spillover from animal into human populations. To project future annual rates of zoonotic EID events, we calculate the average frequency and variance of EID events per year and the rate of change over time (2). We built a model to estimate the mortality, morbidity, and economic shocks per event, based on case fatality data from the **Emerging Infectious Diseases Repository (EIDR)**.

**Figure 1: Annual frequency of Emerging Infectious Diseases from 1940 to 2013.**



Source: EIDR.ecohealthalliance.org

## ESTIMATING GLOBAL DAMAGES FROM EID EVENTS

Global damages, or economic costs, from emerging infectious diseases (EID) depend on the annual number of EID events and the average cost of each event. Damages of one event are the sum costs from mortality  $M(t)$ , morbidity  $A(t)$ , and economic shocks  $G(t)$ . To find the total present value of global damages  $PVGD$ , we use a standard five percent rate ( $\delta=0.05$ ) to discount future savings to their current value.

$$PVGD = \int_{t=0}^{t=30} (M(t) + A(t) + G(t)) e^{-\delta t}$$

We use conventional methods to calculate the value of a statistical life and the value of one day

April 16, 2018

For details on methods or analysis contact: [PREDICTmodeling@ecohealthalliance.org](mailto:PREDICTmodeling@ecohealthalliance.org)



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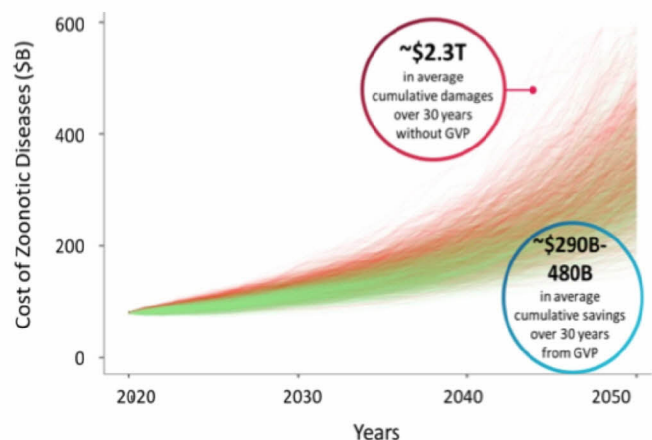
of work lost (3). In our model, economic shocks are proportional to the mortality of the event. We parameterized our model using the forecasted number of annual EID events, the historical global GDP growth rate of 2.4%, and the 2015 global GDP of \$73.4 trillion. **Averaged over 5000 simulations, we find the discounted cost of emerging infectious diseases to be US\$2.3 trillion over the next 30 years.**

## COSTS AND ROI OF A GLOBAL VIROME PROJECT

To determine how much it would cost to discover all viral diversity in mammals, mark-recapture ecological techniques were used to estimate the sampling effort required to discover all viruses present in one species (4). We estimate that there are 1,669,106 (se 697,623 - 2,640,590) undiscovered viruses likely to reside in mammal and water bird hosts (2). However, only 32.2-45.0% (493,856-689,285) of these are likely to be zoonotic, and the ones that are more costly to find are less likely to spillover. Assuming that all mammal species would have equivalent lab and field costs, discovering 71% of all mammalian viruses and water bird influenzas would cost \$1.2 billion, or an average of \$120 million per year over 10 years.

Having a baseline of identified viral sequences would lead to earlier detection and quicker response times, lowering both epidemic frequency and impact. These improvements would not have an immediate impact, but benefits would accumulate throughout and beyond the lifespan of the GVP. For our calculations, we assume that these benefits collectively lead to an average of 10% in savings from damages in all events in the next 30 years (\$290-480 billion). As such, a \$1.2 billion Global Virome Project would return over \$200 dollars in savings for each dollar invested.

**Figure 2. Forecasted economic damages from EIDs over the next 30 years.**



*Red line shows damage growth under business-as-usual, green line shows reduced growth if the GVP causes a 10% reduction in damages.*

Even if the GVP only reduces the likelihood and impact of EIDs by 10%, this project would generate large returns on investment due to the high and rising costs of pandemics. The premature loss of lives and economic shocks account for the largest proportion of economic damages from EID events. A \$120 million annual budget for a 10-year Global Virome Project is an investment that could produce exceptionally high returns.

## References

1. Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, et al. Global trends in emerging infectious diseases. *Nature*. 2008;451:990-3.
2. Carroll D, Daszak P, Wolfe ND, Gao GF, Morel CM, Morzaria, S, Mazet, JAK. The Global Virome Project. *Science*. 2018; 359(6378): 872-4.
3. Molinari NAM, Ortega-Sanchez IR, Messonnier ML, et al. The annual impact of seasonal influenza in the US: Measuring disease burden and costs. *Vaccine*. 2007;25:5086-96.
4. Anthony SJ, Epstein JH, Murray KA, Navarrete-Macias I, Zambrana-Torrel CM, Solovyov A, et al. A strategy to estimate unknown viral diversity in mammals. *mBio*. 2013;4.

## Improving Viral Sampling and Discovery: Viral Accumulation Curves

The USAID PREDICT project conducts viral surveillance in wildlife, domestic animals, and humans at a global scale. PREDICT teams in >30 countries worldwide have collected and tested samples from wildlife species and have discovered over 1,000 viruses from viral families known to threaten human health. Wildlife species are prioritized for surveillance based on existing scientific knowledge about the likelihood of viral spillover from these hosts to humans [1]. PREDICT aims to characterize viral diversity in mammals, which may represent hundreds of thousands of unknown viral species [2], before they emerge in people or domestic animals.

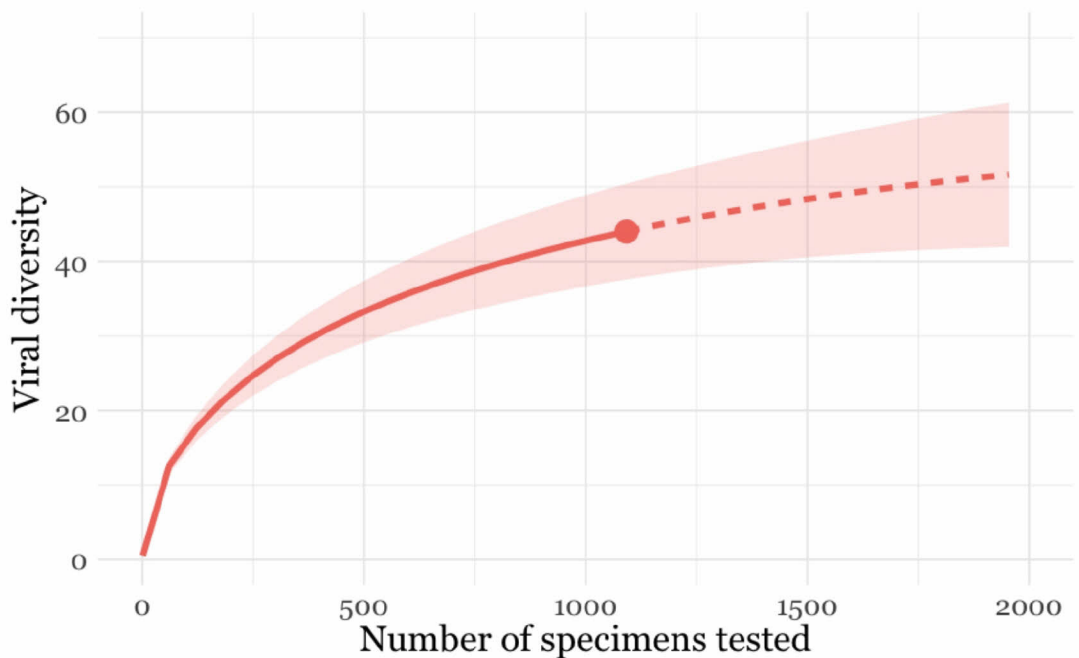
### CHALLENGE: HOW MANY SAMPLES DO WE NEED TO COLLECT AND TEST TO FIND MOST OF THE VIRUSES IN A GIVEN HOST?

PREDICT seeks to discover currently unknown viruses in wildlife species that have been poorly sampled prior to this project. We need tools to tell us when we have discovered a majority of the viruses naturally circulating in a species so that we can stop sampling that species and move on to others.

### SOLUTION: VIRAL ACCUMULATION CURVES

The PREDICT team uses statistical modeling techniques to solve this problem. Specifically, we are applying *species richness estimation methods* to determine when a wildlife species has been comprehensively sampled [3]. These estimates, typically used in ecological studies and modified here for viral discovery, can be expressed visually as *viral accumulation curves*.

*Pteropus giganteus* Viral Sampling (Nine Viral Families)



April 16, 2018

For details on methods or analysis contact: [PREDICTmodeling@ecohealthalliance.org](mailto:PREDICTmodeling@ecohealthalliance.org)



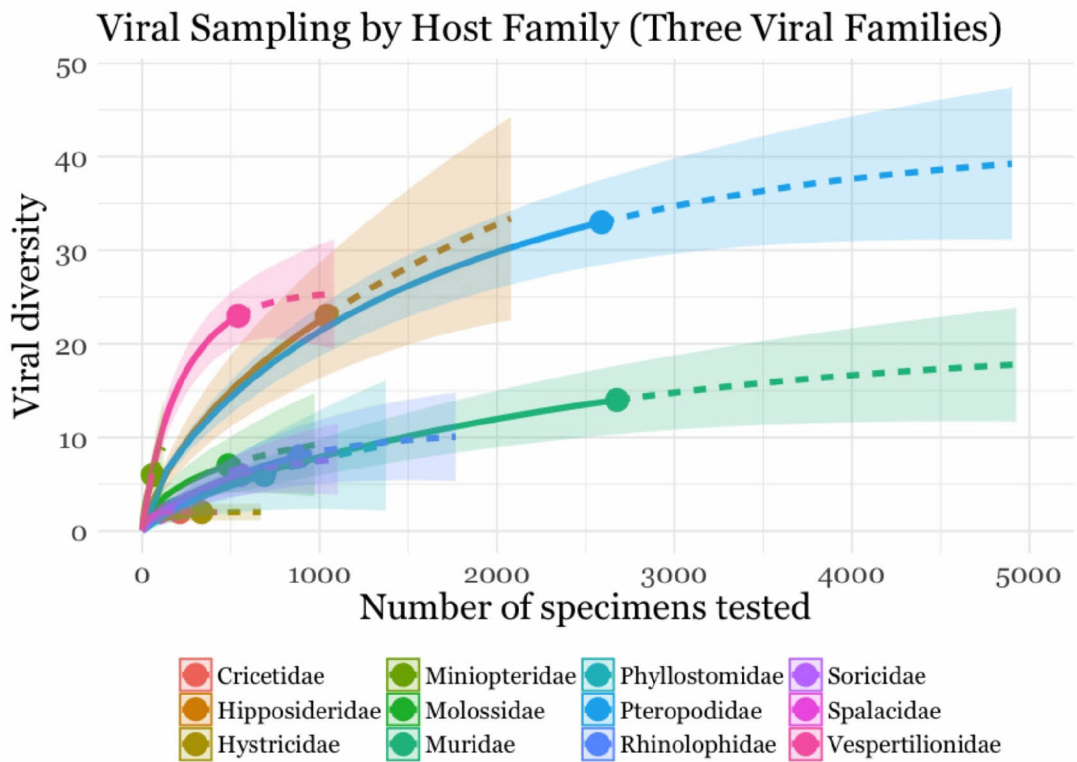
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**Figure 1:** Viral accumulation curve for the bat species *Pteropus giganteus*, adapted from Anthony et al. [4]. The x-axis of the graph shows the number of specimens, or samples, tested for nine viral families, and the y-axis indicates the number of unique viruses discovered in those samples. The solid line represents observed data, and the dashed portion represents statistically-derived estimates of viral diversity if sampling of *P. giganteus* is continued. The upward trend of the dashed line suggests that *P. giganteus* likely harbors more than the 44 viruses that were observed in this particular viral sampling effort.

The theory underlying these methods is that if sampling efforts repeatedly result in detection of a similar set of viruses, then sampling is likely to be near completion (i.e., most of the species present have been observed). In contrast, if sampling continues to generate observations of new viruses, then the pathogen community likely has many species yet to be observed. Early work by the PREDICT project used these techniques to estimate that the bat species *Pteropus giganteus* hosts a total of 58 viruses across nine viral families (Fig. 1) [4] and that rhesus macaques (*Macaca mulatta*) host 283 viruses across 14 viral families [5].

These pilot studies provide a proof-of-concept that has now been applied to other PREDICT data (Fig. 2). In addition to their usefulness in helping guide sampling strategies, comparison among accumulation curves can identify host species that consistently carry high viral diversity, potentially making them more important viral reservoirs. Viral observations can also be aggregated at coarser levels of host taxonomy to allow comparison of host genera or families, for example.



**Figure 2:** Viral accumulation curves using PREDICT data estimating viral species richness across host *families* for three major viral families: Coronaviruses, Influenzas, and Paramyxoviruses. These results suggest that, for these three viral families, some host taxa still have considerable viral diversity yet to be discovered (e.g., bats in the Hipposideridae which have an accumulation curve still trending upwards), whereas for others there is little unobserved viral diversity remaining.



## CONCLUSIONS

- Species accumulation curves are a statistical method used to estimate the amount of unobserved diversity in a biological sample. For PREDICT, we have applied these techniques to our viral discovery data obtained from wildlife hosts.
- Application of viral accumulation curves using data from the PREDICT project, which is collected and tested in a consistent manner across species and countries, can improve our knowledge of which host taxa carry particularly rich viral assemblages and which host taxa require additional sampling efforts.
- These analytical tools support the overarching goals of PREDICT: to standardize global viral surveillance, more completely characterize novel viruses in reservoir host populations, and generate critical baseline knowledge to help prevent viral spillover.

## REFERENCES

- [1] Olival KJ, Hosseini PR, Zambrana-Torrel C, Ross N, Bogich TL, et al. (2017) *Host and viral traits predict zoonotic spillover from mammals*. *Nature* 546: 646–650. doi: [10.1038/nature22975](https://doi.org/10.1038/nature22975)
- [2] Carroll D, Daszak P, Wolfe ND, Gao GF, Morel CM, et al. (2018) *The Global Virome Project*. *Science* 359: 872-874. doi: [10.1126/science.aap7463](https://doi.org/10.1126/science.aap7463)
- [3] Chao A, Chiu C-H. (2016) *Species Richness: Estimation and Comparison*. Wiley StatsRef: Statistics Reference Online. 1–26. doi: [10.1002/9781118445112.stat03432.pub2](https://doi.org/10.1002/9781118445112.stat03432.pub2)
- [4] Anthony SJ, Epstein JH, Murray KA, Navarrete-Macias I, Zambrana-Torrel CM, et al. (2013) *A strategy to estimate unknown viral diversity in mammals*. *mBio* 4: e00598-13. doi: [10.1128/mBio.00598-13](https://doi.org/10.1128/mBio.00598-13)
- [5] Anthony SJ, Islam A, Johnson C, Navarrete-Macias I, Liang E, et al. (2015) *Non-random patterns in viral diversity*. *Nature Communications* 6: 8147. doi: [10.1038/ncomms9147](https://doi.org/10.1038/ncomms9147)

**From:** [REDACTED] on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 04/25/2018 1:31:35 PM (-07:00)  
**To:** "Lipkin, Ian W." <wil2001@cumc.columbia.edu>  
**Cc:** "djwolking@ucdavis.edu" <djwolking@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Final Decision made for NCOMMS-14-17103C

No problem -- congrats again,  
Jonna

On Wed, Apr 25, 2018 at 11:13 AM, Lipkin, Ian W. <[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)> wrote:  
Sorry Jonna. We've lost the opportunity. Nature gave us 48 hours.

W. Ian Lipkin, MD  
John Snow Professor of Epidemiology and Director  
Center for Infection and Immunity  
Mailman School of Public Health

Professor of Pathology and Neurology  
College of Physicians & Surgeons  
Columbia University  
722 West 168th Street, 17th Floor  
New York, NY 10032  
Voice: [\(212\) 342-9033](tel:(212)342-9033)  
Fax: [\(212\) 342-9044](tel:(212)342-9044)  
Email: [wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)

Kelly Harpula  
Administrative Coordinator to the Director  
Voice: [\(212\) 342-9032](tel:(212)342-9032)  
Email: [kh2907@cumc.columbia.edu](mailto:kh2907@cumc.columbia.edu)

On Apr 25, 2018, at 2:07 PM, Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)> wrote:

Congrats, Ian & thanks very much for considering including Predict. We'd love that!  
If there is time to include Predict in the acknowledgements, that would be optimal.  
David is going to send three versions of acknowledgement wording according to different levels of Predict involvement, as Peter mentioned.  
Great work & thanks,  
Jonna

On Mon, Apr 23, 2018 at 7:22 AM, Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)> wrote:

Looks like another v. interesting paper Ian.

We have some language we use for papers covering work that is allied to PREDICT – i.e. builds on the expertise, collaborations, sampling etc. from PREDICT. Jonna's been out on vacation so can give you the full details when she's back.

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance

[460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor](#)

New York, NY 10001

Tel. +1 212-380-4474

[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

[@PeterDaszak](#)

[@EcoHealthNYC](#)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

---

**From:** Lipkin, Ian W. [mailto:[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)]  
**Sent:** Wednesday, April 18, 2018 2:21 PM  
**To:** Peter Daszak; Mazet Jonna  
**Subject:** Fwd: Final Decision made for NCOMMS-14-17103C

Dear Peter and Jonna-

FYI. It's not viral but we would like to include it as a PREDICT product. OK?

ian

Begin forwarded message:

**From:** <[naturecommunications@nature.com](mailto:naturecommunications@nature.com)>  
**Subject:** Final Decision made for NCOMMS-14-17103C  
**Date:** April 9, 2018 at 11:48:12 AM EDT  
**To:** <[wil2001@cumc.columbia.edu](mailto:wil2001@cumc.columbia.edu)>  
**Reply-To:** <[naturecommunications@nature.com](mailto:naturecommunications@nature.com)>

Dear Dr Lipkin,

We are delighted to accept for publication the manuscript "Gut Microbiomes of Wild Great Apes Fluctuate Seasonally in Response to Diet" by Allison L. Hicks, Kerry Jo Lee, Mara Couto-Rodriguez, Juber Patel, Rohini Sinha, Cheng Guo, Sarah Olson, Anton Seimon, Tracie Seimon, Alain U. Ondzie, William Karesh, Patricia Reed, Kenneth N. Cameron, W. Ian Lipkin, and Brent L. Williams [Paper #NCOMMS-14-17103C], on which you were a Contributing Author.

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As soon as your article is published, you can generate your shareable link by entering the DOI of your article here: <http://authors.springernature.com/share>

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**From:** William B. Karesh <karesh@ecohealthalliance.org>  
**To:** David Wolking <djwolking@ucdavis.edu>  
**CC:** Tracey Goldstein <tgoldstein@ucdavis.edu>; Elizabeth Leasure <ealeasure@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; predict@ucdavis.edu <predict@ucdavis.edu>; Catherine Machalaba <machalaba@ecohealthalliance.org>; Chris Johnson <ckjohnson@ucdavis.edu>; Peter Daszak <daszak@ecohealthalliance.org>; Catherine Machalaba <machalaba@ecohealthalliance.org>  
**Sent:** 6/27/2018 8:37:40 AM  
**Subject:** Re: [predict] next brown bag at USAID

Yes, indeed. Attached.

The beginning should cover the 6 or 7 other work streams, then jump to the topic of the day.

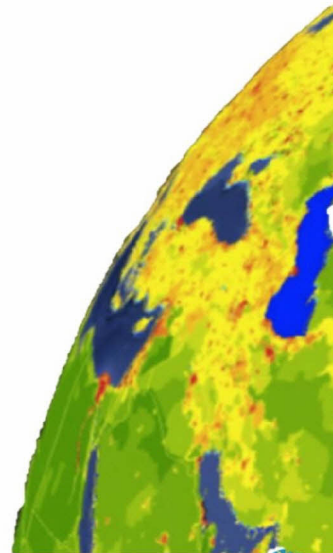
You will also notice some blue boxes in the corners throughout the slides where we matched up our work with GHSA action packages

BK



# One Health Policies and Partners

*William B. Karesh and Catherine  
Machalaba*  
EcoHealth Alliance



EcoHealth  
Alliance



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**Emerging Pandemic Threats  
Program 2 (EPT-2)**

## The Challenge

*Pre-empt or combat, at their source, the first stage of emergence of zoonotic diseases that pose a significant threat to public health (potentially pandemic infections)*



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## Emerging Infectious Diseases

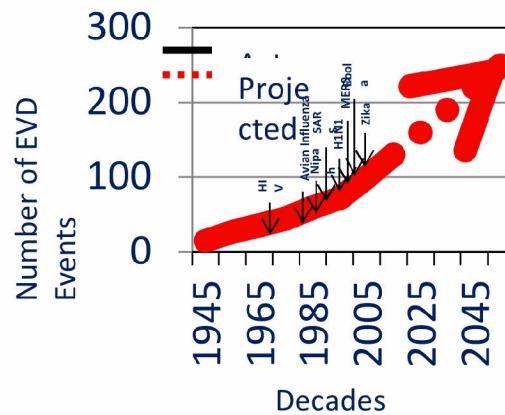


- Majority are of animal origin (zoonotic)
- 75% of emerging zoonoses have wildlife origins
- Human activities at the interface are linked to EIDs (Nipah, SARS, Ebola)



Emerging Pandemic Threats  
Program 2 (EPT-2)

## Threat from Emerging Viruses



Each year, approx. 3 new Viral Diseases emerge

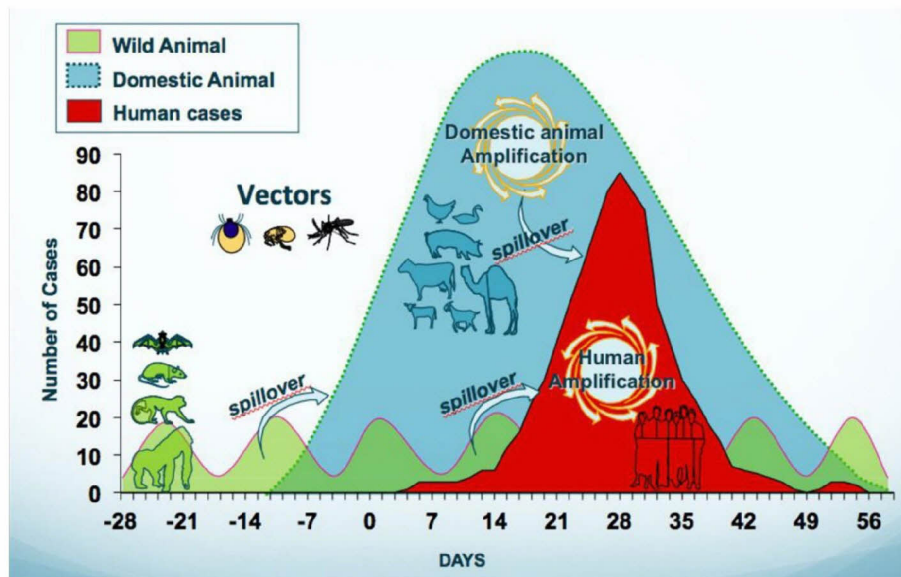
Driven by

- Population expansion (1.6 billion in 1900 to 11.5 billion people in 2100)
- Changes in land use and agricultural practices which accelerate the "spillover" from wildlife to humans



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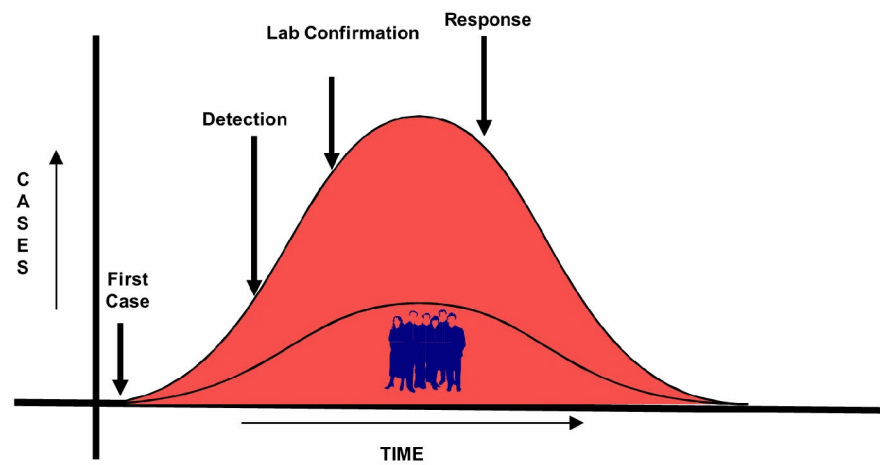
Source: Karesh et al. 2012. The Lancet & WHO



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## Detection and Response



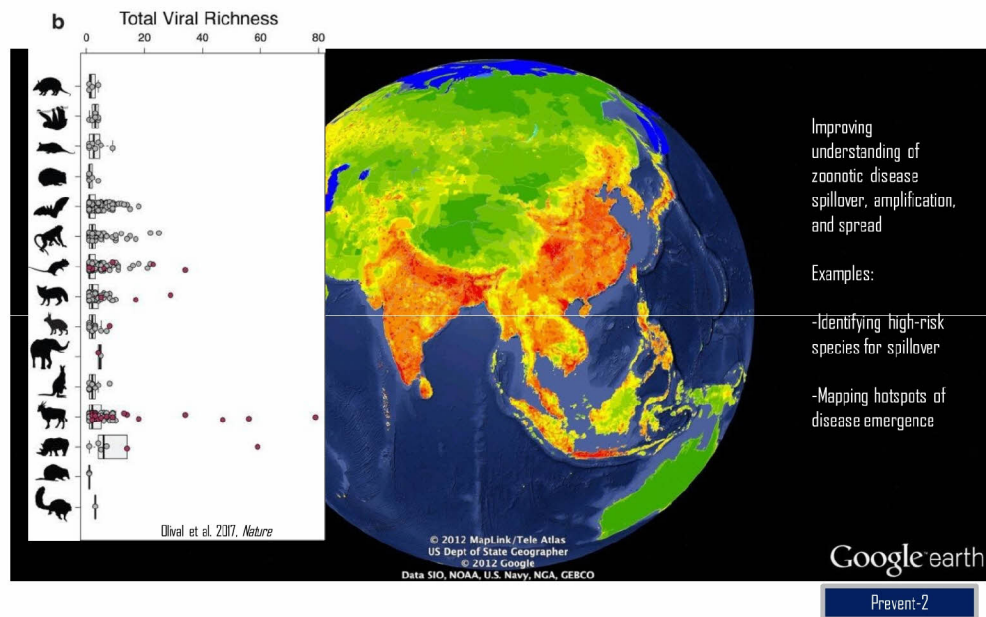
Prevent- 2, Detect- 1, 2, 3, 4, & 5, Respond- 1, 2, & 3



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## Modeling & Analytics



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Supporting the Global Health Security Agenda in Africa and Asia

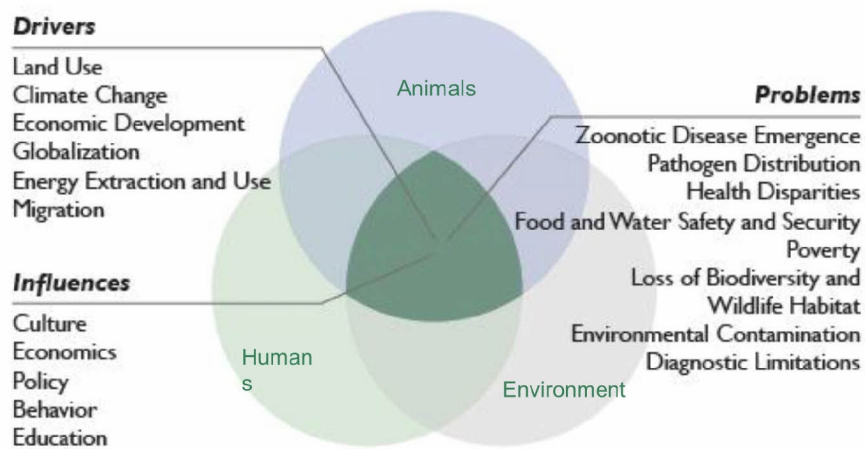
■ PREDICT-2 Countries



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# One Health Approach



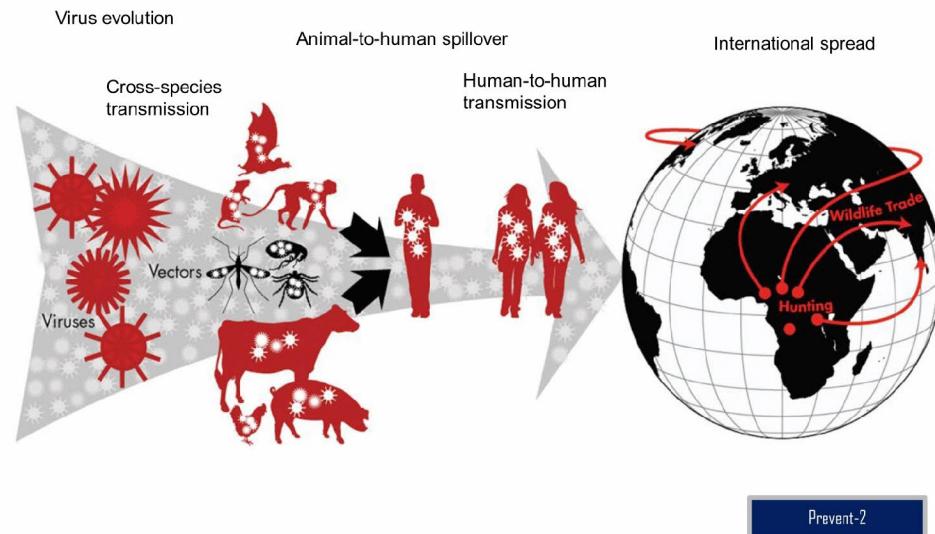
Prevent-2, Respond-2



**Emerging Pandemic Threats  
Program 2 (EPT-2)**

# Pathway for Disease Emergence

Identify key biological, behavioral and ecological processes influencing evolution, spillover, amplification, and spread of viral threats



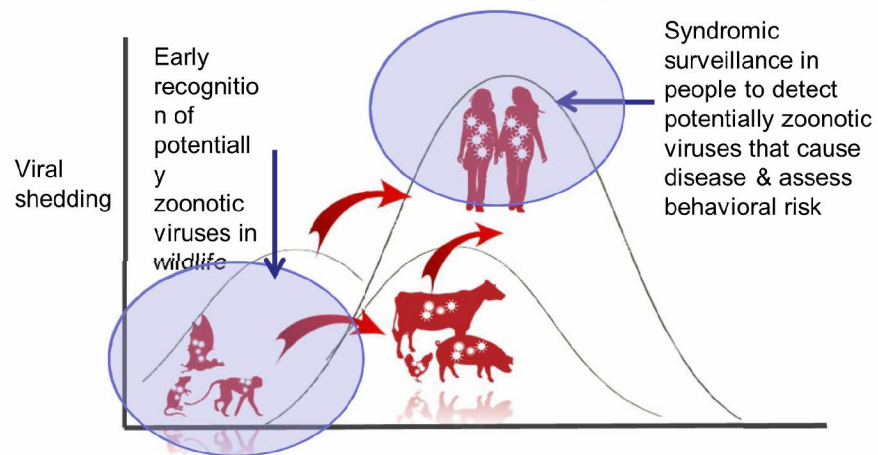
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## Surveillance Strategy

*Target = zoonotic viruses that causes disease  
in animals & people*



Prevent-2, Detect-2 & 3



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## Targeted, Risk-based Surveillance

- Primates
- Bats
- Rodents
- Birds
- Suids
- Carnivores
- Ungulates
- Humans



Prevent-2, Detect-2 83



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## Behavioral Risk – Focus on Policy

Identify behavioral and cultural practices promoting transmission of zoonotic viruses

Qualitative data on perceptions of risk and illness



Quantitative data using streamlined behavioral risk surveys



Analyses to characterize behavioral risk and target intervention strategies

Prevent-2



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## High Risk Interfaces



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## Training for Zoonotic Disease Surveillance



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## Laboratory Strengthening

**115,265**

Tests performed

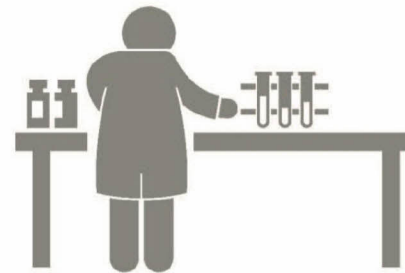


**26**

Labs able to perform  
PREDICT prioritized testing

**30**

Labs improving quality assurance  
and safety procedures



Detect-1



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## Community Engagement



Prevent-2



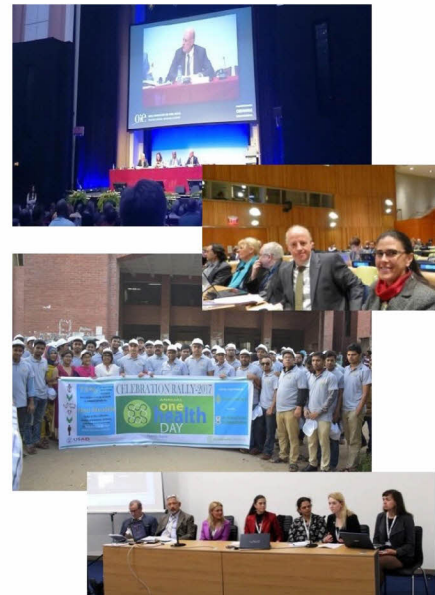
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## One Health Policies and Partners

### Objectives:

- Promote policies and practices that reduce the risk of viral evolution, spillover, amplification, and spread
- Improve cross-sectoral collaboration, capacity development, and coordination with partners



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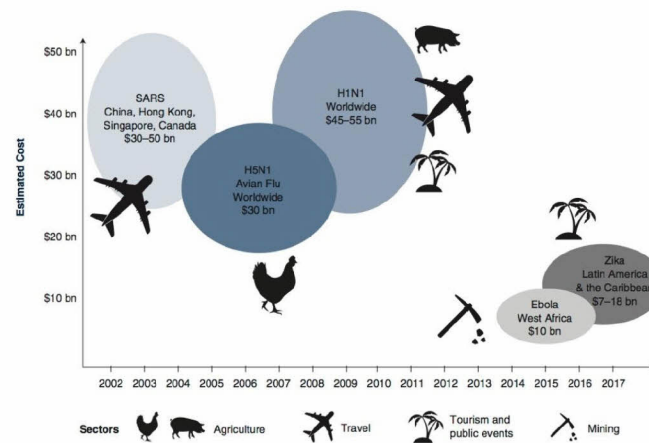
Evaluating One Health:  
Economics, Efficiency, and Effectiveness  
to Inform Value-Added Approaches



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Program 2 (EPT-2)**

## Economic Impact of EIDs



Figures are estimates and are presented as relative size. Based upon BioEra, World Bank, and UNDP data. Chart updated by EcoHealth Alliance.

Compiling an economic case for reducing health and wider economic consequences of emerging infectious diseases

Showing relevance to other sectors, including Ministries of Finance

*Aggregate cost estimates; icons show examples of highly-affected sectors*

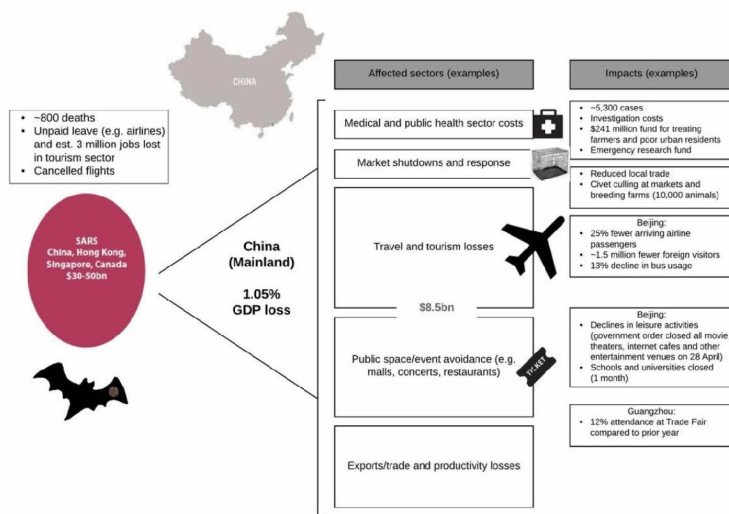
Prevent-2.1



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## Economic Impacts of SARS, 2002-2003 - China



Compiling examples of **country-level impacts** to identify affected sectors and inform national decisions and strategies - including resource allocation - to reduce risks and impacts

Prevent-2.1



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# One Health Economics Workshop

January 29- February 2, 2017, World Bank

- Major gaps/priorities identified:
  - From global good to national priorities: need for country-level data collection and buy-in
  - Understanding whole-of-society risks and benefits to inform multisectoral solutions
  - 3<sup>rd</sup> sector integration: More systematic accounting for environmental impacts
  
- Recommendations and methods incorporated into World Bank One Health Operational framework
  
- Further dissemination:
  - World Bank blog (authored by 3 global practices)
  - *Lancet Global Health* blog
  - Commentary in *Transactions of the Royal Society of Tropical Medicine and Hygiene*
  - Methods being used in country-level economic evaluation



Prevent-2.1 & 2.4



**Emerging Pandemic Threats Program 2 (EPT-2)**


Trans R Soc Trop Med Hyg 2017; 00: 1-3  
doi:10.1093/trstmh/trx039



### One Health Economics to confront disease threats

Catherine Machalaba<sup>a</sup>, Kristine M. Smith<sup>a</sup>, Lina Awada<sup>a</sup>, Kevin Berry<sup>a</sup>, Franck Berthe<sup>a</sup>, Timothy A. Bouley<sup>a</sup>,  
Meghan Bruce<sup>a</sup>, Jose Cortizas Abrahantes<sup>a</sup>, Anas El Turabi<sup>b</sup>, Yasha Feferholtz<sup>a</sup>, Louise Flynn<sup>a</sup>, Guillaume Fournié,  
Amanda Andre<sup>a</sup>, Delio Groce<sup>a</sup>, Dilgo Jonas<sup>a</sup>, Toibitha Kimani<sup>a</sup>, François Le Gall<sup>a</sup>, Juan Jose Miranda<sup>a</sup>, Maria Peyre<sup>a</sup>,  
Julio Pinto<sup>a</sup>, Noam Ross<sup>a</sup>, Simon R. Rüegg<sup>a</sup>, Robert H. Salerno<sup>a</sup>, Richard Seimour<sup>a</sup>, Carlos Zambrano-Torrealio<sup>a</sup>  
and William B. Karesh<sup>a,b,c</sup>

<sup>a</sup> EcoHealth Alliance, New York 10001, USA; <sup>b</sup> World Organisation for Animal Health, Paris 75017, France; <sup>c</sup> Institute of Social and  
Economic Research, University of Alaska, Anchorage 99508, USA; <sup>d</sup> World Bank, Washington, DC 20433, USA; <sup>e</sup> University of Liverpool



**32**

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<p>OUTPUTS FROM TRANSACTIONS OF THE ROYAL SOCIETY OF TROPICAL MEDICINE &amp; HYGIENE</p> <p><b>#20</b> of 2,478 outputs</p>	<p>OUTPUTS OF SIMILAR AGE</p> <p><b>#18,651</b> of 265,743 outputs</p>	<p>OUTPUTS OF SIMILAR AGE FROM TRANSACTIONS OF THE ROYAL SOCIETY OF TROPICAL MEDICINE &amp; HYGIENE</p> <p><b>#1</b> of 6 outputs</p>
---	--	---

Compared to these this one has done particularly well and is in the 96th percentile: it's in the **top 5%** of all research outputs across all sources so far.

## One Health Economics Fellowship

- Dr. Jinnat Ferdous, DVM, MS (based at IEDCR, Bangladesh, with PREDICT-2 team)
- Detailed economic surveys for cost identification of priority zoonotic diseases: Nipah, Influenza, Rabies and Anthrax
- Impact of disease itself (treatment, reduced tourism, lost tax revenue from reduced trade) and/or control measures (e.g. insecticide spraying)
- Data collection:
  - Public sector
  - Private sector
  - Household (cases versus baseline medical spending)
  - General population (willingness to pay for disease avoidance)
- Data collection reflects "Societal" reference case perspective - optimal for multisectoral decision making
- Government participation on study design and data collection
- Methods to also be used for targeted analyses in a subset of other countries



Institute of Epidemiology, Disease Control and Research  
রোগতত্ত্ব, রোগ নিয়ন্ত্রণ ও গবেষণা ইনস্টিটিউট



Prevent-2.1 & 2.4, Detect-5.2 & 5.3



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Program 2 (EPT-2)**

# One Health Evaluation



- One Health case studies – showing variety of operational applications, partners, and outcomes from PREDICT-2 countries
- Developing tools and information to assist governments, researchers, and donors in evaluating One Health approaches

### Quick Guide to One Health Evaluation

*One Health is an interdisciplinary collaborative effort to attain optimal health for people, animals and the environment we depend on.*

The One Health concept has received growing attention around the world as a way to help address challenges at the human-animal-environment interface—such as emerging and endemic zoonotic diseases (e.g. Ebola, Avian Influenza, Rabies), antimicrobial resistance, and food safety and security. With ecosystems and food production systems rapidly changing as a result of human resource demands, it is critical to understand the connections between humans, animals and the environment to find effective solutions that promote local and global health security and resilience.

To help move from broad interest to operational aspects of One Health on the ground, policy makers and donors have called for an evidence base for One Health, particularly in terms of its potential to assist public health systems in shifting from resource-intensive response to disease events to prevention, early warning, and enhanced detection of public health threats. As with evaluation for any program, evaluating One Health approaches can help refine implementation strategies for optimal outcomes and inform ways to adapt and upscale approaches in other settings, countries, and priority topics.

**What should I evaluate?**

Given the many topics that a One Health approach may assist with, a wide range of effectiveness and efficiency metrics (such as disease incidence, economic outcomes, years of life saved, number of people trained, etc.) could potentially be meaningful. Key factors to consider include:

- What is the scope of my particular topic and objective? Is it global, national or local?
- Who is my audience? What outcomes are relevant to them?
- What processes do I want to inform?
- What information is readily available?

This quick guide is intended to assist governments, research and service delivery projects, and donors to get started in thinking about opportunities to measure One Health's added value for decision-making. Models projecting outcomes under different scenarios can be useful and to date make up a large portion of One Health studies. However, results from implementation can help demonstrate feasibility and success in real-life and local contexts. The following pages provide insight on these and other criteria and introduce guidance for conducting evaluations. In general, the best approach is to choose an outcome that is relevant, understandable, and actionable for your audience.

**? What about other terms – Planetary Health, Eco-Health, or Veterinary Public Health?**  
*Like One Health, they all represent integrated approaches. Consider this a guide for all of them – regardless of the name, the goal is to improve outcomes for humans, animals and the environment.*

Prevent-2.1 & 2.4, Respond-2.1 & 2.3



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## Disaster Risk Reduction

- Collaboration with UN Office for Disaster Risk Reduction
  - Health disasters and their risk reduction strategies inherently cut across sectors
- Focus on shifting the paradigm from response to health emergencies to risk mitigation
- Global Platform for DRR
  - Organizing committee for health stream
  - Presentations and side event on pandemic prevention
  - Joint statement with CBD, UNISDR and ECDC
- 'PreventionWeb' Blog posts with UN and World Bank partners:  
<http://www.preventionweb.net/experts/oped/list>



Prevent-2.1 & 2.4, Respond-2.1 & 2.2



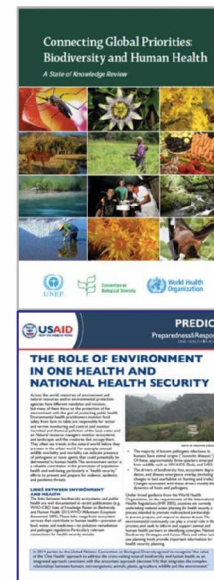
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## Health & Environment



- Lead contributions to the WHO-CBD State of Knowledge Review on Biodiversity and Human Health, and extensive knowledge dissemination with CBD
- Expert participation in the CBD-WHO Interagency Liaison Group on Health and Biodiversity
- Facilitated meeting between WHO One Health Office, WHO Public Health and Environment department, and CBD
- Showcasing opportunities for:
  - Environment sector integration in health security planning
  - Disease prevention via National Biodiversity Strategy and Action Plan
- Collaboration with PREDICT-2 partner from Ghana Forestry Commission – presentation on wildlife disease surveillance at WHO meeting



Prevent-1 & 2, Detect-2/3 & 4

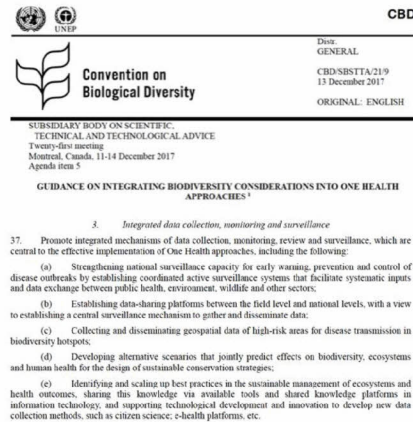


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## Health & Environment

- Informed development of CBD *Guidance on Integrating Biodiversity Considerations into One Health Approaches*
- Ongoing technical input to CBD on mainstreaming biodiversity across sectors and the contribution of biodiversity and ecosystems to health
- Preparation for CBD 14<sup>th</sup> Conference of the Parties (November 2018)- themes:
  - Energy and Mining
  - Infrastructure
  - Manufacture and processing
  - **Health:**
    - Invited to participate in inter-ministerial event with Ministers of Health and Environment and key technical partners
    - Asked to showcase examples of One Health in practice and opportunities for scale-up



Prevent-1 & 2, Detect- 2/3 & 4



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## Convention on International Trade in Endangered Species

- Documented months-long delays in international movement of emergency diagnostic specimens of conservation concern, hindering timely diagnosis (including of potential zoonoses) and control measures
  - Comprehensive laboratory capacity for wildlife disease is often unavailable in country
  - Practices inconsistent with WHO and OIE practices and hinder disease investigations
- Engaged CITES Parties and Secretariat to consider a standard mechanism to promote timely export and import of CITES-Listed emergency diagnostic specimens
- Coordination with other organizations to lend broader support (IUCN, OIE, C30 forums)
- Resolution adopted at last CITES Conference of the Parties (COP) to compile input on simplified procedures for international movement of emergency diagnostic specimens
- Participated in Working Group convened by Parties to synthesize information and develop guidance; recommendations will be sent to next COP for formal decision



Prevent- 2, Detect- 2/3 & 4



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## World Organisation for Animal Health (OIE)

- Oversight of OIE Wildlife Working Group (technical group tasked with providing expertise on wildlife health and disease)
  - Developed OIE Guidelines for Wildlife Disease Surveillance (practical guidance to help expand countries' capacity)
  - Provide input on specific sections of the OIE *Terrestrial Animal Health Code* and disease listing
- Scientific Committee for the OIE Biothreat Reduction conference (November 2017)
- Serve as a resource to OIE, e.g.:
  - Participation in Ad Hoc Group on Transport of Biological Specimens
  - Inform collaboration with CITES on reference laboratory model for diagnostic specimens

The logo for the World Organisation for Animal Health (OIE), featuring the letters 'OIE' in a stylized red and grey font with a globe icon above the 'I'.

Prevent-1 & 2, Detect-2/3, 4 & 5, Respond-2



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## Other Policy Activities and Partnerships

- U.S. Biodefense Study Panel – Links to NSC and HHS ASPR
- GHSA and JEE Alliance:
  - Input on GHSA 2024 Overarching Framework to promote multi-sectoral collaboration
  - Involvement in JEE Alliance integrate information on animal health and environmental dimensions of health security, risk reduction strategies, and One Health considerations for financing outbreak preparedness
- American Public Health Association
  - One Health policy statement adopted
  - Examples of One Health in practice from PREDICT-2



Prevent-1, 2, 3 & 4, Detect- 2/3, 4 & 5, Respond-2



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## Sharing Best Practices



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## Taking One Health Approaches to Address Zoonotic Diseases in Countries

*Practical guidance, vignettes and info. resources for countries:*

- **Planning and Emergency Preparedness**
  - Cameroon's One Health Strategy and Zoonoses Program- Monkeypox response
  
- **Joint Risk Reduction and Risk Communication**
  - Bangladesh's investigation of Nipah virus (with FAO and PGR)
  - Bolivia's sentinel surveillance and multi-sectoral collaboration- Yellow Fever response
  - Addressing risk drivers and forecasting risk
  
- **Financing and value-added from One Health:**
- **Financing and value-added from One Health:**
  - Budgeting for wildlife disease surveillance, evaluating options for prevention vs. control, and accounting for multi-sectoral impacts
  - Environmental dimensions of health security, risk reduction
  - Links to PREDICT-2 sampling guides and other e-Book resources, evaluation materials, One Health Operational Framework



Prevent- 1 & 2, Detect- 1, 2/3, 4 & 5



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## National Action Planning



- PREDICT-2 participation in country planning processes
- Global consultations on:
  - Environmental dimensions
  - Economic argument for prevention and multi-sectoral engagement
  - Risk reduction opportunities

Prevent- 1 & 2, Detect- 2/3, 4 & 5



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## World Bank Collaboration

### *Operational Framework for Strengthening Human, Animal and Environmental Public Health Systems at their Interface (“One Health Operational Framework”)*

1. Introduction: Strategic Context and Rationale
  2. Value of Investing in One Health
  3. Policy, Technical & Institutional Aspects, and Inventory of Tools
  4. One Health Entry Points
  5. Technical Guidance for Operationalizing One Health
  6. Other Operational Components (national and international arrangements, results frameworks, and project risks)
  7. Annexes with One Health lessons, program examples, expanded library of tools, and safeguards
- Extensive peer review and interest:
    - World Bank: Health, Environment and Agriculture Global Practices
    - United Nations and other IGOs: CBD, FAO, DIE, UNEP, UNISDR, WHO
    - U.S. partners: CDC, Harvard, Ohio State, USAID, World Resources Institute
  - Lessons learned, evidence, tools, and success stories from EPT-2

Prevent-1 & 2, Detect-2/3, 4 & 5, Respond-2



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Program 2 (EPT-2)**

## Disease Emergence Hotspots & World Bank Client Countries



Prevent-1 & 2, Detect-1, 2/3, 4 & 5, Respond-2

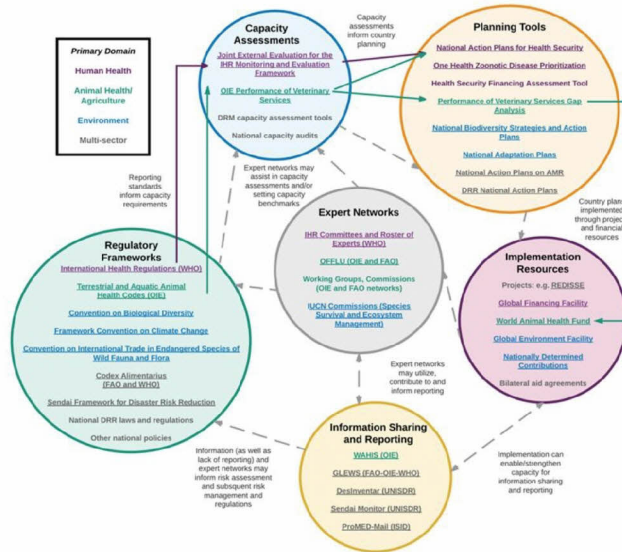


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# One Health Tools



One Health Operational Framework

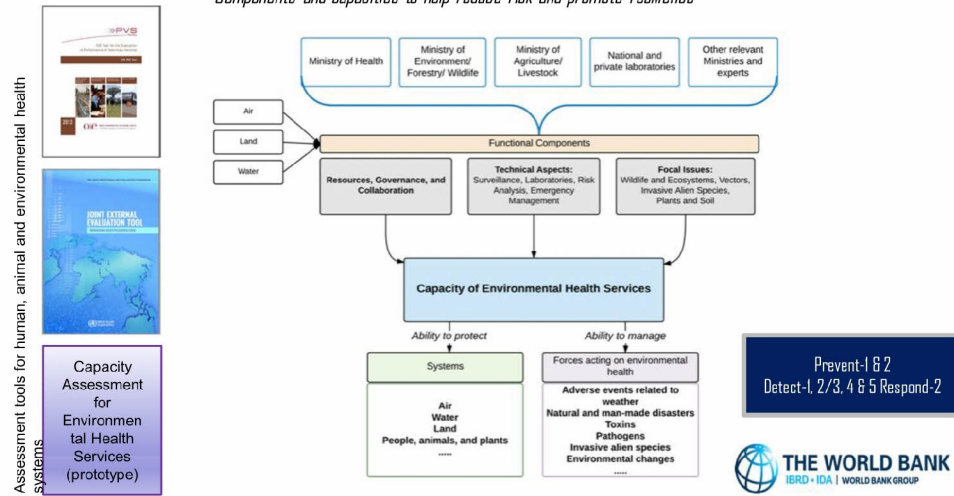


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Program 2 (EPT-2)**

# Environmental Health Services Capacity Assessment

*Components and capacities to help reduce risk and promote resilience*



- Component of the One Health Operational Framework
- Ground-truth and pilot process - Liberia
- Launch planned at UN CBD Conference of the Parties (November 2018)

Assessment tools for human, animal and environmental health systems



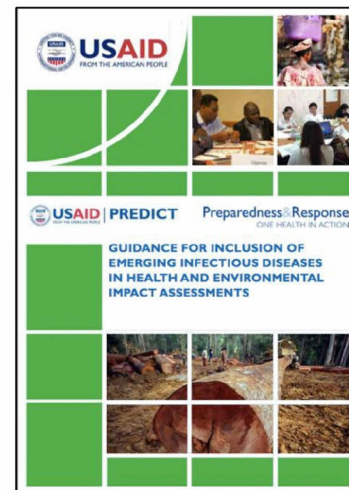

Capacity Assessment for Environmental Health Services (prototype)



**Emerging Pandemic Threats Program 2 (EPT-2)**

## Risk Reduction and Safeguards

- Provided technical input on the World Bank and IFC Safeguards to help assess emerging infectious disease risks of planned development projects during project preparation
- Developed guidance on integrating One Health into new World Bank Environment and Social Safeguards Framework
- Extractive industry-specific guidance



Prevent-2, Detect-2/3



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# One Health in Development Projects

PHASE 1 PROJECT IDENTIFICATION AND PREPARATION	PHASE 2 IMPLEMENTATION	PHASE 3 COMPLETION
<ul style="list-style-type: none"> <li>Problem scoping and determination of relevant sectors/ministries, stakeholders and partners</li> </ul>	<ul style="list-style-type: none"> <li>Deploy diagnostic tools to refine focus areas</li> </ul>	<ul style="list-style-type: none"> <li>Measure and report progress against core One Health indicators and project objectives through a transparent and public mechanism</li> </ul>
<ul style="list-style-type: none"> <li>Assess basic capacities of institutions, individuals, and technical and physical infrastructures (e.g., via JEE, PVS, Country Assessment of Environmental Health Services, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Engage with staff, expert networks, communities, and other relevant stakeholders about One Health approaches, such as data sharing, sentinel surveillance, and risk mitigation</li> </ul>	<ul style="list-style-type: none"> <li>Review areas of focus and update plans</li> </ul>
<ul style="list-style-type: none"> <li>Assess costs and benefits associated with One Health approach(es) to address problem</li> </ul>	<ul style="list-style-type: none"> <li>Develop systematic plans to establish timelines, actions, and monitoring mechanisms that reinforce prevention, detection, response, and/or recovery capacity</li> </ul>	<ul style="list-style-type: none"> <li>Measure added value from application of One Health (compared to lack of One Health approach)</li> </ul>
<ul style="list-style-type: none"> <li>Identify country-specific risk drivers that contribute to key local vulnerabilities</li> </ul>	<ul style="list-style-type: none"> <li>Communicate with institution(s), health professionals, local communities about the strategies and their role for risk mitigation; build sustainability</li> </ul>	<ul style="list-style-type: none"> <li>Measure integration or uptake of One Health strategies into planning processes and/or practice</li> </ul>
<ul style="list-style-type: none"> <li>Assess risk mitigation opportunities in relation to disease, as well as broader outcomes (e.g. food and nutrition security, livelihoods, environmental protection, education, trade, and travel)</li> </ul>	<ul style="list-style-type: none"> <li>Review existing and planned funding commitments (e.g. via GFF, GFF) for coordination and synergy</li> </ul>	<ul style="list-style-type: none"> <li>Identify lessons learned for their integration in follow-up operations</li> </ul>

- Identified specific points of entry for One Health considerations
- Helps identify relevant sectors and resources (existing and needed), maximize synergies and efficiency, and promote effectiveness
- Promotes evaluation to help optimize future projects

Prevent-2, Detect-2/3



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Next Steps



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Program 2 (EPT-2)

## Mapping our Policy Engagement

- Joint External Evaluation
  - e.g. Cameroon, Tanzania, Uganda
- National Biodiversity Strategy and Action Planning
  - e.g. Indonesia
- National Action Planning for Health Security
  - e.g. Tanzania
- Other policy and planning processes (and sectors), e.g. Disaster Risk Reduction, Veterinary Services, etc.

*Q2-3 (Yr4): Capturing our reach through participation and coordination with governments*

Prevent-1 & 2



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Program 2 (EPT-2)**

**From:** predict-request@ucdavis.edu on behalf of "William B. Karesh" <karesh@ecohealthalliance.org>  
**Sent:** 10/22/2018 10:31:52 AM (-07:00)  
**To:** "Corina Grigorescu Monagin" <cgmonagin@ucdavis.edu>  
**Cc:** "Amanda Fine" <REDACTED>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Sarah Olson" <REDACTED>; "predict Sympa List" <predict@ucdavis.edu>; "Chris Johnson" <ckjohnson@ucdavis.edu>  
**Subject:** Re: [predict] Fwd: Re: Informal LISN review

Good idea Corina.

Please let me review the compilation.

BK

**William B. Karesh, D.V.M**

*Executive Vice President for Health and Policy*

EcoHealth Alliance  
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+1.212.380.4463 (direct)

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[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.*

On Oct 22, 2018, at 1:26 PM, Corina Grigorescu Monagin <[cgmonagin@UCDAVIS.EDU](mailto:cgmonagin@UCDAVIS.EDU)> wrote:

Hi Amanda,

If you could please send the report to me, that would be great. I think we are going to compile everyone's responses from PREDICT into one submission.

Any questions, please let me know.

Regards,

Corina Monagin, MPH, DrPH  
Project Scientist, PREDICT Project of USAID  
One Health Institute  
School of Veterinary Medicine  
University of California Davis  
1089 Veterinary Medicine Drive  
Davis, CA 95616, USA

Mobile: [REDACTED]

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**From:** <[predict-request@ucdavis.edu](mailto:predict-request@ucdavis.edu)> on behalf of Amanda Fine <[REDACTED]>  
**Organization:** WCS  
**Date:** Thursday, October 18, 2018 at 11:56 PM  
**To:** Tracey Goldstein <[tgoldstein@ucdavis.edu](mailto:tgoldstein@ucdavis.edu)>, Chris Kreuder Johnson <[ckjohnson@UCDAVIS.EDU](mailto:ckjohnson@UCDAVIS.EDU)>  
**Cc:** William Karesh <[karesh@ecohealthalliance.org](mailto:karesh@ecohealthalliance.org)>, Catherine Machalaba <[Machalaba@ecohealthalliance.org](mailto:Machalaba@ecohealthalliance.org)>, Sarah Olson <[REDACTED]>, predict Sympa List <[predict@ucdavis.edu](mailto:predict@ucdavis.edu)>  
**Subject:** [predict] Fwd: Re: Informal LISN review

Hello Tracey and Chris,

Please see below my reply the latest update from the USAID VN Mission on the plan for conducting the informal LISN review. You may have received this directly from Andrew, but as you will see we are now all submitting a 2-3 page report by November 16th.

I think we can pull together the information Andrew has requested. We can provide the tables with the surveillance data and laboratories for PREDICT in Vietnam and highlight the sites where we have coordinated sampling with FAO and WHO as part of LISN.

Do you want me to get our draft to you or Corina before we submit to USAID? It looks like the USAID Mission is asking us to submit directly to Andrew.

Happy to receive any thoughts and guidance on this.

Cheers,

Amanda

----- Forwarded Message -----

**Subject:** Re: Informal LISN review  
**Date:** Fri, 19 Oct 2018 13:47:10 +0700

**From:** Amanda Fine <[REDACTED]>  
**Organization:** WCS

**To:** Michael OLeary <[moleary@usaid.gov](mailto:moleary@usaid.gov)>, Satoko Otsu <[REDACTED]>, Padungtod, Pawin (FAOVN) <[REDACTED]>  
**CC:** PHUC, Nguyen Thi <[REDACTED]>, Oanh Kim Thuy (HANOI/OH) <[okim@usaid.gov](mailto:okim@usaid.gov)>

Hello Michael,

Thank you for passing along this new plan and the instructions for completing the 2-3 page report requested. I do not see any problems with this request. We can make it clear in our report the influenza screening that is part of core PREDICT activities and the PREDICT influenza and respiratory pathogen screening that has been directly coordinated with FAO and WHO at the 2 LISN sites, and with FAO in Dong Nai Province.

I am open to meeting informally to discussing these reports among our LISN team in VN but will only be available through November 8th. I have travel planned outside Hanoi from Nov. 9th through the 16th, when these reports are due.

Thank you,

Amanda

On 10/18/18 6:46 PM, Michael OLeary wrote:

Dear all,

Thanks for your efforts to be available for a LISN discussion in third week of November.

As we guessed might be true, it proved not possible to find a time for teleconference that crossed so many time zones, so that proposal is now canceled.

Andrew has suggested instead the sharing of short written reports by FAO, PREDICT, and WHO. His proposal is below. As you can see, the main substance of these 2-3 page reports is items 7, 8, and 9, and the due date is November 16, 2018.

Please let us know if you see any problem with this request. Also, please share with Oanh and me any plans under consideration for LISN discussions here in Vietnam in the next few months - e.g. LISN review, meeting to share data, etc. An upcoming discussion in Vietnam might be an opportunity for further discussion of these written reports, although not involving people in so many time zones.

~~~~~

Andrew's proposal:

**Informal review of Influenza and other respiratory surveillance in Laos, Myanmar, and Vietnam**

Purpose: update USAID and all participating partners on progress to date and plans for October 2018-2019.

Process: FAO, PREDICT, and WHO will use the template provided (see below) to provide a written update on activities to date and those planned through September 2019. Each partner report should be no more than 2-3 pages and should cover the following activities:

- any USAID-funded influenza surveillance in human, livestock, or wildlife populations in Laos, Myanmar, or Vietnam that was coordinated and synchronized with at least one of the other implementing partners.
- any other related respiratory surveillance supported by USAID, for example the Vietnam project implemented by WHO.

Timeline: FAO, PREDICT, and WHO will submit their written report (one per partner) to USAID ([aclements@usaid.gov](mailto:aclements@usaid.gov)) by Friday, November 16, 2018. The written reports will then be shared with USAID (GH/ETD team, Missions in Laos [RDMA], Myanmar, and Vietnam) and the 3 implementing partners.

*Note: this is a change from the previously-proposed plan for a conference call to discuss progress and future activities. A phone call was determined to be not viable due to challenges associated with schedules and timezones.*

Template for the written report:

1. Name of implementing partner
2. Name and email of contact person at implementing partner
3. Name(s) of applicable projects under USAID's EPT program
4. Start dates of project(s) [month/year]
5. Country(ies) and province(s) where activities conducted [*see note below*]
6. Host country partners (government, others)
7. Progress to date (focus on significant events, accomplishments, findings); include links to any published work
8. Plans and expected results for October 2018 to September 2019.
9. Gaps and areas requiring follow-up.

*Note: if the implementing partner has been active in more than one country, it should include a separate section for each country under each of the categories 3-9 that are listed above.*

On Wed, Oct 10, 2018 at 3:18 PM Michael OLeary <[moleary@usaid.gov](mailto:moleary@usaid.gov)> wrote:

Dcar Amanda, Satoko, Pawin and other EPT2 colleagues,

Thanks for your earlier positive responses about a multi-country discussion on LISN, organized by Andrew Clements, USAID based in Geneva.

Andrew was also in communication with your various HQ and the consensus seems to be a delay to November, possibly the week of November 19. Complicated logistics have to be sorted out as this would involve people in time zones in Europe, USA, and SE Asia.

We will let you know once it is figured out. But just for advance information, are there any of you who could not participate sometime during the week of November 19?

Back to you later.

Mike and Oanh

On Mon, Oct 1, 2018 at 10:10 AM Amanda Fine <REDACTED> wrote:

Dear Mike,

Thank you for informing us of the plan for an informal review of LISN. I will probably be the main participant from PREDICT-2, and I am available on all of the dates suggested thus far by our WHO and FAO colleagues. I have just wrapped up a couple weeks of travel and plan to be in Hanoi for all of October. I also think it would be useful to have a pre-meeting at USAID or GOUNH as you have suggested. My preference would be for meeting a couple days before the session with USAID Washington so we have some time to work on suggestions made by colleagues, but I am flexible.

We have recently received the sequence data from the LISN wildlife samples and are in the process of getting it uploaded into our database for final interpretation. The sequence data from the first set of LISN livestock samples is already available. I will notify UC Davis of this upcoming informal review of LISN to see if anyone else from PREDICT-2 will want to participate. I will inform our PREDICT-2 lab and surveillance teams so we can get broader PREDICT-2 input on what to prepare and highlight for the meeting.

Thank you,

Amanda

On 9/29/18 8:39 AM, OTSU, Satoko wrote:

Dear Mike,  
Thank you for informing us.

From WHO, Phuc and me can join. If Hien and Orla are available on the day of TC, I hope she could join, too.

During your suggested period, Phuc and I are available on 15 afternoon or 16 Oct.  
We have a self assessment workshop from 17-18 and I will be on DT from 19-25.

It would be great to have an internal pre-discussion before the TC.  
Considering the time, would it be good to consider it on 15??

We also would be grateful to hear what preparation should be done for this TC-😊

We look forward to hearing from you for further notice.

Thank you and have a good weekend!  
- Satoko

**From:** Michael OLeary [<mailto:moleary@usaid.gov>]  
**Sent:** Friday, September 28, 2018 11:33 AM  
**To:** Amanda Fine; Padungtod, Pawin (FAOVN); OTSU, Satoko; DO, Thi Hong Hien; PHUC, Nguyen Thi  
**Cc:** Oanh Kim Thuy (HANOI/OH)  
**Subject:** Fwd: Informal LISN review

Dear WHO, FAO, and PREDICT-2 partners,

Our HQ colleagues have suggested an informal status review of LISN, by teleconference, so we can plan for the future (see the emails below, and a draft agenda).

We propose to convene the most appropriate people from each of your agencies for a conference call in October. The biggest focus would be on Vietnam, with updates from each of you, as this is where most of the activity and progress has taken place. This would also include expanded respiratory pathogen surveillance (WHO).

We don't have a specific date or time yet, but probably sometime between Oct 15 and Oct 26.

Could you please consider who from your staff could participate, and let us know? Also are there black-out dates for you in this time period?

We would be happy to host an internal pre-discussion in the few days before (or even immediately before) the multi-site teleconference, which we could do here at USAID or at GOUNH if you like.

Thank you for your consideration!

Mike

----- Forwarded message -----

**From:** Andrew Clements <[aclements@usaid.gov](mailto:aclements@usaid.gov)>  
**Date:** Thu, Sep 27, 2018 at 9:21 PM  
**Subject:** Re: Informal LISN review

I've drafted an agenda for the discussion. See attached.

Andrew Clements, Ph.D.  
Senior Scientific Advisor  
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health



U.S. Agency for International Development  
Mobile phone: 1-571-345-4253  
E-mail: [aclements@usaid.gov](mailto:aclements@usaid.gov)

On Thu, Sep 27, 2018 at 5:15 PM Andrew Clements  
<[aclements@usaid.gov](mailto:aclements@usaid.gov)> wrote:

Hi all,

We've been investing in the cross-sectoral LISN (longitudinal influenza surveillance network) for a few years now in Southeast Asia (Laos, Myanmar, and Vietnam) and I don't have a good sense of where things stand and if it is useful to continue or expand the work.

As a result, I would like to convene a phone call with USAID, WHO, FAO, and PREDICT to go over what has been done and what results have been achieved to date.

Do you think it would be possible to have this in mid October?

Thoughts welcome.

Andrew

*Andrew P. Clements, Ph.D.*  
*Senior Scientific Advisor*

--

MICHAEL J. O'LEARY, MD, MPH

Senior Infectious Diseases Advisor | Office of Health

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

**REDACTED**

[vietnam.usaid.gov](http://vietnam.usaid.gov) | [@USAIDVietnam](https://www.facebook.com/USAIDVietnam) | [Flickr](https://www.flickr.com/photos/usaidd/vietnam/) | [YouTube](https://www.youtube.com/channel/UC5G8G8G8G8G8G8G8G8G8G8G)

--

Amanda E. Fine, VMD, PhD  
Wildlife Health Program Associate Director - Asia  
Wildlife Conservation Society (WCS)

**REDACTED**

--

MICHAEL J. O'LEARY, MD, MPH

UCDUSR0015043



**From:** Peter Daszak <daszak@ecohealthalliance.org>  
**To:** Evan Eskew <eskew@ecohealthalliance.org>; Diego Montecino <dmontecino@ucdavis.edu>; Nistara Randhawa <nrandhawa@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>  
**CC:** Kevin Olival <olival@ecohealthalliance.org>  
**Sent:** 11/30/2018 8:39:11 AM  
**Subject:** RE: Draft of reframed bat seasonality project

Good to see this Evan. It would be great to move towards submitting a paper in the next few months. Do we all think this is achievable, and how does this fit in with your plans, Diego and Nistara?

Cheers,

Peter

**Peter Daszak**

*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street – 17<sup>th</sup> Floor  
New York, NY 10001

Tel. +1 212-380-4474  
Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)  
Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.*

**From:** Evan Eskew [mailto:eskew@ecohealthalliance.org]  
**Sent:** Tuesday, November 20, 2018 3:36 PM  
**To:** Diego Montecino; Nistara Randhawa; Jonna Mazet  
**Cc:** Kevin Olival; Peter Daszak  
**Subject:** Draft of reframed bat seasonality project

Hello all,

I wanted to update everyone on the current state of the project formerly known as bat seasonality. As some of you know, we have changed direction to examine reproductive status in more detail. Despite alterations to the manuscript, I tried to incorporate existing feedback from Nistara, Diego, and others on the previous iteration of the project in the revised version attached here.

Major changes/improvements to the manuscript since you all saw it last include:

- an analytical overhaul and reframing of the introduction to focus on the effect of reproductive status on viral detection across mammalian orders (instead of a focus on seasonal effects on viral detection in bat hosts)
- full model specification in the supplementary text to improve interpretability (Diego's suggestion)
- fitting and interpretation of full models rather than model sets

I need to flesh out parts of the existing text with references that are broadly relevant to mammalian taxa besides bats. And the discussion is in a rough outline form. But before I go too much further, I wanted

high-level feedback from everyone on what they think of the revised focus and approach.

Not sure if Diego and Nistara will be at the PREDICT semi-annual meeting next week, but I wanted to send this out before then and would be happy to chat about it with any UCD folks in attendance. Or of course we can exchange feedback via email as in the past.

Happy Thanksgiving, and Davis folks stay out of the smoke!

All my best,  
Evan

--

**Evan Eskew, PhD**  
*Research Scientist, Modeling and Analytics*

EcoHealth Alliance  
460 West 34th Street, Suite 1701  
New York, NY 10001

646.868.4708 (office)  
[www.ecohealthalliance.org](http://www.ecohealthalliance.org)

***EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.***

**From:** "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Sent:** 03/24/2020 11:18:08 AM (-07:00)  
**To:** "Vertefeuille, Jan" <Jan.Vertefeuille@wwfus.org>  
**Cc:** "Keith Martin" <kmartin@cugh.org>; "Marc Valitutto" <valituttom@si.edu>; "Steven A. Osofsky" <s.osofsky@cornell.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; "Suzan Murray" <MurrayS@si.edu>; "Christian Walzer" [REDACTED]  
[REDACTED] "machalaba@ecohealthalliance.org"  
<machalaba@ecohealthalliance.org>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@wwfus.org>  
**Subject:** Re: FOR REVIEW: Joint call to action on COVID-19  
**Attachments:** Open Letter to Global PolicymakersDraftv1 JM.docx

Here you go, some edits from me for accuracy that can later help with ongoing credibility.  
Thanks for letting me weigh in & sorry not to be able to do that yesterday.  
Stay well & let's all please help promote calm,  
Jonna

Jonna AK Mazet, DVM, MPVM, PhD  
Professor of Epidemiology & Disease Ecology  
Executive Director, One Health Institute  
Director, One Health Workforce – Next Generation of USAID Emerging Threats Division  
Director Emeritus, PREDICT Project of USAID Emerging Threats Division

School of Veterinary Medicine  
University of California, Davis  
[onehealthinstitute.net](http://onehealthinstitute.net)

Institute for Global Health Sciences  
University of California, San Francisco  
<https://globalhealthsciences.ucsf.edu/>

For scheduling and logistical issues, please contact:  
Ms. Mary Radford  
[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)  
+1-530-752-3630

On Mon, Mar 23, 2020 at 8:05 AM Vertefeuille, Jan <[Jan.Vertefeuille@wwfus.org](mailto:Jan.Vertefeuille@wwfus.org)> wrote:

All,

Thank you to those who offered their quick feedback over the weekend. To keep this moving, I've attached the next iteration of the letter. Please kindly review the attached and send back comments by COB Tuesday.

Best,

Jan

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**Sent:** Saturday, March 21, 2020 3:34 PM  
**To:** Vertefeuille, Jan <[Jan.Vertefeuille@WWFUS.ORG](mailto:Jan.Vertefeuille@WWFUS.ORG)>  
**Cc:** Marc Valitutto <[valituttom@si.edu](mailto:valituttom@si.edu)>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Suzan Murray <[MurrayS@si.edu](mailto:MurrayS@si.edu)>; Christian Walzer [REDACTED]; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; [REDACTED] <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Peter Daszak

<[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>  
**Subject:** Re: FOR REVIEW: Joint call to action on COVID-19

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We have an important opportunity to strengthen this global structure to prevent, detect and respond to potential pandemics.

<https://ghsagenda.org/>

Best

Keith

Keith Martin MD, PC  
Executive Director  
Consortium of Universities for Global Health  
Washington, DC  
[www.cugh.org](http://www.cugh.org)  
[@CUGHnews](#) [@CUGH\\_TAC](#)  
202-974-6363

Attend CUGH's 2021 Annual Conference, Houston, Texas

March 12-14, 2021, Satellite Sessions, March 11

On Sat, Mar 21, 2020 at 1:32 PM Vertefeuille, Jan <[Jan.Vertefeuille@wwfus.org](mailto:Jan.Vertefeuille@wwfus.org)> wrote:

Dear all,

I know how incredibly busy you all are and thank you to those who could join the call on Thursday.

We discussed coordinating a **scientist sign-on letter** that would be shared with specific decisionmakers in Asian countries, as well as serve as an open letter to donor agencies and nations about what needs to be done to help prevent the next zoonotic disease outbreak. This would be unbranded, so it is a collective call from the scientific community and civil society.

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We are also exploring creating a microsite that this letter could live on in multiple languages, allow additional experts to sign on after it's launched and link to the research and background you all have developed that provides greater direction for leaders. Would love to hear other ideas as well.

Can I ask for your quick read on this – no need to wordsmith at this point – and feedback by **COB Monday**? I will then take onboard your feedback and circulate a next draft.

Thank you!

Jan

-----Original Appointment-----

**From:** Vertefeuille, Jan

**Sent:** Monday, March 16, 2020 12:49 PM

**To:** Marc Valitutto; Steven A. Osofsky; Christine Kreuder Johnson; Maggie Kinnaird; Suzan Murray; Christian Walzer; Jonna Mazet; [REDACTED]; [machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org); Peter Daszak; Keith Martin

**Subject:** Conservation & public health coordination COVID-19

**When:** Thursday, March 19, 2020 8:00 AM-9:00 AM (UTC-05:00) Eastern Time (US & Canada).

**Where:** [REDACTED]

### **Draft Agenda**

- COVID-19 efforts underway of relevance to the group (all)
- Opportunities for collective call to policymakers (discussion)
- Next steps, other ways to coordinate (discussion)



Hi there,

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## **An Open Letter to Global Policymakers**

The world is in crisis. The novel coronavirus disease known as COVID-19 will cost the lives of untold numbers of people and threatens to devastate the global economy.

Sadly, this pandemic was credibly predicted and in fact has been forecasted for years by health and disease experts. We didn't know where or when it would arrive, but we knew it would occur and that we could have and should have been prepared to prevent or halt it before it became extremely damaging. Prior zoonotic outbreaks – diseases that jump from animals to humans -- like SARS, MERS, H1N1 and Ebola, have clearly shown us how devastating they can be.

The most effective way to reduce the risk of the emergence of new zoonotic diseases is to minimize contact between people and wild animals. But as human populations increase and wild places shrink, we are interacting with wildlife in increasingly unhealthy and unsustainable ways. Occasionally, as with COVID-19, that interaction is deadly for humans.

Illegal wildlife trafficking, especially for human consumption, substantially increases this risk. Illegal and unregulated “wet markets,” where live animals of different species are warehoused together in unsanitary conditions to be sold for human consumption, are mixing vessels for dangerous virus emergence and are a top risk interface for their spillover to human populations.

We know what needs to be done to prevent future zoonotic epidemics. We call on policymakers everywhere to immediately and urgently undertake these steps to reduce the chances of another coronavirus pandemic:

- **Shut down wet markets**
- **Escalate efforts to combat wildlife trafficking with urgency**
- **Strengthen demand reduction strategies to shift consumers away from illegal wildlife products**
- **Strengthen the Global Health Security Agenda to prevent, detect and respond to potential lethal disease outbreaks, including those which have yet to be identified (i.e., Disease X)**
- **Halt biodiversity loss**

High-risk human-wildlife interactions and interfaces that facilitated the emergence of COVID-19 continue to exist in emerging disease hotspots globally.

In our hyper-connected modern world, the emergence of a new virus anywhere can impact people everywhere. We are now at the moment to join forces across nations, sectors, scientific disciplines and civil society to ensure that never again does illegal, unregulated and unsustainable wildlife trade lead to a global pandemic.

**From:** "Peter Daszak" <daszak@ecohealthalliance.org>  
**Sent:** 03/24/2020 9:07:53 PM (-07:00)  
**To:** "Jonna Mazet" <jkmazet@ucdavis.edu>; "Vertefeuille, Jan" <Jan.Vertefeuille@wwfus.org>  
**Cc:** "Keith Martin" <kmartin@cugh.org>; "Marc Valitutto" <valituttom@si.edu>; "Steven A. Osofsky" <s.osofsky@cornell.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; "Suzan Murray" <MurrayS@si.edu>; "Christian Walzer" <[REDACTED]>; "[REDACTED]"; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@wwfus.org>  
**Subject:** RE: FOR REVIEW: Joint call to action on COVID-19

Christian,

Apologies I was unable to join the call last week. I'll look at this version and add comments/edits and return to you by later tomorrow. Thanks for including us in this effort.

Cheers,

Peter

**Peter Daszak**  
*President*

EcoHealth Alliance  
460 West 34<sup>th</sup> Street  
New York, NY 10001  
USA

Tel.: +1-212-380-4474  
Website: [www.ecohealthalliance.org](http://www.ecohealthalliance.org)  
Twitter: [@PeterDaszak](https://twitter.com/PeterDaszak)

*EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation*

**From:** Jonna Mazet <jkmazet@ucdavis.edu>  
**Sent:** Tuesday, March 24, 2020 2:18 PM  
**To:** Vertefeuille, Jan <Jan.Vertefeuille@wwfus.org>  
**Cc:** Keith Martin <kmartin@cugh.org>; Marc Valitutto <valituttom@si.edu>; Steven A. Osofsky <s.osofsky@cornell.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird <mkinnaird@wwf.panda.org>; Suzan Murray <MurrayS@si.edu>; Christian Walzer <[REDACTED]>; Catherine Machalaba <machalaba@ecohealthalliance.org>; Peter Daszak <daszak@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@wwfus.org>  
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**From:** "William B. Karesh" <karesh@ecohealthalliance.org>  
**Sent:** 04/26/2020 6:41:58 PM (-07:00)  
**To:** "Vertefeuille, Jan" <Jan.Vertefeuille@WWFUS.ORG>; "Martin Gilbert" <m.gilbert@cornell.edu>; "Keith Martin" <kmartin@cugh.org>; "Chris Johnson" <ckjohnson@ucdavis.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Steve Osofsky" <s.osofsky@cornell.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@WWFUS.ORG>; "O Criodain, Colman" <cocriodain@wwfint.org>; "Aileo Weinmann" <WeinmannA@nwf.org>; "SacconeM@nwf.org" <SacconeM@nwf.org>; "Nicolas, Alexander" <Alexander.Nicolas@wwf.org>; "Peter Daszak" <daszak@ecohealthalliance.org>  
**Subject:** Re: Sign-on letter website and launch plans

Thanks Jan,

It really great to see that after 3 decades WWF is beginning to get interested in these issues.

BK

---

**From:** Vertefeuille, Jan <[Jan.Vertefeuille@WWFUS.ORG](mailto:Jan.Vertefeuille@WWFUS.ORG)>  
**Sent:** Sunday, April 26, 2020 2:10 PM  
**To:** Martin Gilbert <[m.gilbert@cornell.edu](mailto:m.gilbert@cornell.edu)>; Keith Martin <[kmartin@cugh.org](mailto:kmartin@cugh.org)>; Christine Kreuder Johnson <[ckjohnson@ucdavis.edu](mailto:ckjohnson@ucdavis.edu)>; Peter Daszak <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>; Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; Steven A. Osofsky <[s.osofsky@cornell.edu](mailto:s.osofsky@cornell.edu)>; Maggie Kinnaird <[mkinnaird@wwf.panda.org](mailto:mkinnaird@wwf.panda.org)>; Catherine Machalaba <[machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)>; Hemley, Ginette <[ginette.HEMLEY@WWFUS.ORG](mailto:ginette.HEMLEY@WWFUS.ORG)>; O Criodain, Colman <[cocriodain@wwfint.org](mailto:cocriodain@wwfint.org)>; Aileo Weinmann <[WeinmannA@nwf.org](mailto:WeinmannA@nwf.org)>; [SacconeM@nwf.org](mailto:SacconeM@nwf.org)  
**Cc:** Nicolas, Alexander <[Alexander.Nicolas@wwf.org](mailto:Alexander.Nicolas@wwf.org)>  
**Subject:** Sign-on letter website and launch plans

All,

I'm delighted to share that our letter now lives on its own website -- [www.PreventPandemics.org](http://www.PreventPandemics.org) -- in 6 languages, with a signup form for additional experts to add their names to the letter. We have more than 100 signers from 24 countries, including One Health leaders from Vietnam, Thailand, Bangladesh, Hong Kong, Malaysia, Indonesia, Zambia, Tanzania, Uganda and more. A big thank you to everyone who has shared this with colleagues to secure these signatures!

We are using the next few days to double check translations and functionality and will publicly announce the website during the CUGH webinar that Keith is organizing on Thursday morning Asia time. We are also working on a press release and plans for delivering this to decisionmakers, so please let us know if you are interested and available to do press interviews.

**We encourage you to continue sharing the letter to potential signers and welcome additional experts to add their names via [PreventPandemics.org](http://PreventPandemics.org) even before we formally launch it on Thursday, but please do not post the letter or website publicly to social media or other public channels until Thursday. And please ask anyone you're sharing the link with to do the same.**

I'm copying here Alexander Nicolas, who oversaw the site development – launching a site in 6 languages in two weeks' time is no small feat! And we have set up an email address, [PreventPandemics@wwfus.org](mailto:PreventPandemics@wwfus.org), for questions or issues with the site.

Thanks,  
Jan