

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

RE: Virtual Dialogue Meeting

April 17, 2020

Dr. Gao Fu
Director-General,
Chinese Center for Disease Control and Prevention

Dr. Bai Chunli
President, Academician
Chinese Academy of Sciences

Please accept our sympathies for the hardship and loss of life in China. We in the United States are now deep into our own suffering under the COVID-19 pandemic. As China begins to recover and reopen after unprecedented efforts to control its cases, China now knows more about dealing with COVID-19 than any other country and Chinese scientists have much to share as the rest of the world continues to battle the virus. We are writing to ask you, as leaders of the Chinese Center for Disease Control and Prevention (CCDC) and the Chinese Academy of Sciences (CAS) to approve and designate Chinese scientists to participate in a virtual dialogue meeting to discuss mitigating the impact of COVID-19 and preventing future pandemics.

As you know, over the past five years, we along with Dr. James Le Duc, Dr. David Franz, Dr. Pei-Yong Shi, and several other representatives of the National Academies of Sciences, Engineering, and Medicine (NASEM) have worked with both of you and other Chinese scientists to organize a series of dialogue meetings on disease research, combating emerging infections, collaboration and data sharing, and laboratory management. The dialogue meetings have been well attended by leading scientists from NASEM, CAS, CCDC, the Chinese Academy of Agricultural Sciences, and the Chinese Academy of Medical Sciences. The meetings have enabled scientists from China and the United States to exchange research findings, share best practices in biosafety, biosecurity and biocontainment laboratory operations, reflect on lessons learned, and to establish new collaborative partnerships in areas identified during the meetings. Our dialogue has focused on preparing for and mitigating the very situation we now face.

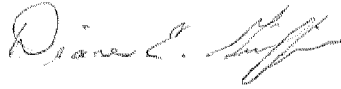
Chinese scientist now have unique knowledge about responding to and mitigating COVID-19, so they are in a position to help American scientists better understand and combat the outbreak in the United States. We hope that a meeting between our scientists can address: (1) The biology of COVID-19; (2) Managing COVID-19 in patients; (3) Limiting the spread of COVID-19; (4) Drug and vaccine development; and (5) Preventing and managing future epidemics and pandemics. A list of more detailed questions related to these five topics is appended to the end of this letter.

NASEM is willing to facilitate and host a virtual dialogue discussion using Zoom video conference software or another mutually acceptable medium. We hope that Chinese participants can include scientists and laboratory directors who are leading the response as well as those who have participated in previous dialogue sessions. American meeting participants would include Academy members and other top-flight American researchers, but not government officials or members of the press. Information and insights from the meeting that may promote improved response to the pandemic would be shared with those who need the information, as that is the purpose of the meeting, but remarks and discussion comments would not be attributed without permission of the speaker. After your approval we would like to hold the virtual meeting as early as possible. The first week of May would be ideal and if the participants feel it would be useful; a follow-on meeting could be held later in the month.

Thank you for your efforts and leadership during this remarkably difficult period. We hope that you will embrace this opportunity to assist the United States and the rest of the world combat and recover from this terrible pandemic.

Sincerely,

Diane E. Griffin
Vice President, NAS



Margaret Hamburg
Foreign secretary, NAM



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Additional points of contact:

James Le Duc Ph.D.
Director, Galveston National Laboratory
jwleduc@utmb.edu, 1.409.266.6500

Benjamin J. Rusek, Senior Program Officer
U.S. National Academy of Sciences
brusek@nas.edu 1.202.334.3975

Appendix: Proposed topics for virtual dialogue meeting:

1. Understanding the biology of COVID-19

- What is the rate of evolutionary change in the virus and how quickly does it accumulate mutations? Have mutations impacted the efficacy of treatment, transmissibility or the clinical course of disease?
- Have there been accurate measurements of incubation period? What factors are responsible for any variability in incubation period?
- What magnitude of viral load is required to initiate infection? Has it been determined at what point in the course of infections the patient is most infectious? What is the degree of virus shedding among pre-symptomatic/asymptomatic individuals?
- Do “recovered” patients continue to shed infectious virus? If yes, for how long?
- After recovery, do patients have immunity? How strong is this immunity and is it likely to be permanent or might it eventually disappear?

2. Managing COVID-19 in patients

- How is China measuring immune response; binding assays versus neutralization tests; use of antibody assays in diagnosis of acute disease and as an indicator of protection?
- What has been the Chinese experience with drug treatments for sick patients?
- Were effective non-pharmaceutical interventions (NPIs) for patient care identified?
- Were there other best practices for management of COVID-19 patients that emerged from the pandemic experience?
- How was the efficacy of either drugs or NPIs and best practices influenced by patient age, gender, general health condition, or other characteristics?
- Were there any lessons learned from the pandemic that should be applied to future staffing and equipping of hospitals or other patient care facilities?

3. Limiting the spread of COVID-19

- What NPIs proved most effective in halting viral spread in China?
- Were other best practices for containment used and proven to be effective?
- Was available technology for testing for viral infection and antibody response adequate? If not, what other or new technologies would be helpful or even essential in the future?
- Has the Chinese research community arrived at an explanation regarding pathogenesis leading to apparent recrudescence of disease in previously positive, then negative patients?
- Has the Chinese research community made progress in understanding the routes of exposure to COVID-19 in air, water, and from surfaces (both indoors and outdoors)?
- Would practices such as increased surveillance for coronaviruses in pets, wild or livestock animal species or interventions to reduce contact between humans and pets, wild or livestock animal

species have a role in limiting the spread of COVID-19 or in preparing for future pandemics?

4. Drug and vaccine development

- Has the Chinese research community made progress in the development of effective drugs to treat COVID-19? If yes, would China be willing to share this new knowledge as part of a U.S.-China scientific partnership?
- Has the Chinese research community made progress in the development of COVID-19 vaccines? If yes, would China be willing to share this new knowledge as part of a U.S.-China scientific partnership?
- What is China's experience in using immune plasma or other antibody-based therapies in the treatment of COVID patients or prevention of onward spread of disease?

5. Preventing and managing future epidemics and pandemics

- What steps should be taken in anticipation of a fall resurgence in transmission?
- What lessons has China learned about returning society and the economy to a "normal" state?
- What observations and determinations from the COVID-19 pandemic are most important for preventing, detecting, and managing future epidemics/pandemics? Based on the answers to 1-4, how can the lessons learned in dealing with COVID-19 so far be used to avert another pandemic?
- What are the most fruitful areas of future scientific collaborations between our countries in this area?

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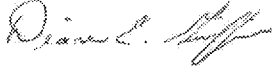
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- Was available technology for testing for viral infection adequate? If not, what other or new technologies would be helpful or even essential in the future?
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- Would practices such as increased surveillance for coronaviruses in pets, wild or livestock animal species or interventions to reduce contact between humans and pets, wild or livestock animal species have a role in limiting the spread of COVID-19 or in preparing for future pandemics?

Comment [LJW1]: Cats have been shown to become infected and able to transmit the virus in work done in Harbin lab and also by Dr Shi I think.

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Also consider lessons learned in returning society and the economy to "normal."
Recommended steps to be taken in anticipation of a fall peak of transmission.

- Measurement of immune response; binding assays versus neutralization tests; use of antibody assays in diagnosis of acute disease and as an indicator of protection.

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From: LeDuc, James W.
Sent: Thursday, May 7, 2020 3:28 PM
To: Jessica Tucker (jessica.tucker@nih.gov)
Subject: FW: News query from Nature

Hi Jessica,

I just tried to call but missed you. Please see inquiry below and questions to be asked. Let's chat before I respond to her. I don't want to get in trouble.

From: Nidhi Subbaraman <nidhi.subbaraman@us.nature.com>
Sent: Thursday, May 07, 2020 1:58 PM
To: LeDuc, James W. <jwleduc@UTMB.EDU>
Subject: News query from Nature

WARNING: This email originated from outside of UTMB's email system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dr Le Duc, I am reporting on the coronavirus for the news team at Nature, based in Washington DC.

I am looking into a story about gain of function and dual use research, and writing to ask if you'd be free for a brief call about this. We're wondering if the pandemic will re-ignite the debate about this research area – what should be allowed, what should be published, how the work should be communicated to the public. I'm also curious how you see the rumors about Shi Zhengli's lab in Wuhan influencing this.

I'm reaching out to researchers who work in this area, or have participated in policy discussions in the past to ask how they see the pandemic tinging that discussion. (I covered the NSABB meeting in Jan where a version of this discussion came up <https://www.nature.com/articles/d41586-020-00210-5>)

Would value your thoughts on this. Please let me know if you're available for a phone call Friday or Monday.

Thank you, Nidhi

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