

**Cc:** Micah Lowenthal[mlowenth@nas.edu]; Raymond Jeanloz[jeanloz@berkeley.edu]; Benjamin Rusek[BRusek@nas.edu]  
**To:** LeDuc, James W.[jwleduc@UTMB.EDU]  
**From:** Dave Franz[davidrf Franz@gmail.com]  
**Sent:** Thur 4/16/2020 9:43:56 AM (UTC-05:00)  
**Subject:** Re: Summarizing China bio interactions to address USG questions

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On Apr 16, 2020, at 10:33 AM, LeDuc, James W. <jwleduc@UTMB.EDU> wrote:

See comments below in red. I think we need to remember that a lot of the work, especially on coronaviruses, has been done (presumably) at BSL3. Our discussions have not been limited to BSL4 studies or pathogens, so using a more generic "biocontainment laboratories" may be appropriate.

What's the plan for distribution of this information? Getting something posted quickly on the NASEM website would be very helpful.

Thanks, Jim

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**From:** Dave Franz <davidrf Franz@gmail.com>  
**Sent:** Thursday, April 16, 2020 9:04 AM  
**To:** Micah Lowenthal <mlowenth@nas.edu>  
**Cc:** LeDuc, James W. <jwleduc@UTMB.EDU>; Raymond Jeanloz <jeanloz@berkeley.edu>; Benjamin Rusek <BRusek@nas.edu>  
**Subject:** Re: Summarizing China bio interactions to address USG questions

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We don't need to 'focus' on geography; just important for people to know the BSL-4 lab isn't downtown near the university. Maybe "45 min drive" is enough. I was thinking this distinctive building might be discoverable on overheads, but I don't see it.

On Apr 16, 2020, at 9:36 AM, Lowenthal, Micah <mlowenth@nas.edu> wrote:

Hard to find these things on google maps, but here are my best guesses.

The wet market has been reported to be the Huanan seafood market, which may be here <https://www.google.com/maps/place/Huanan+Seafood+Market/@30.6165888,114.2611992,364m/data=!3m1!1e3!4m2!1m6!3m5!1s0x342eae553b58fd7:0x355ff7d1fe8e8fb7!2sHuanan+Seafood+Market!8m2!3d30.6165888!4d114.2622935!3m4!1s0x342eae553b58fd7:0x355ff7d1fe8e8fb7!8m2!3d30.6165888!4d114.2622935>

The WIoV website reports that the Wuhan National Biosafety Laboratory is located in Zhengdian Scientific Park of Wuhan Institute of Virology, CAS in Jiangxia District, Wuhan, Hubei Province. Maybe around

here <https://www.google.com/maps/place/Zhengdian+Subdistrict,+Jiangxia+District,+Wuhan,+Hubei,+China/@30.3533157,114.2232614,13178m/data=!3m1!1e3!4m2!1m16!4m15!1m6!1m2!1s0x342eae553b58fd7:0x355ff7d1fe8e8fb7!2sHuanan+Seafood+Market,+Fazhan+Avenue,+Jianghan+District,+Wuhan,+Hubei,+China!2m2!1d114.2622935!2d30.6165888!1m6!1m2!1s0x342ec9968f3e523d:0x18b5a54d58c0eefc!2sZhengdian+Subdistrict,+Jiangxia+District,+Wuhan,+Hubei,+China!2m2!1d114.259398!2d30.329875!3e1!3m4!1s0x342ec9968f3e523d:0x18b5a54d58c0eefc!8m2!3d30.329875!4d114.259398>

These locations are 32km apart as the crow flies, and that includes crossing the Yangtze River. This is not my area of expertise, but I suspect that focusing too much on geography is misleading. My guess is that the most likely accidental pathways out of a lab are in contaminated waste, LAIs, and possibly failed filtration on the air handling system (just guessing). Only the last depends on the physical proximity to the facility; people and trash move, although one wouldn't expect the trash to go to the center of town.  
Micah

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**From:** Dave Franz <[davidrf Franz@gmail.com](mailto:davidrf Franz@gmail.com)>

**Sent:** Thursday, April 16, 2020 7:17 AM

**To:** Lowenthal, Micah <[mloewenth@nas.edu](mailto:mloewenth@nas.edu)>

**Cc:** James W. LeDuc <[jwleduc@UTMB.EDU](mailto:jwleduc@UTMB.EDU)>; Raymond Jeanloz <[jeanloz@berkeley.edu](mailto:jeanloz@berkeley.edu)>; Rusek, Benjamin <[BRusek@nas.edu](mailto:BRusek@nas.edu)>

**Subject:** Re: Summarizing China bio interactions to address USG questions

I think that's a good start. My primary continued concern is that confusion between the two labs. I think we need to add something about the fact the '4' is XX km (I always say 45 min, but we should be able to get the exact milage from the WIV) from the main campus in the city. People are still confusing the two...and, while anything is possible, I have not read anything that leads me to think about the '4' as being the potential problem. You do mention the reduced likelihood of an accident in the '4', but I think we need to include the word-map as well. We, rightly, comment on the '4' because that's what we saw, but I think it focuses the readers' mind on that lab. d

On Apr 15, 2020, at 10:29 PM, Lowenthal, Micah <[mloewenth@nas.edu](mailto:mloewenth@nas.edu)> wrote:

Jim, Dave, Raymond,

Given the questions that are swirling in Washington (and I guess elsewhere) and the possibility that we'll be asked by people in the U.S. government, Ben and I thought it would be prudent to work up a brief set of talking points that address some of those questions. Just to be clear, we're being asked these questions by people outside or at the margins of government now, but not yet by people in government.

If you can find some time, please take a look at these and correct errors, add important points, and improve this any way you see fit.

Thanks.

Micah

1. An NASEM group that includes Academy members and other top-flight American researchers, current and former directors of BSL-4 labs, former CDC, and former uniform military biodefense experts, has met with China's BSL-4 lab directors and other Chinese experts four times over about four and a half years. These meetings were organized as part of a U.S. - China bilateral dialogue focused on infectious disease research, the challenges of combating emerging infections, and laboratory safety and security. The next meeting was planned for April in the Wuhan area, but was postponed.
2. In 2017 the NASEM group visited the Wuhan Institute of Virology (WIV) BSL-4 lab (but not the downtown CCDC facility or its reported biocontainment laboratories in the city) before research in the BSL-4 laboratory spaces began. The BSL-4 is a French design and French engineers helped with design and construction. The facility was impressive; as modern as anything the U.S. has. The NASEM team was also impressed with the quality of the research presented during the dialogue meeting.
3. The dialogue focused on infectious diseases of concern to China and the United States, on best practices for management of biocontainment labs, including biosafety and biosecurity, as well as the research going on in them. NASEM thinks it is important to foster and encourage the best management and safety and security standards of laboratories working with the most dangerous pathogens. Connecting labs through research and training

partnerships helps ensure best practices and also provides some transparency into their work. A collaboration was established between the WIV and with the University of Texas Medical Branch Galveston National Lab and there continues to be good connectivity.

4. Scientists at the Wuhan biocontainment laboratories do cutting-edge research on the nature and evolution of zoonotic coronaviruses, including bat-borne coronaviruses. This has been seen as important work, especially following the SARS outbreak and current discoveries have been discussed by both Chinese and US experts during each of our dialogue meetings.
5. Unlike many Chinese institutes, the WIV is open to international collaborations, with visitors and joint research. Many of the meetings and exchanges are listed on their website.
6. Accidents can happen anywhere, but the NASEM experts who visited had no reason to think it was more likely at the Wuhan BSL-4 than at many other operational BSL-4s around the world. In fact, it was probably less likely. They had no basis to judge the BSL-2 or BSL-3, and they generally feel that it is harder to get a laboratory acquired infection, and especially one with offsite consequences, in a BSL-4 than in a BSL-2 or BSL-3. [Not sure that this bullet is necessary. I think that is true, but I agree with Jim, it's probably a statement that could take us down another rabbit hole.]
7. NASEM is trying to continue this engagement with Chinese counterparts, but it has become difficult. The scientists want to continue to pursue the science in an international, collaborative way and likely have important information to share about the nature of SARS CoV-2, but central authorities are constraining interactions and information sharing at this time.

**Micah Lowenthal, Ph.D.** | Senior Director, International Networks & Cooperation  
**Policy and Global Affairs Division**  
**The National Academies of Sciences, Engineering, and Medicine**  
500 Fifth Street NW, Washington, DC 20001 USA  
[mloenthal@nas.edu](mailto:mloenthal@nas.edu) | +1.202.334.3074