COMMITTEE ON OVERSIGHT AND ACCOUNTABILITY,

SELECT COMMITTEE ON THE CORONAVIRUS PANDEMIC,

U.S. HOUSE OF REPRESENTATIVES,

WASHINGTON, D.C.

INTERVIEW OF: WALTER IAN LIPKIN

Thursday, April 6, 2023

Washington, D.C.

The interview in the above matter was held in room 2203, Rayburn House Office Building, commencing at 9:56 a.m.

Present: Representative Dingell.

Appearances:

For the SELECT SUBCOMMITTEE ON THE CORONAVIRUS PANDEMIC:

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WILMERHALE

WASHINGTON, DC

Mr. Benzine. We will go on the record.

This is a transcribed interview of Dr. Walter Ian Lipkin conducted by the House Select Subcommittee on the Coronavirus Pandemic under the authority granted to it by House Resolution 5 and the rules of the Committee on Oversight and Accountability.

This interview is requested by Chairman Brad Wenstrup as part of the select subcommittee's oversight of the Federal Government's response to the coronavirus pandemic.

Further, pursuant to House Resolution 5, the select subcommittee has wide-ranging jurisdiction, but specifically to investigate the origins of the coronavirus pandemic, including, but not limited to, the Federal Government's funding of gain of function research.

Can the witness please state his name and spell his last name for the record?

Dr. Lipkin. My name is Walter Ian Lipkin. Last name is L-i-p-k-i-n.

Mr. Benzine. Thank you.

Dr. Lipkin, my name is Mitch Benzine. I'm the staff director for the majority staff of the select subcommittee. And I want to thank you for coming in today for this interview. The select subcommittee recognizes that you are here voluntarily, and we appreciate that.

Under the select subcommittee and Committee on Oversight and Accountability's rules, you are allowed to have an attorney present to advise you during this interview.

Do you have an attorney representing you in a personal capacity present with you today?

Dr. Lipkin. Yes.

Mr. Benzine. Will counsel please identify themselves?

Mr. Babbitt. Christopher Babbitt of WilmerHale.

Mr. Benzine. Is there also an attorney present representing your employer with you today?

Dr. Lipkin. Yes.

Mr. Benzine. Will counsel please identify themselves?

Ms. Drori. Danna Drori from Columbia University.

Mr. Benzine. For the record, starting with the majority staff, can the additional staff members please introduce themselves with their name, title, and affiliation?

Ms. Brewer. Madeline Brewer, counsel for the majority.

Mr. Emmer. Jack Emmer, counsel for the majority.

Ms. Policastro. Marie Policastro, majority staff.

Mr. Benzine. And minority staff?

Mr. Lichtman. Miles Lichtman, staff director for the minority.

Mr. Pellegrini. Giancarlo Pellegrini, chief counsel for the minority.

Ms. Jackson. Sarah Jackson, counsel for the full committee minority.

Ms. O'Keeffe. Kelly O'Keeffe, communications director for the minority.

Mr. Benzine. Thank you.

Dr. Lipkin, before we begin, I would like to go over the ground rules for this interview. The way this interview will proceed is as follows.

The majority and minority staff will alternate asking you questions, 1 hour per side per round, until each side is finished with their questioning. The majority staff will begin and proceed for an hour, and then the minority staff will have an hour to ask their questions. We will then alternate back and forth in this manner until both sides have no more questions.

If either side is in the middle of a specific line of questions, they may choose to end a few minutes past an hour to ensure completion of that specific line of questioning, including any pertinent follow-ups.

In this interview, while one member of the staff for each side may lead the questioning, additional staff may ask questions.

There is a court reporter taking down everything I say and everything you say to make a written record of the interview. For the record to be clear, please wait until the staff who are questioning you finishes each question before you begin your answer, and the staffer will wait until you finish your response before proceeding to the next question.

Further, to ensure the court reporter can properly record this interview, please speak clearly, concisely, and slowly.

Also, the court reporter cannot record nonverbal answers, such as nodding or shaking your head, so it is important that you answer each question with an audible, verbal answer.

Exhibits may be entered into the record. Majority exhibits will be identified numerically. Minority exhibits will be identified alphabetically.

Do you understand?

Dr. Lipkin. I do.

Mr. Benzine. We want you to answer our questions in the most complete and truthful manner possible, so we will take our time. If you have any questions or do not fully understand the question, please let us know. We will attempt to clarify, add context to, or rephrase our questions.

Do you understand?

Dr. Lipkin. I do.

Mr. Benzine. If we ask about specific conversations or events in the past and you

are unable to recall the exact words or details, you should testify to the substance of those conversations or events to the best of your recollection. If you recall only a part of a conversation or event, you should give us your best recollection of those events or parts of conversations that you do recall.

Do you understand?

Dr. Lipkin. I do.

Mr. Benzine. Although you are here voluntarily and we will not swear you in, you are required, pursuant to Title 18, Section 1001 of the United States Code, to answer questions from Congress truthfully. This also applies to questions posed by congressional staff in this interview.

Do you understand?

Dr. Lipkin. I do understand.

Mr. Benzine. If at any time you knowingly make a false statement, you could be subject to criminal prosecution.

Do you understand?

Dr. Lipkin. I do.

Mr. Benzine. Is there any reason you are unable to provide truthful testimony in today's interview?

Dr. Lipkin. No.

Mr. Benzine. The select subcommittee follows the rules of the Committee on Oversight and Accountability. Please note that if you wish to assert a privilege over any statement today, that assertion must comply with the rules of the Committee on Oversight and Accountability.

Pursuant to that, Committee Rule 16(c)(1) states: "For the Chair to consider assertions of privilege over testimony or statements, witnesses or entities must clearly

state the specific privilege being asserted and the reason for the assertion on or before the scheduled date of testimony or appearance."

Do you understand?

Dr. Lipkin. I do.

Mr. Benzine. Ordinarily we take a 5-minute break at the end of each hour of questioning, but if you need a longer break or a break before that, please let us know, and we are happy to accommodate. However, to the extent that there is a pending question, we would ask that you finish answering the question before we take that break.

Do you understand?

Dr. Lipkin. I do.

Mr. Benzine. Do you have any other questions before we begin?

Dr. Lipkin. I don't.

Mr. Benzine. The majority staff will start their hour of questions.

EXAMINATION

BY MR. BENZINE:

Q First, I do want to thank you sincerely for coming voluntarily and for a long career of what amounts to defending the globe from deadly pathogens.

I want to start by briefly discussing your education and experience.

Where did you attend undergraduate school and what degree did you graduate with?

A I went to Sarah Lawrence College, and I have a B.A.

Q Where did you attend medical school?

A Rush Medical College.

Q And who is your current employer and what is your current job title?

A Columbia University. I'm the director of the Center for Infection and

Immunity, the John Snow Professor of Epidemiology, professor of neurology, professor of pathology, and director of the Global Alliance for Preventing Pandemics.

Q Thank you.

Briefly, can you run through your career up until you came to Columbia?

A After finishing my B.A. at Sarah Lawrence, I went to Rush Medical College. After 4 years of Rush Medical College, I did a residency, beginning with 1 year at the University of Pittsburgh, 2 years at the University of Washington in Seattle. And then I did a neurology residency, University of California, San Francisco.

After that, I spent 6 years at the Scripps Institute for Research. And then I went to the University of California, Irvine, where I was on faculty for 12 years. And since 2001 I have been at Columbia.

Q Thank you.

What is kind of your day-to-day like at Columbia?

A I run a large research center. It's focused on several different research areas. There are many faculty who report to me, as well as students and postdoctoral fellows. And, of course, there is a lot of international work.

Q Can you describe the international work a little bit more?

A So the Global Alliance for Preventing Pandemics, which is supported by both foundations and the National Institutes of Health, trains people, consistent with the International Health Regulations of 2005, in diagnosis and discovery of infectious diseases. And we are currently active in Brazil, Mexico, Indonesia, Mali, Liberia, Zambia, and we're adding countries all the time.

In addition, I have work that I do with a group in Norway on pathogenesis; that is to say, what is responsible for autism. I do a lot of work on something called ME/CFS, Myalgic Encephalomyelitis/Chronic Fatigue Syndrome, and on Gulf War illness with the

Department of Defense.

Q Thank you.

Do you currently hold or have you previously held any honorary positions?

A Yes, I have. There was a point at which I was considered an honorary professor -- I don't remember the precise title -- at Beijing University, but it never -- there were never any classes associated with it, never any salary or such.

There was another similar sort of position in, I think it was Nanjing, but, again, it didn't result in any specific courses.

And then there was a program that I ran at Sun Yat-sen University with Liuduhai Lu, which was focused on what we call One Health, and that was at Sun Yat-sen University.

Q Thank you.

Do you currently hold or have you previously held any positions on boards of companies, nonprofits or otherwise?

A I have. I was on -- well, I'm not going to have a complete recollection.

Q No. That's fine.

A Probably the most important one was a company called 454, which was the first modern, what we call next-generation sequencing company. That was in Branford, Connecticut. I also did some work with a group at Cornell. And then there is a company called Quicksilver Biosciences with which I'm involved now, which is developing rapid diagnostics.

Mr. Benzine. Thank you.

I would like to pause so the two individuals that just walked in can identify themselves for the record.

We'll start with you, ma'am.

Mrs. Dingell. Congresswoman Debbie Dingell from Michigan.

Ms. Carroll. And I'm Megan Carroll, her legislative assistant.

Mr. Benzine. Personal office are not allowed in.

Ms. Carroll. Oh, okay.

Mr. Benzine. Thank you.

Thank you.

BY MR. BENZINE:

Q You've studied a number of viruses over the course of your career. I think people describe you as a master virus hunter. I don't know if you have seen that.

Can you explain your experiences studying emerging disease outbreaks and then some of the major ones that you've been involved in?

A So I began the field of virus discovery in the mid-1980s, and I was the first person to use a method called subtractive cloning for identification of viruses. And what this means is that you extract all the genetic material from a sample that presumably contains the infectious agent and one which does not, and then you find out what is exclusively in the infected sample.

That led to my becoming involved in 1999 in the discovery of West Nile virus in New York, which at that time was called St. Louis encephalitis virus. That was an error. It was the first outbreak with which I was involved as well.

As a result of that work, I became involved in several subsequent investigations of outbreaks. One was the SARS outbreak in China in 2002 to 2003. Then there was MERS in Saudi Arabia, Zika in Brazil, monkeypox in Liberia. It's a very long list. I've discovered over 2,000 viruses.

Q We'll get into SARS a little bit.

Can you kind of describe just generally what the involvement in those look like?

So, like, do you travel there? Do you facilitate cooperation between the United States and the outbreak country? What is kind of the general work?

A Well, it's a field condition situation. It depends on what's required.

One of the challenges, of course, is you have to be invited in, and that requires a formal invitation. I'll give you a few examples for that.

So one would be, starting with SARS back in 2003, the bench for people who knew how to do scientific research was very shallow. And I was invited by the Minister of Science and Technology, Xu Guanhua, and the vice president of the Chinese Academy of Sciences to come to Beijing and to help them develop a research agenda for dealing with SARS.

Another example, with a virus called Lujo that emerged in South Africa and Zambia, they couldn't figure out what it was. So we received samples. And in that instance we didn't go to Zambia. We received the samples and we characterized them.

With MERS in Saudi Arabia, we went to Saudi Arabia. I did a survey of the animals that were likely to be implicated. But when we got to what we call ungulates, which are the dromedaries, the camels, because of concerns about foot-and-mouth disease, we couldn't bring samples back. Therefore, I sent a team there to actually do laboratory research all around the country, collect samples and characterize them.

In India, we were investigating an encephalitis outbreak in a place called Gorakhpur, which is up toward the border with Nepal. There we went, collected samples, characterized them.

We did work in Israel with a virus that was killing what's called St. Peter's fish, which we know better as tilapia. We did that work in Israel.

We did work with Norway on a virus that was killing salmon.

So it all -- and we have done work in other contexts as well with H5N1 in Mexico,

and so on.

So if we are invited in, we go in. If not, if we can receive the samples, we receive the samples.

Q Thank you.

Over the course of your career, have you received grants or contracts from the Federal Government?

A Yes.

Q Do you have a ballpark on how many and in what amount?

A I couldn't tell you how many, but they've been -- over a period of since 1985 to present, I've been continuously funded by the NIH. I've also been funded by the Department of Defense and Veterans Affairs, USAID, and, to a smaller extent, the Centers for Disease Control.

Q Thank you.

I think it's self-explanatory, but would you consider yourself to be an expert in infectious disease?

A Well, I never completed an infectious disease fellowship, but I'm a fellow with the Infectious Diseases Society of America.

Q How would you consider yourself, like an epidemiology expert?

A I'm, if not unique, I'm very unusual in that I'm trained as a physician in two disciplines, then did 6 years of basic science, and have 35 years-plus work in this field. I don't know anybody else who is directly comparable.

Q Okay. Thank you.

I want to switch to your experiences with SARS 1 in China. If you can recall, can you start with how you first learned of the SARS outbreak?

A I don't remember how I first heard of the SARS outbreak, except that at that

point it wasn't clear that it was a coronavirus. People were talking about bacterial infections as well.

And I gave a lecture to a group of students at Columbia University about a test that we developed for looking specifically for coronaviruses and why it was going to be more sensitive than all the other assays that were being used.

So in the event there was clearly a coronavirus, this was going to be instrumental in helping to figure out who was infected and how it could be contained.

And as I gave this lecture, there were two Chinese M.D., Ph.D. students in the back of the room who silently got up and left. And by the time I arrived back in my office after this lecture and this discussion, there was somebody from the Chinese Consulate waiting to talk with me. I explained to him what this was. I asked for details about SARS coronavirus.

The next day I went down to the consulate. I had tea. The day after that they invited me to dinner. I went for all of these things, and they said, "We need you to go to Beijing tonight." I said, "I can't go to Beijing tonight. I've got teaching through Friday. But I can go on Saturday."

So I went with one of my colleagues to China and essentially directed the efforts and the research and containment of the outbreak through August of 2003 in collaboration with Chen Zhu.

Q So you touched on this a little bit. In 2003 you were officially -- you were invited into China, correct?

A Correct.

Q And the invitation was extended by the Chinese Academy of Sciences and the Chinese Ministry of Science and Technology?

A Correct.

Q And you hit my next question of explaining that interaction a little bit more. You gave the lecture, and then the consulate and the dinner and then traveled a little bit later.

Do you recall specifically, from the Chinese Academy of Sciences, who extended the invitation?

A Chen Zhu.

Q And what was his title then?

A At that point he was the vice president.

Mr. Benzine. I want to introduce exhibit 1, which will be handed out to everybody.

[Lipkin Exhibit No. 1

Was marked for identification.]

BY MR. BENZINE:

Q While it's handed out, this is a press release from the University of Columbia's website dated January 8th, 2016, entitled "Ian Lipkin Receives Top Science Honor in China." The release, as you just said, says the invitation was extended to you by Chen Zhu, the then vice president of the Chinese Academy of Sciences, and Xu --

A Xu Guanhua.

Q -- the then Minister of Science and Technology in China.

Once you got to China, what did the assistance in the outbreak look like?

A You're talking about 2003?

Q Uh-huh.

A Okay. So there were several things that I did. One was to attend a meeting at the National CDC where the director of the CDC at that point was convinced that it was not a coronavirus. He thought it was something different.

And I was sitting at lunch with the minister on one side -- or the director on one side -- who was showing me slides of what he thought it was, which is bacteria, and two younger scientists on the right who were showing me pictures of coronavirus. And they said to me, "We're unable to publish this because he's convinced that this is what it is and it's clearly wrong."

I gave a talk in a very large hall, probably 250, 300 people there. I remember this quite clearly because I had not prepared remarks, and I was told that I was now in charge of directing the research, where I very rapidly assembled a keynote presentation, which then outlined all the steps they needed to do to contain it.

I had carried with me 10,000 test kits that could be used for looking for the presence of virus, and we then demonstrated those in real-time on national television.

And from that point forward, I would just review proposals that Chen Zhu would say to me, "Does this make sense? Does this make sense?" And then we had a sort of an interim assessment as to what they achieved in August of that same year.

Q After the SARS outbreak dwindled, did your relationships in China continue?

A They did.

Q What did those relationships look like between the end of SARS and before COVID-19?

A Well, it became clear to me that we needed to have infrastructure so that China could identify infectious agents within its borders. And, again, this really -- I referred earlier to the International Health Regulations of 2005, which all the member states of the United Nations signed, which said everybody had to diagnose infections and be transparent about what they knew.

So I helped stand up what's called the Institut Pasteur de Shanghai, the Guangzhou Institute of Biomedicine and Health. I helped recruit people for those

organizations, primarily trained in the United States and Europe, and tried to facilitate collaborations between NIH scientists and CDC scientists and their Chinese counterparts.

Q What agencies in China did you interact with the most?

A That's hard to say because it's so well -- they are so interlocked. But I would say the Ministry of Science and Technology, Ministry of Health, Centers for Disease Control would be the three that are pivotal.

Q Thank you. And you answered my next question about assisting China with developing infrastructure related to pandemic preparedness.

Do you maintain relationships with any of those institutes that you just mentioned still today?

A With the CDC, though there's a new director, so I have not yet met the new director.

Q Specifically, do you still have relationships with the Institut Pasteur in Shanghai or the Guangzhou Institute of Biomedicine and Health?

A No.

Q Did the Pasteur Institut sever its relationship with the Shanghai campus?

A I don't know.

Q Okay.

In 2016, you received the International Science and Technology Cooperation Award, correct?

A Correct.

Q After the start of COVID-19, what has your work with China looked like?

A Well, it's -- I mean, there have been different phases. So immediately --

Q Start with December 2019 and work forward.

A Okay. So you want chronological order.

So I first learned of something that was circulating in Wuhan in mid-December, but I didn't know, and at that point I don't know that anybody knew what it was.

And we have -- I hear at least quarterly from various people, various parts of the world, that something's circulating here or there. So right now we have, for example, it's Marburg.

But I offered at that point a method that we developed which is very sensitive, very rapid for identifying infectious agents. They did not take me up on that.

At the end of December it became clear that things were changing. And in January, when the sequences were first released, we began trying to figure out whether or not there are ways in which we could be helpful by using antibody tests to try to figure out which animals, which people had been infected and when, by going through archival specimens.

I went to China the last week or so of January. I did not go directly to Beijing. I went to Guangzhou where I had this relationship with Sun Yat-sen University and Liuduhai, Professor Liuduhai. And from there I went to Beijing.

And in Beijing I had conversations with people who were high in the various medical, scientific, as well as political establishments of what they should do.

Q Did that include -- did you meet with Chen Zhu while you were there?

A Yes.

Q I'm going to run through a list of agencies and institutions, and just a yes or no if you met with or assisted them.

The Wuhan Institute of Virology?

A No.

Q The Wuhan Centers for Disease Control and Prevention?

A No.

Q Wuhan University?

A No.

Q The Chinese Academy of Sciences?

A Indirectly, yes, through Gao Fu, George Gao.

Q Okay. The Academy of Military Medical Sciences?

A Not this time.

Q Okay. Or the Fifth Institute under the National Defense Ministry?

A No.

Q Going forward from -- I guess we are in January 2020 now. What did the assistance look like, say, the first year, throughout 2020? Did they eventually accept help, your offer for help, or did it kind of dwindle as we went along?

A They didn't. The only work that I started was with Liuduhai Lu, who's at Sun Yat-sen. He's not a member of the government. And with him we developed an antibody test that could be useful for distinguishing between infections with the original SARS virus and SARS-CoV-2, and that was published.

Mr. Benzine. Okay. I want to introduce exhibits 2 and 3. That will be passed around.

[Lipkin Exhibit Nos. 2 and 3
Were marked for identification.]

BY MR. BENZINE:

Q And this will get a little complicated, so if we have to go off the record to establish this, we can.

Exhibit 2 is Chen Zhu's bio from the Stanford Medicine's Sino-U.S. Symposium, and exhibit 3 is an email chain from May of 2020 between yourself and Chen Zhu and eventually Dr. Fauci. And that's Bates numbered LIP-002631 through LIP-002633.

And then taking exhibits 1, 2, and 3 in conjunction, Chen -- in exhibit 1 Chen Zhu is spelled Z-h-o-u, but in exhibit 2 it's Z-h-u and exhibit 3 it's Z-h-u.

Are these the same person?

A Okay. You've given me a lot of things simultaneously.

Q No, I know.

A So I need to figure out what's what.

Q So in exhibit 1 --

A Okay. I see you've done it. It's marked exhibit 1. That was my first question.

Q You were invited by Chen Zhu, who was in 2003 the vice president of the Chinese Academy of Sciences.

A Yes.

Q And in that press release it's spelled Z-h-o-u. In his bio it's Z-h-u. And in the email, exhibit 3, it's Z-h-u. Just trying to figure out if they're the same person with a typo in the press release.

A They are the same person.

Q Okay. Turning to exhibit 3, like I said, this is an email chain between yourself and Chen Zhu, who we just established was the one who invited you originally for the SARS outbreak, and then eventually Dr. Fauci is on the email chain.

I want to start at the top of the page and work backwards.

A The top of this page?

Q Yes.

A I'm sorry, stenographers. That was the front of page exhibit 3. I forgot I can't make gestures.

Q At the -- well, your email on the front of the first page, you say: "Chen Zhu

called this weekend to request assistance in investigating the origins of SARS-CoV-2."

Do you recall anything about that phone call, other than what you state to Dr. Fauci?

A The only thing I recall is that this was politically challenging there. I think that's the only thing really to say about it.

Q And that phone call from Zhu prompted your email to him that begins on Bates 2632 and flows into 2633, where you offer -- extend a hand to help investigate the potential origins of SARS-CoV-2. Is that correct?

A That is correct.

Q So in this email you state: "There is also a high level of confidence that the virus was not deliberately modified in any laboratory."

What science was there by May 5th, 2020, to support that statement?

A As I think I've said in a number of different interviews and papers I've written and so forth, this virus is so well adapted to growth and transmission between people that there was nothing that we could have predicted based on our knowledge of coronaviruses at the time that would have allowed somebody to deliberately design this virus.

There's a lot of focus on the furin cleavage site. This is only one aspect of its biology that is important. And the rate at which this virus has evolved and changed, which is why we see all of these new variants, illustrates the power of evolution to redirect the way this virus moves from one host to the next.

Q Can you explain a little bit more, though, like that science wouldn't be able to anticipate what the sequence of this virus looked like?

A There isn't a lot of data yet on coronaviruses. There's more since the onset of the pandemic because more resources have been put into it internationally. But

before the emergence of SARS-CoV-2 there were a very limited number of laboratories working on coronaviruses.

What we have learned about the way the virus binds to a cell and gets inside of it and how it gets processed once it gets inside of a cell is all recent information that, in retrospect, you might say, yeah, well, this makes sense. But at the time that this virus first emerged, we didn't have those sorts of insights.

So when we went looking for any sort of evidence that it had been deliberately modified, we could not find that. That was the basis for this comment.

Q Was it also -- we'll talk about this more later -- was that also built into the basis for the proximal origin paper in Nature Medicine?

A It was part of it.

Q Second, in this email you state: "What we do not know is the answers to two questions. Number one, whether a precursor virus circulated in the human population before it evolved to become a pandemic virus. And, number two, whether a precursor virus adapted to humans by first passing through another animal."

Can you explain the importance of the first question?

A Let me take a look at this so that I'm --

Q It's in the middle of the paragraph on --

A Okay. So when one investigates an outbreak of any sort, one of the things you want to do is to eliminate the risk that it could reemerge, whether that virus or a similar virus, because that gives you some sense as to what you can do to protect not only the local population but the global population.

What we were trying to do is to find any sort of markers, any sort of evidence that it might have been circulating at an earlier time point.

I will give you an example from HIV. When we have gone back and looked for

evidence of a virus circulating like HIV, although we first appreciated this in the early 1980s, there was a similar virus that was circulating in the 1940s.

When we went looking for the origin of MERS, I wound up going back into libraries of camel blood and finding that there were antibodies going back at least 10 years that had been stored in the repository, which told us that, although we first became aware of it in the middle of 2016, it was, like, actually present at a much earlier time point.

Q So it's, on that topic, it's believed that COVID-19 was circulating in China prior to December and at a minimum in November. Do you agree with that statement?

A This is -- now we're getting into speculation. If I had to speculate, I would say that it probably was circulating in some form earlier than it was first reported. But I can't say specifically when, and I can't even say that the December 15th call that I had was specifically about SARS.

Q So it's a precursor -- we haven't found a precursor virus circulating in the human population prior to December 3lst-ish?

A Not to my knowledge.

Q Okay. Would knowing the prevalence of the virus prior to December be important to discovering its origins?

A Could be.

Q What level of scientific weight should be placed on studies that use viral samples taken in December or January knowing that it's possible that those are 3 months late?

A They're still useful. I mean, first of all, the virus might, although we first found it in Wuhan, it might have appeared someplace else earlier.

When you start doing this kind of work it's like a Sherlock Holmes mystery. You're trying to figure out where it came from, where it's going, and where it will likely be

next. So you have to gather as much data as you can.

And the substance of this particular request of Chen Zhu was to try to see if we could get American scientists, scientists who were not necessarily Chinese, European perhaps, engaged in helping to sort this out.

Q Going back to your original statement, can you explain the importance of the answer to the second question, whether a precursor virus adapted to humans by first passing through another animal?

A So it's fairly common for viruses to adapt before they move in the human population. So certain influenza viruses, for example, which are present in wildlife, like migrating ducks and such, go through pigs and then become better adapted to humans.

MERS presumably began in a bat, went through a camel, and then infected humans.

Monkeypox started with a rodent and then wound up in humans.

Ebola started probably with a bat, Marburg certainly with a bat, went to nonhuman primates, and then into humans.

And in SARS, in 2003, the virus which started in a bat wound up going through civets in wild animal markets before it moved into humans.

And the process of adaptation as the virus evolves allows it to be more adept at getting into a cell and overcoming the limitations for replication.

Q So that's where we see, like in SARS, where it was a couple people would get infected and then a couple more people would get infected, like the virus learning how to jump from a civet to a human?

A Did you see "Contagion"?

Q I have not. It's on my list though.

A Well, that's too bad, because we do a pretty good job of explaining it there.

There's this concept called R-naught. The R-naught is the number of people who become infected as a function of the first person who becomes infected. So an R-naught of two, two people become infected. As you adapt, the R-naught increases.

And there's a scene in that particular talk where Jennifer Ehle says, "And the R-naught is not two anymore," which is when the virus has gone through an HIV/AIDS population, it's further adapted. And this is what happens with many of these viral infections.

Q Is it possible for a virus to adapt to humans by passing through animals in a laboratory setting?

A Yes.

Q How?

A The same way it would in a market.

Q So use humanized mice or H2 receptor mice in a lab?

A Any opportunity that the virus has to grow, whether it's in tissue culture or in an animal, whether it's in the wild or in a market or in a laboratory, is something that could allow the virus to adapt.

Is there anything we can do about temperature in here?

Mr. Benzine. We can call someone.

Dr. Lipkin. I'm going to shed my jacket, if that's okay.

Mr. Benzine. Absolutely.

Mr. Pellegrini. I will take it off with you.

Mr. Benzine. It's warm in here today.

Can we go off the record for just 1 second?

[Discussion off the record.]

Mr. Benzine. We can go back on the record now.

BY MR. BENZINE:

Q So also in this email, the same one, you go on to explain how you would foresee a potential joint U.S.-China origins-type investigation.

Did you run this offer by anyone in the U.S. Government prior to emailing it?

A No.

Q Did Zhu accept this offer?

A He told me that he would have to try to run it up his flag pole.

Q He responds a couple hours later on the top of page 2632 and said: "After discussion with some colleagues, I believe we may need a bit more patience for the work to be initiated, in view of the very complex situation."

Do you know where Zhu worked at the time, who his colleagues would be that he was discussing this with?

A We're talking about Chen Zhu now?

Q Yes.

A Okay. So Chen Zhu, at this point, he's no longer -- so he was -- let me give a little background on Chen Zhu. I know I'm not supposed to talk, but it's important to understand context.

It's okay. Don't get me in trouble.

So Chen Zhu, after he left the Chinese Academy of Science, became Minister of Health. He was Minister of Health for 6 years. He then became director of the Chinese Red Cross. And when I met with him in December -- or rather in January of 2020 -- he was in that capacity as the director of the Red Cross.

He was also a member of their government, but not a member of the Communist Party, representing college professors, artists, people like that.

Q Okay.

A So he was presumably trying to broker some sort of relationship.

Now, when he's talking about political considerations, what he's trying to do is he's trying to address the issues, the Wuhan Institute of Virology, the China CDC, the Ministry of Health, and all these different groups, some of whom are concerned about their turf. I think that's really much of it.

And what I read into this specifically is that he wants to make sure that Shi Zhengli and her team is going to be credited for the work that they've done.

Q So that's, in your opinion, that's the complex situation that Zhu was referencing in that sentence --

A Yes.

Q -- is the interplay between all of those various agencies.

He continues, and you just hinted at this: "It will be reasonable that Dr. Shi Zhengli and her team at the Wuhan Institute of Virology be involved in the work. Unfortunately, the institute is under heavy pressure these days, with well-known reasons."

Do you know what those reasons -- what reasons he would be talking about?

A Yes. There was concern that -- and Shi had this concern as well -- is that the virus might have arisen there.

Q Have you worked with the Wuhan Institute of Virology before?

A No. I have -- let me qualify that by saying I have visited them on one occasion.

Q When? Do you remember?

A No.

Q All right.

Zhu continues: "My suggestion is that you give us some time (just one month) to

let the dust come down around the Wuhan Institute of Virology."

The dust, he's referencing the possibility being that -- at that time the possibility that they were worried that the virus came from that lab. Is that correct?

A That's my interpretation.

Q And have you had any communication with Zhu since December of 2020?

A I have.

Q Are you aware that he is sanctioned -- currently sanctioned by the United States Government?

A No.

Q All right. In June 2020, in his role as -- in the National People's Congress, he passed the law of the People's Republic of China on safeguarding the national security in Hong Kong. And on December 7th, 2020, he was sanctioned by the United States for his involvement and was put on the U.S. Treasury Department's Office of Foreign Assets Control's Specially Designated Nationals and Blocked Persons List.

You weren't aware of that?

A No.

Q What has your communication with him looked like since December of 2020?

A In March of 2020, when I became sick with SARS -- that was back before it was fashionable -- he offered to send me convalescent plasma for treatment, because at that point we didn't really have convalescent plasma.

And he had sent me a paper to review for the National Academy of Sciences in which he described the efficacy of convalescent plasma for treating people that have been exposed.

And I gave him advice on that paper and told him that he needed some additional

controls. He revised his paper, and it was subsequently published.

And I was unable to get plasma imported to the United States from China.

Q Do you think Zhu was being honest with you in this email exchange?

A I do.

Q You don't think he was covering for the Chinese Communist Party or the Government of China at all?

A I don't.

Q Okay. I want to switch gears a little bit more towards COVID-19 specifically. Just quick questions off the top.

Yes or no, is discovering the origins of COVID-19 important?

A Yes.

Q Why?

A Because the more we learn about how these viruses originate, the better prepared we'll be to prevent further outbreaks.

Q Do you think we as a globe will ever know for sure where COVID-19 came from?

A No.

Q Do you think we'll know beyond a reasonable doubt or preponderance of the evidence?

A That's a more nuanced question. I'll have to see how the data unfolds.

Q Is the origin of COVID-19 still unsettled?

A In my mind, it is.

Q So going back now to the start of COVID-19 and kind of when things happened, it was first reported as an unknown -- undiagnosed pneumonia in ProMED on December 30th, 2019.

In your words, what is ProMED?

A ProMED is a digest that's circulated -- I don't know how many thousands of people subscribe to it now -- but it contains information about diseases in animals and humans.

Q China first officially reported the unexplained respiratory virus the next day, December 31st, 2019. And as you've testified and said a few times in interviews, you first learned of a cluster of some kind of undiagnosed disease not yet defined in as early as December 15th, 2019. Is that correct?

A Middle of December. I'm not precisely clear.

Q Okay. And this information came to you from a member of your staff. Is that correct?

A Yes.

Q Do you know who? Do you remember who?

A I do.

Q Can you say?

A Hana Lin, L-i-n.

Q And what is her role?

A She's a technician of Chinese descent who works in my laboratory.

Q In Columbia?

A At Columbia.

Q How did -- did she explain to you how she found out about these possible cases in mid-December?

A So during the period that I heard about this, I was overseas. I was in Egypt. It would have been a very short phone call during the course of my checking to make sure everything was solid in the lab. It was not an extensive call, and it was not something

that was associated with any sort of written record.

Q I understand you were in Egypt. Did you take any action between December 15th and December 3lst before China made the information public, or was it kind of another potential, like you get notifications of potential outbreaks all the time?

A Well, yes and yes. So I asked Hana to extend an offer if they wanted help with characterization, because what we could do is we could provide these methods that we've developed which are easily used for characterization of unknown agents. But, in addition, because there was no confirmation and we get these kinds of calls frequently from all over the world, there was no four-alarm fire.

Q Did Ms. Lin extend the invitation, to your recollection?

A I presume she did.

Q But you didn't hear anything back? Yes or no?

A I didn't hear anything until the end of the month.

Q Okay. Between December 15th and December 3lst, I'm going to ask you some names, and you can just say yes or no if you spoke to them.

Dr. George Gao?

A Give me the dates.

Q Mid-December to when China officially announced cases on December 3lst.

A So I heard from Gao on the 3lst of December.

Q Okay. Dr. Anthony Fauci, any time during that 2 weeks?

A I don't know.

Q Dr. Collins?

A I don't know. I don't think so, no, not Collins.

Q Dr. Jeremy Farrar?

A No.

Q Dr. Eddie Holmes?

A That I don't know.

Q Okay.

A It's possible.

Q What about after it was officially -- so after China officially said cases? So you said you talked to Gao on the 31st?

A Well, I didn't talk to him. He called me.

Q Okay. You missed the call?

A I missed the call.

Q Okay. Did you call him back?

A I did not. I had a voicemail.

Q Do you remember what the contents of the voicemail were?

A I do.

Q Can you give it to us, to the best of your recollection?

A Can I consult with counsel on that?

Mr. Benzine. Yeah. We can go off the record for a second.

[Discussion off the record.]

Mr. Benzine. We can go back on.

Dr. Lipkin. So I would like to -- so I have no hesitation about telling you what I heard, with the following caveat.

Mr. Benzine. Okay.

Dr. Lipkin. Okay. My ability to operate and actually protect you, honestly, and work around the world is no different than a journalist who has to protect sources.

So if I tell you what I heard and you control it in that fashion, it will not prevent me from being able to work in China.

I am your best link to China. You don't want to lose me there. So it's very important that this not go beyond this room or I won't be able to operate, and then we'll have no visibility into China.

Mr. Babbitt. Maybe we could go off the record again.

[Discussion off the record.]

Mr. Benzine. We can go back on the record now.

And I will re-ask the question so that the transcript is clear.

BY MR. BENZINE:

Q So you testified on December 3lst, Dr. George Gao, the then director of the Chinese CDC, called you. You missed it, and he left a voicemail.

What were the contents of that voicemail?

A The contents of the voicemail was that a virus had been discovered, that it was a new type of coronavirus, but that we shouldn't be worried because it was not highly transmissible because the number of family clusters were very small.

Q Okay. Thank you.

A May I add one thing to that?

Q Absolutely.

A He said keep this confidential and I'm breaking confidence in telling you this. And my sense in retrospect is that he -- you know, this is something, a conversation that he regrets because he was clearly wrong. And in the history books, he doesn't want to be remembered as the person who said this thing is not a risk to humanity. Okay.

So I don't want to kill his career, his legacy, and I don't want to disrupt my ability to work in China.

Q Absolutely.

A Okay.

Q One quick follow-up.

You said that your feelings was that he was breaking confidence. Whose confidence did you think he was breaking?

A He was sharing -- well, he was sharing with me information that was not publicly available at the time.

Q Do you think he would have been prohibited from sharing that information?

A It's -- you know, it's very complicated to try to figure out whether or not people are jealously guarding their careers and their priority in releasing something as opposed to being prohibited from saying something.

But in this instance I think he just wasn't ready to publish something, so he wanted to get everything nailed down before he released the data.

Q All right. So that same date range after the virus became publicly available, the same scientists.

Did you have any conversations with Dr. Fauci?

A Yes. I mean, so I've known Dr. Fauci for decades. And so when I was talking with him about going to China, I asked him whether or not there were specific questions that he wanted me to address. I also did the same thing with people at the Centers for Disease Control, asking them what questions they wanted to address.

So in the early days, we did not know how the virus was transmitted. People were concerned about it being transmitted on objects. The respiratory transmission was less apparent. We didn't know how long people were infectious or when they became infectious.

And so there were a whole series of questions that I was asked to pose when I went to China, when I could have one-on-one conversations with people. So the conversations that I would have on this topic were colored by those conversations I had

with Fauci and with people at CDC.

Mr. Babbitt. And, Mitch, to be clear, we're now talking about January 2020?

Mr. Benzine. Yes, so post-Chinese official announcement on December 3lst.

Dr. Lipkin. Right.

BY MR. BENZINE:

Q Do you recall what questions -- first, do you recall who at the CDC that you spoke to?

A Yes. I can't believe I'm block -- oh, it just came to me. Mark Pallansch, P-a-l-l-a-n-s-c-h.

Q What is his role at the CDC?

A Well, I don't know what it is now because the place is -- you know, there have been reassignments and so forth. But he was getting insight from his colleagues.

So, again, this is one of the things -- what I'm trying to say is my ability to operate. And I did the same thing in Saudi Arabia for CDC, NIH, and WHO. I was able to go into Saudi Arabia and get information that I fed back then to the CDC and NIH -- and the CIA as well -- about what was happening in Saudi Arabia. So I've done this many times.

Q Do you remember what questions either the CDC or Dr. Fauci or anyone at NIH or NIAID requested that you ask?

A Yes. And they were actually very similar. People wanted to know: What is the incubation period? When are people infectious, before they manifest symptoms, after they manifest symptoms? How transmissible is it? How many people will likely be infected, that R-naught concept I mentioned.

Are there infected animals, right, that might be reservoirs for the virus? What is known about the number of cases? What is the fatality rate? What is the sequelae of infection? The usual kinds of questions that you would want to address when you are

trying to confront a new outbreak so you could decide how to try to contain it.

Q And on about when did you go to China after those conversations, and when did you return?

A So I went the last week of January, and I returned, it was either the 4th or the 5th of February. I think I was on the last -- I was on the last flight out of Beijing to Newark.

Q Wow.

A Yeah.

Q And then you caught COVID here, right?

A Yes, I caught it in March.

Q That same time period, after, post-December 3lst, did you talk to Dr. Jeremy Farrar?

A No.

Q What about Dr. Holmes again?

A I have talked to -- I was talking to Eddie Holmes.

Q What were those -- prior to -- well, for the month of January, what were those conversations like, if you can recall?

A Well, I was -- after coming back from China and finding out that, in fact, the wild animal markets I had been told had been shut were not shut, I wrote an article calling on China to shut all wildlife markets and saying that this was a risk that we couldn't bear.

And I offered Eddie Holmes co-authorship on that paper. We sent it around, and then we were never able to get it published.

Q When you came back early February, did you meet with anyone at the CDC or anyone at the NIH or NIAID to discuss what you had experienced?

A I'm sure I had conversations and email with Fauci, for example, but not with Francis Collins and not with anybody at CDC. There might have been a message to Mark Pallansch, but I don't recollect.

Mr. Benzine. I am close to my hour, and that is a good stopping point. So we can go off the record and take a 5-minute break.

Thank you.

Mr. Pellegrini. How about 10? Ten okay?

Mr. Benzine. We can do 10.

[Recess.]

[12:04 p.m.]

EXAMINATION

BY MR. PELLEGRINI:

Q Dr. Lipkin, I'm Giancarlo Pellegrini, chief counsel with the minority. Thank you very much for coming in today. We appreciate your time.

A Thank you.

Q All the same guidelines you discussed with my colleague will also apply to our conversation. I'm not a scientist by background. If I mispronounce any terms or names, I appreciate your indulgence, and please correct me however you see fit.

I think first what might make sense is to cover a few of the topics that you have already covered in the first hour of the interview, and I'll just sort of move through these questions sequentially.

You mentioned briefly that you had previously had some teaching positions with various institutions in China, I think in Beijing, Nanjing, and maybe one other one, is that right, Sun Yatsen?

A [Nonverbal response.]

Dr. Lipkin. Yes. I'm sorry.

BY MR. PELLEGRINI:

Q Oh, no problem.

A Yes, yes. I forgot that I have to say. I have to talk. Yes, yes.

Q Did I hear you correctly, and I just want to confirm, that those positions did not include classes or salary or other compensation?

A That is correct.

Q Great. When you were describing for us your broad professional experience, you mentioned a number of different public health events or crises and

viruses that you had had professional involvement in. I just want to read what I understood to be a list of the countries that you mentioned and just see if they sound right to you.

You worked on the MERS outbreak that occurred in Saudi Arabia, correct?

A Yes.

Q As well as Zika which was in Brazil?

A Yes.

Q Lujo, if I'm saying that correctly?

A Lujo.

Q Lujo, thank you.

A L-u-j-o.

Q Got it. I spelled it right but didn't say it right. And that was in South Africa and Zambia?

A Correct.

Q Okay. In India, it was encephalitis, correct?

A Yes.

Q In Israel, it was what we know as tilapia fish?

A Yes.

Q In Norway, it was salmon?

A Yes.

Q Which is deeply concerning for me personally.

And in Mexico, it was -- what was it in Mexico?

A It's a wide range of respiratory viruses.

Q Okay, great.

A There are more countries if you want them all, but --

Q That would be great if you wouldn't mind listing a few of the other countries that you've worked in.

A So we've done work on monkey pox in the Democratic Republic of Congo. We've done work on Borna disease virus in Germany and Austria, Nipah virus in Bangladesh, enteroviruses in Cambodia, the more recent flu pandemic in Mexico and in Argentina, Dengue in Brazil.

I mean, I'm sure I'm leaving things out. I mean, I've been doing this for 35 years, so there are many of these outbreaks.

Q It's hard to estimate, but if we had to try, how many different countries you have either worked in or worked on issues related to. You know, it would certainly be more than 10, it sounds like.

A It's more than 30.

Q More than 30. And I think you're hitting most of the continents here.

A Except Antarctica.

Q Got it. Very few viruses moving around Antarctica.

A Well, people bring them in.

Q I understand and we talked a little bit about that you have developed various professional connections and contacts in China and with members of the Chinese scientific community. Have you also developed professional networks and contacts in some of these other countries that we just spoke about?

A Yes.

Q With respect to your work in China, have you ever received any sort of honorarium or similar type compensation from Chinese Government?

A I have not received financial remuneration, but as noted earlier, in 2016, I received this International Cooperation Award, which is a medal, and I received another

medal in 2020.

Q And those are noted, I think, on your CV and are matters of public knowledge?

A They are.

Q Have you received any sort of financial compensation or honorarium from the Chinese Communist Party?

A No.

Q Okay. Has your work, or have your public comments regarding the origin of COVID, or any related scientific matter at any point, been manipulated or unduly influenced in any sort of way by the Chinese Government or a member of the Chinese Communist Party?

A No.

Q If we could return to exhibit 3, which is email exchange between yourself and Dr. Zhu -- hope I'm saying that correctly --

A It's Dr. Chen, actually.

Q Dr. Chen, thank you.

A So -- so typically what people do, is, they put -- in Mandarin, the first name that you see is all caps and that is the last name. And the second name, which is the first -- which is a modifier, follows that. So he's called Chen Zhu.

Q Great. Thank you. I appreciate it.

If I could direct your attention to the email that is from you that's at the bottom of the page that's stamped 2632, and a few lines down in that email -- and we talked about this previously -- you said, quote, "here is also a high level of confidence that the virus was not" -- and you underlined the word "not" -- "deliberately modified in any laboratory."

Would you mind explaining, and you did a little bit, but maybe just once more for us, what that notion of deliberate modification means for a layperson.

A So the term "gain of function," for example, which means you're changing the structure of a virus or a bacterium, or anything for that matter, so that it is either more infectious, more capable of causing disease, capable of avoiding detection, not being treatable or not being preventable with a vaccine, are examples of where people would modify something so that it would be somehow changing its characteristics.

When this typically happens, what you can see is -- you frequently see some sort of hallmarks. There are various sites within the genome structure which allow you to say, A-Ha, we cut this out and we replaced it with something which changed its properties. That's not absolutely essential when modern molecular biology because you can now use synthetic genomics to produce something de novo that has whatever properties you want.

The more compelling argument for me against that is the fact that we didn't have the insights at that time to design this virus. And when I say "we," I mean, the global scientific community.

So although, you know, there are -- there were concerns early on about this voiced by some people, I didn't have those kinds of -- I didn't have those kinds of doubts because of what I just told you.

Q And if I could ask, the concerns, as best as you can recollect them, that may have been voiced by others at the time, or the accusations, or whatever the right word is, what is your recollection of what that theory was that when you heard it, you said to yourself, that seems very unlikely to me?

A There was a focus around specific sites in the genome structure as it was revealed, you know, beginning of the second week of January when people could look at

it and say, these are sites that we see in other viruses that might make it easier for this virus to infect human cells.

Some people reached the conclusion that this had been deliberately engineered, introduced into this viral genome. That was not the full story nonetheless. There were other components that we didn't even know about that have changed and continue to change and further the adaptation for transmission in humans.

There was also some concern that there was a specific site on the outside of the virus which binds to receptors on the outside of cells and that this might somehow have been engineered, but then people began to say -- people who knew something about coronaviruses said, yes, that's possible that somebody might've deliberately engineered that, but you should be aware that although those hadn't been previously reported in SARS-like viruses, these particular sites are present in other coronaviruses.

And we know that if you have two coronaviruses, one of which is this one which is ultimately designated SARS-CoV-2, and something which is similar which has these sites already there, they can recombine during the process of reproduction of the virus giving you a Frankenstein virus which has new properties.

It doesn't require human intervention for that to occur. It can be facilitated by human intervention. But, again, you would have to know all these other features which contributed to this.

Q And so in this email when you say, there is a high level of confidence that the virus was -- underlined -- not deliberately modified in any laboratory; that, of course, accurately reflected your point of view, certainly at the time that you wrote the email, I presume, right?

A It did.

Q Does that, I think, continue to reflect your general thinking on that issue?

A It does.

Q And so, is it fair to say that when you take in the totality of known scientific evidence to date, with respect to the likely origins of the virus, your view has been consistently, and continues to be, that you have a high level of confidence that the virus was not deliberately modified in a laboratory?

A That is correct.

Q Okay. This email exchange with Dr. Chen and the collaboration that you and he were discussing, had that collaboration worked out at the time, did it seem like a scientifically useful endeavor that was being suggested here?

A I think it would've been.

Q At the time, was there anything about this exchange with Dr. Chen that gave you any kind of ethical pause, or did you have any reason to see anything wrong with this, or did it seem like what would be in the relatively ordinary course a discussion with a scientific colleague?

A It was -- it was a perfectly ordinary conversation.

Q This is a relatively narrow point, but I wanted to ask, it was mentioned previously that Dr. Chen is currently sanctioned by the United States Government. To confirm, you were not aware of that fact, it sounded like, is that correct?

A That is correct.

Q And in addition, you would not have been aware, and you are not aware now, of whatever activities were the proximate cause of the sanctioning of Dr. Chen. Is that correct?

A That is also correct.

Q Among your many educational credentials, you are not an attorney. Is that right?

A That is correct.

Q I'm happy for you. I think that's great.

Would that mean that you are not professionally trained to judge whether a particular set of facts meets a particular legal term of art in terms of legal standards of evidence, whether that's preponderance of evidence, or beyond a reasonable doubt, or any other legal terminology? It would be correct to say that you are not trained by background to engage in those sorts of judgements? Is that right?

A Correct.

Q You described a call from a colleague in, I think, mid-December of 2019 when you were in Giza, and in that call, the colleague, whose name I can't recall -- pardon me, what was the colleague's name?

A Hana, H-a-n-a, Lin, L-i-n.

Q Okay. And in that call, Hana Lin communicated that there may be some sort of virus in Wuhan not previously known?

A No.

Do you want me to clarify that?

Q Yeah, that would be great, please.

A I don't know what to do.

Q Yes.

A So all she told me was that there was some sort of respiratory outbreak. It doesn't necessarily mean that it's a virus. It could be bacterial. And if it's a virus, it doesn't tell me what kind of virus because, remember, that that time of year, you know, December, in that part of the world, everywhere, you've got a lot of respiratory viral infections.

Q I think you said that a call of that kind would not have been unusual for you

to receive.

A That is correct.

Q And sometimes those calls end up panning out, and sometimes they end up being nothing. Is that right?

A Correct.

Q There was a discussion of a voicemail that you received from Dr. Chen the end of December, I think.

A Not Dr. Chen.

Q Dr. Gao?

A Correct.

Q Thank you. You emphasized the importance of -- well, you relayed first that Dr. Gao had emphasized the importance of the confidentiality of that voicemail?

A Correct.

Q You, yourself, have emphasized the importance of the confidentiality of that voicemail?

A Correct.

Q Why might the confidentiality of that voicemail be important from a professional and, frankly, public health perspective?

A From a professional perspective, this is somebody who is very high up in the public health infrastructure of China. He shared information with me that I shared subsequently with people at NIH, and as time went on, with individuals who were writing a history of the pandemic, with the understanding that they would not disclose that that individual said this, but rather, that it emphasized that in the early days of the pandemic, people didn't realize that this was going to be the, quote, "big one," unquote.

SARS in 2003 burned out. MERS burned out. Most of these epidemics burn

out. This one did not. It went global. It was different.

He could not have known that at the time, and I feel it was an honest mistake on his part. My concern is that as one of the only -- to the best of my knowledge, I'm the only person who works in public health and infectious diseases who has received this honor from China -- two different honors from China.

This gives me access to information and insights that nobody else can transmit, to NIH and CDC and other policymakers, including, I would say, people in the Department of Defense and the intelligence community with whom I share these kinds of data over a period of almost 25 years.

And my concern about this making public is that not only will this impact my ability to get information from China, but other people will say, whether it's India or, you know, or Argentina -- doesn't make any difference -- I will not be trusted anymore.

So when I released information, say, for example, about MERS in Saudi Arabia, to the WHO and others, nobody else was able to get this information out. But it was very helpful in steering scientific research and our response. And in those instances the understanding was, I'm giving you this information with the understanding that you're not going to attribute it to me so that I can continue to be helpful.

My role, my whole life career, is dedicated to preventing disease, and sometimes that means I have to, you know, I have to go places where other people don't want to go.

Q And I think to emphasize part of what you said, the value of being able to receive that information is not just for the purpose of having it, but it's for the purpose of doing something constructive with it. Is that right?

A Correct.

Q And that something being assisting whomever it is that's reaching out to you in their response to the situation, correct?

A Correct.

Q Additionally, or separately, working with appropriate public health officials here in the United States --

A Correct.

Q -- so that we can plan?

A Correct.

Q Right. I think there was a brief mention of the extent to which Dr. Gao either was or was not bound by Chinese law to not tell you the information that he told you in the voicemail. I just want to confirm, you would not have any personal knowledge of Chinese laws or regulations that would've applied to Dr. Gao at the time, right?

A That is correct.

Q With respect to your trip to China in January of 2020, we discussed how you had certain conversations with, for example, Dr. Fauci, another individual at the CDC, where you went over certain questions and attributes of what may turn out to be a virus, that were of interest to them.

Would those types of conversations, in your experience, have been abnormal, out of the ordinary, or would they have been -- struck you as being in the ordinary course of your work on an emerging virus of this kind?

A I'd say it was customary.

Q And why -- this may seem self-evident for you, but for our benefit, why would it be important for officials at CDC for example, NIH, to have the information that they asked you to look into, such as an incubation period, fatality rates, transmissibility? Why might it be important for them to know that?

A I'll give you an example. This is something that we began only

really -- realize, you know, as the pandemic evolved. The major reason that this virus is so transmissible in the general population is because prior to the time that people have symptoms that are clearly associated with this virus, they are infectious. This presymptomatic period is where most of the transmission occurs.

So it's very important to know when people are infectious. Similarly, after they've recovered from the acute infection, are they still infectious?

When we did work in SARS in 2003, we found that the virus continued to be present in fecal material long after people had recovered. This is one of the reasons, for example, that we're doing these sewer studies, right, to try to track transmission within the community and follow what the levels are. So there are many things that we needed to know.

We also needed to know what the manifestations of infection were, how would we, for example, clinically distinguish between somebody who has influenza versus this new virus.

And as time went on, we began to learn, for example, the loss of smell, headaches, some of these weird skin conditions, which were associated with the virus attacking blood vessels. None of this was known at that point.

So it's always important to get as much information as you can, as rapidly as you can. It allows you to not only find ways to prevent contagion and spread within a community, but, in addition, to think about drugs that might be used to mitigate the degree of damage and mortality.

Is it similar to other viral infections of which we know that have been treated with this or that particular type of remedy.

Q And so, if I understand correctly, each of those variables are more or less vital for public health officials as they try to plan for the coming crisis?

A It's vital for public health officials, yes.

Q And so, in that sense, officials at NIH or CDC would be doing their jobs by asking you what you know about those sorts of variables?

A That is correct.

Mr. Pellegrini. Can we go off the record for a moment?

[Discussion off the record.]

Mr. Pellegrini. We can go back on the record.

I think that's enough from the minority for this round of questioning, and we can take a 5-minute break.

Mr. Babbitt. Sure.

Mr. Benzine. Off the record.

[1:04 p.m.]

Mr. Benzine. We can go back on the record.

BY MR. BENZINE:

Q I want to start real quick going back to the conversation that you had with Dr. Gao on December 31st. I'm going to read you a passage from Jeremy Farrar's book, Spike.

A May I clarify something?

Q Yes.

A I did not have a conversation with him --

Q Or the voicemail.

A -- I received a voicemail, yeah.

Q Go back on the voicemail that Dr. Gao left you. Very soon George told me the world would be hearing about a cluster of cases of a new pneumonia from Wuhan in China. The cases had already been reported to the World Health Organization. It was essentially a courtesy call from one scientist to another. I remember him telling me that we wouldn't need to worry because it wasn't severe acute respiratory syndrome, or SARS, and that we must keep in touch.

Is that similar to the conversation that he had with you -- or similar to the voicemail that he left with you?

A I think I received a little more information than did Jeremy Farrar.

Q Okay. Moving on to when the sequence first became available, do you recall when you were first made aware of the sequence of COVID-19?

A It was released by people affiliated with Eddie Holmes.

Q On around January 11th --

A Correct.

Q -- 2020? Does that sound correct?

And you just testified Dr. Holmes was the one that made it public?

A Well, I don't know that he made it public. He was instrumental in it becoming public.

Q Okay. It was Dr. Zhang Yongzhen's consortium lab that I believe Dr. Holmes released it on behalf of. Does that sound right to you?

A Yes.

Q And the next day, Dr. Yongzhen's lab was shut down for recertification. Do you know what that means?

Can you say?

A Oh, I'm sorry. No, I don't. Sorry.

Q Can you explain the importance of knowing the sequence of a virus?

A The importance of knowing the sequence of a virus is that you can figure out how to address it. So there are certain viruses for which certain drugs will work. If you want to design a vaccine, you need to know the sequence of the virus. If you want to make monochromal antibodies, you have to have the sequence of the virus.

There are some drugs which are already approved for certain use which you would know would be effective with that virus.

I can give you an example from my work in outbreaks where -- you know, if you wish.

Q Uh-huh, go ahead.

A So when Lujo, named after, you know, two institutions, you know, two areas, Lusaka and Johannesburg, where this hemorrhagic fever virus was discovered, there was a woman who became infected. She was airlifted from Lusaka to Johannesburg. She died in Johannesburg.

The paramedic who retrieved her in the transport and the nurse who took care of her at the other end also died, so three people all died of this initial outbreak.

I characterized the virus, told people what it was, and in collaboration with people who knew something about drugs that might be useful for related viruses, we gave a drug to the fourth person who was infected, and she was the sole survivor. So it was 80 percent mortality dropped to zero with knowledge of the virus.

Q Can the sequence tell you specific characteristics of the virus, asymptomatic spread, or whether or not it's respiratory, or anything?

A To an extent.

Q Can you elaborate a little bit?

A So if you see a virus which looks like an influenza virus, it's a respiratory virus. If you see a virus that's like Marburg or Ebola, you know that it's blood or sex -- blood borne or sexually transmitted.

So to some extent, you can get -- and enteric viruses by definition are taken, you know, orally. So some viruses, yes, this can be helpful.

Q And you touched on this a little bit both in the majority's last hour and the minority's last hour. Are there features in the COVID-19 sequence that are unique to SARS-like coronaviruses?

A Yes. And there are features that are unique to SARS-CoV-2.

Q Can you --

A As far as we know.

Q Can you explain a little bit of both?

A There are -- and this is, you know, work that's ongoing, so we learn more about this all the time -- but for viruses to get into cells and parasitize them, they have to attach, and their ability to attach is a function of what we call receptor binding proteins

that are present.

So we were able to identify that this was a virus that had the ability to attach to certain cell receptors that we know are present. And in addition, there were some other changes which would be associated with its ability to be processed more rapidly inside the cells so they could uncoat, release their genetic information, and reproduce.

Q Is -- and pardon me, I, too, am not a scientist -- is one of those that you just explained the furin cleavage site?

A That is one of them.

Q Is the furin cleavage site kind of like a pivotal part of the virus for transmission or infection?

A It is -- it is an important portion of the virus.

Q And it hasn't been seen before in SARS-like coronaviruses, correct?

A It has been seen -- well, again, the challenge, of course, is that we don't have a complete view of all the coronaviruses circulating in the world. So amongst the SARS-like viruses, and there are many coronaviruses, that was the first time that we'd seen that furin cleavage type.

Q Okay. And could you tell that the furin cleavage site was in there from the genomic sequence?

A Yes.

Q I would like to introduce exhibit 5. This is a page from Dr. Farrar's book, titled, Spike, and -- I'll wait till it gets handed out.

[Lipkin Exhibit No. 5.

Was marked for identification.]

Mr. Babbitt. Certainly, just for clarity, was exhibit 4 the quote from Spike?

Mr. Benzine. I just read it into the record.

Mr. Babbitt. Okay, great.

BY MR. BENZINE:

Q Underneath the little coronavirus bullets on the right hand of the page, it says, Eddie -- he's referencing Dr. Holmes -- has screenshots taken from social media in China about the coronavirus sequence. They suggest the full genome was known by a genomics company in China by the 27th of December 2019. It was reported to both China's CDC and the hospital who provided the patient sample on the 27th and 28th of December.

Prior to reading this, did you have any awareness that the sequence might've been with the Chinese CDC by December 27th?

A Well, I haven't read this book, so this is the first time I'm reading this passage. So if -- based on what he's saying, if this is true, then it sounds like it was known prior to that point.

Q Did -- in any of your conversations with Dr. Holmes in December 2019, January 2020, did he share this information with you?

A No.

Q Not while you were drafting proximate origin, he didn't share that the sequence might've been available earlier?

A Not to my recollection, no.

Q Are -- so you said earlier that the sequence leads to therapeutics and vaccines and treatments. Are those 2 weeks between December 27th and January 11th important?

A Well, in the earliest days of an outbreak, and you're trying to develop diagnostics and therapeutics and ways to contain, you know, any -- any lag is important.

Q So by not sharing the sequence when, according to Dr. Holmes they had the

sequence, there was a potential lag in our ability to develop treatments?

A Yes.

Q Thank you. Shifting a little bit into how novel viruses may appear, would you agree that historically, there have been two viable pathways for a viral outbreak, either zoonotic or out of a laboratory or research-related accident?

A So I wouldn't split it quite that way.

Q Okay. How would you split it?

A So we wind up talking about for reasons I don't understand, laterally, this is zoonotic. And that's a distinction that doesn't make any sense to me.

All the zoonotic -- all zoonosis means to me is that it starts in an animal and moves into a human. It doesn't tell you anything about the intervening steps. And I would say at least three-quarters of all emerging infectious diseases begin in wild animals. So I would not say that the fact that it was a zoonotic disease tells me about whether or not there could've been some intermediate steps.

Q So you would split it as a pathway from directly from nature, directly from a wild animal to the human, versus a detour from nature into a lab into a human?

A I wouldn't say necessarily into a lab. It doesn't have to be through a lab. So what I like to refer to is research-related. Is it research-related, or is it some other mode of entry. And when we talk about modes of entry -- and neither one reflects well on the culture in which this occurs -- a wild animal market where you have animals that are in cages one above one another who have been brought in, and have the potential to exchange viruses and to have a recombination event, that is nonetheless still a zoonosis. It just passed through another animal, an intermediate.

That can also happen in a laboratory, and it can also happen when you're capturing animals in the wild. So it's very important to understand how specific

outbreaks emerge so that you can find out what you can do to mitigate it.

So, for example, if we had been able to pursue the kind of field work that I wanted to do at the time that I wanted to do it, we might've found a reservoir for this virus in some cave someplace or wherever, and we would then say, we have to monitor this area, and, you can't harvest animals from this area.

Similarly, if we had found it specifically in animals in a market, we would've been able to say something about that too.

And researchers who go into caves and collect animals, you know, are also at risk just like somebody that is hunting these animals for food. It's the same kind of exposure.

Q So would you consider -- I'll use research-related -- would you consider a researcher going into a cave, picking up a virus in the cave from poor PPE use, bringing it back to a lab, a research-related incident?

A I would.

Q Okay.

A And I would also consider somebody spelunking for recreation and bringing it back. Or, as happened with Marburg, there were people who were mining for gold in Angola who became infected with Marburg virus. And they were not, you know, they were not collecting specimens, per se, but they inhaled virus and became infected.

Q Is it important to investigate both the possible pathways?

A Yes.

Q Moving on, specific questions regarding EcoHealth Alliance and Dr. Peter Daszak. Have you ever worked with EcoHealth before either academically or professionally in --

A Yes.

Q -- research?

Can you explain some of that?

A There have been a number of ways in which I have worked with EcoHealth. When I was asked by the government of Saudi Arabia to come and identify the origins of MERS, because I don't do that kind of field work, and it's really not a great -- frankly, it's -- I'll just leave it there -- I asked Daszak to detail to me two people who had expertise in field collections who came with me to Saudi Arabia to collect specimens. That's one example.

One of the people who was at EcoHealth Alliance who was a -- was a post doctoral fellow with me.

I've also had resources from EcoHealth Alliance because we were providing them with all the sequencing that they were doing, with the exception of the coronaviruses from China that we sequenced at WIV. Those samples never came to us.

We've also done work with them on Nipah in Bangladesh, you know, in various parts of South America, Central America, and Asia. So that was under the auspices of a program called USAID Predict.

So we provided all the sequence analysis, we taught people how to do PCR, and we ran a variety of in-country training missions as well.

Q Does EcoHealth or Dr. Daszak hold any permanent or honorary positions or relationships with Columbia?

A So I'm not -- I'm not aware of the nature of what he does, though I have been told recently that he has a position in the downtown campus. So Columbia has two campuses -- the medical school which is up at the top of Manhattan Island, and the lower campus, which is down there in the 100th to the 116th. So he has a position there.

Q Have you ever received compensation directly from EcoHealth not related to a grant?

A No.

Well, let me take that back. They honored me one year with a pair of cuff links which I have no interest in, and I don't know where they are.

Q Thank you. And you touched on this a little bit, you're aware of EcoHealth's relationship with the Wuhan Institute of Virology?

A Yes.

Q Do you know more than what you just shared about the sequence data?

A I -- I didn't understand. What are you asking?

Q What is your understanding of their relationship with the Wuhan Institute of Virology, or does EcoHealth share any of that information with you or Columbia University?

A No.

Q So the Wuhan Institute of Virology has mainland China's first biosafety level 4 laboratory. Can you quickly run through what the biosafety levels are and what kind of viruses or work can be done at each level?

A I'm not sure I can give it to you in black and white terms, but there are series of levels of bio containment. The highest level is actually even beyond 4, that's smallpox, which is only present in two laboratories, one in Russia and one in Atlanta, the CDC.

Below that, you have the BSL-4 agents which include things like Lassa fever, Ebola, Marburg, what are considered to be highly transmissible, potentially lethal infections.

Those BSL-4 laboratories, there's a fairly clear and coherent universal standard that everybody applies. You monitor what comes in, you monitor what goes out, you

monitor the status of people in that laboratory. And everything is very closely tracked, and people have an external air supply that they use as they wander around through, you know, doing whatever it is that they're doing.

A BSL-3 laboratory houses pathogens that are less infectious, or less lethal. You don't have to have an external air source. People use N-95 masks or breathing apparatus that they carry around with them. They're designed to vent to the outside of the building when people work in biosafety cabinets.

And depending on where you are in the world, the level of biosecurity for BSL-3 will vary. So the standards in the U.S., at the major institutions of which I'm aware, are higher than they are in some other parts of the world.

And I have written a paper on this topic when gain of function was being discussed around the, you know, working with highly pathogenic Avian flu, in which I made a call for an international standard for work at BSL-3.

To the best of my knowledge, this has not had a big impact except, you know, the U.S. and Europe.

Q Does -- in your experience, are China's standards for BSL-3 less than the United States' and Europe's?

A I couldn't say because it's -- China has a very regional approach to this. When I first began working in China and helping set up the Institut Pasteur and the Guangzhou Institute of Biomedicine and Health, the communities were very much against having a BSL-3 laboratory. So there was a lot of pushback locally on that topic, and I don't yet -- I don't know right now what the standards are.

Q You touched on this earlier. Have you ever collaborated professionally with the Wuhan Institute of Virology?

A No.

Q Have you ever been to the Wuhan -- you said --

A I have been there. I didn't actually go inside the BSL-4.

Q Have you ever worked with Dr. Shi Zhengli?

A No.

Q Around autumn of 2019, some things happened in Wuhan that we know from a State Department fact sheet, which I'll enter in a minute.

Researchers at the Wuhan Institute became sick with COVID-like symptoms; the Wuhan Institute changed from a civilian to military control; the Wuhan Institute's ventilation system was improved; and the Wuhan Institute deleted their viral sequence database.

Are you -- were you aware at the time of any of these things happening, or were you aware prior to just now?

A I don't know anything about any of that.

Q Would an outbreak of research -- would an outbreak of a virus inside a lab of research staff be a data point towards a potential research-related incident?

A Yes.

Q I want to introduce --

A Let me -- let me just qualify that by saying, people do get sick for other reasons, so it has to be investigated. So it would be consistent but not diagnostic of.

Q I'd like to introduce exhibit 7, which is the fact sheet produced by the United States Department of State. It was published January 15th, 2021.

A Thank you.

[Lipkin Exhibit No. 7.

Was marked for identification.]

BY MR. BENZINE:

Q On page 2, next to number 1, it says, illnesses inside the Wuhan Institute of Virology, and then the first bullet says, the U.S. Government has reason to believe that several researchers inside the Wuhan Institute of Virology became sick in autumn 2019, before the first identified case of the outbreak, with symptoms consistent with both COVID-19 and common seasonal illness.

So this is what you're saying, that that needed to be -- that should be investigated to determine if it was COVID-19 or if it was simple seasonal flu or --

A Or something else.

Q Yeah, or something else.

Were you aware of this fact sheet before just now?

A I have not seen this fact sheet before.

Q The next exhibit is exhibit 8. It is an email chain between yourself and Donald McNeil, and it's Bates numbered LIP-001817 through LIP-001820.

[Lipkin Exhibit No. 8.

Was marked for identification.]

BY MR. BENZINE:

Q And I'd like to draw your attention to the page numbered 1817. At the bottom you write, I can't exclude the possibility that there was an inadvertent recombination in the lab. However, it's a BSL-4, and everything and everyone going in and out is tightly monitored. Furthermore if SARS-CoV-2 first appeared in a lab, we would expect an outbreak in lab personnel and/or their families. I'm happy to talk with you tomorrow.

So researchers in a lab becoming sick would be consistent with a potential research or -- a research-related incident?

A Related incident, yes.

Q This email was May 10, 2021. Were you aware at that point that they were not operating in a BSL-4, they were operating in a BSL-2?

A I was not, and that's why I said here, However, it's a BSL-4.

Q Does the fact that it's a BSL-2 change your assessment at all?

A Well, I was concerned that -- not so much that somebody might be deliberately trying to create something, but that there could be a research-related incident if materials were not handled in what I consider to be a safe fashion.

Q I want to flip next to exhibit 9.

Mr. Babbitt. Sorry, Mitch, just before you move on --

Mr. Benzine. Yeah.

Mr. Babbitt. -- is it -- I think you had said, does the fact that it is a BSL-2 change anything? Is it -- I'm not sure -- is it known that this was a BSL-2, or are there different labs? Are we getting to that?

Mr. Benzine. We can get to it.

Mr. Babbitt. Okay.

BY MR. BENZINE:

Q So this is a unclassified cable from the U.S. Department of State from January 19, 2018, titled, "China Opens First Biosafety Level 4 Laboratory." Were you aware of this document before seeing it just now?

A I was not aware of this document.

Q The cable discusses particularly the Wuhan Institute of Virology and, in the first paragraph, states that the Wuhan Institute of Virology had a shortage of highly trained technicians and investigators required to safely operate a BSL-4 laboratory and a lack of clarity in related Chinese Government policies and guidelines. What does that sound like to you?

A Well, all I can do is, you know, is recap what you've just read to me. But I don't know how many technicians they had or how they were trained or their lack of clarity or -- evidence of clarity.

Q Is having highly trained technicians an important aspect of biosafety, especially in a BSL-4?

A It is.

Q Was, to your knowledge and recollection, and what you've learned over the past 3 years, was the Wuhan Institute of Virology working with novel SARS-like coronaviruses?

A They were.

Q Do you remember what biosafety level they were working at?

A I don't know what they were doing at BSL-4, BSL-2. The only thing I knew of was that there was some work that was being done with coronaviruses that in our laboratory would've been handled at BSL-3.

Q Okay. I would like to move to exhibit 10, and this is an email from yourself to David Quammen, Bates numbered LIP-002128.

A Thank you.

[Lipkin Exhibit No. 10.

Was marked for identification.]

BY MR. BENZINE:

Q And in the email you write, I have a sense that the origins story is not going to fade gently into the background. My view hasn't changed. I still think that wild animal markets are the most likely source, particularly given the reports of 40,000 animals in such markets in Wuhan.

And then at the bottom you say, However, as I noted before, it was disconcerting

to learn that work we only pursue in biocontainment with close regulatory oversight was being done at BSL-2 in Wuhan. Such work can lead to inadvertent exposures of laboratory personnel.

Is that what you were just recounting to me, that it was work that would've been done at BSL-3, but they were doing it at BSL-2?

A Yes, that's correct.

[Lipkin Exhibit No. 11.

Was marked for identification.]

BY MR. BENZINE:

Q Next, moving on to exhibit 11, and this is an email chain between you and Laurie Garrett, dated October 30, 2022, and Bates numbered LIP-002619 through LIP-002626. On page marked 2619, you write, "The Wuhan Institute of Virology has worked with bat samples and cultured bat viruses at BSL-2. This is a matter of published record -- materials and methods in two papers. This is unacceptable."

Do you stand by that statement?

A I do.

Q Why is working with bat samples and cultured bat viruses at BSL-2 unacceptable in your view?

A Because there's this potential when you recover viruses in the wild, if you don't know what you're handling, that you might inadvertently wind up growing something which has potential properties that could be damaging to the personnel and to people outside of the laboratory.

Q So taking these three facts into account, that there was a potential of sick researchers inside the Wuhan Institute of Virology in the fall of 2019, and they were operating at a poor biosafety, with, according to the State Department, poorly trained

researchers, is it possible that a researcher contracted COVID-19 as a research-related incident?

A If COVID-19 -- if SARS-CoV-2 were present in that laboratory, but that would have to be present in that laboratory for this to occur.

Q How would we figure out if it was present in the laboratory?

A The only way to know would be to go back and to have access to the blood samples so that you could see whether or not prior to the date that it was first detected outside, people had been exposed. This was one of the things that I was pushing to do when I went in January of 2020.

Q To your knowledge, has anyone received blood samples or any other viral samples from the Wuhan Institute of Virology that would illuminate this discussion?

A I don't think that virus samples from the Wuhan Institute of Virology will be helpful at this point because, you know, you would never know, you know, when they were isolated or whether they were contaminated deliberately or inadvertently.

But I think if you had timed blood samples, you would be able to say, yes, these individuals who became ill, if there were individuals who did become ill prior to the recognition of SARS-CoV-2, if those samples that were taken before the first recognition of the virus were positive for SARS-CoV-2, you would know that they had been present at that point.

Q Is there anyone in the United States that would be able to gain access to those samples, or is it reliant upon cooperation from China?

A Well, I think that if anybody could've done it, it would've been me, and that's why I've tried to maintain my relationships there, and that's why I pushed, you know, Minister Chen Zhu to see whether or not I could help in that regard.

Q And to be clear for the record, you asked for those samples, and they did not

give you access?

A When I met with -- let me clarify that. So when I met with Chen Zhu and Gao Fu in January of 2020 -- Gao Fu being George Gao, sorry -- I talked with them about the ways in which we could use serology to address, you know, the onset, date the outbreak more precisely, and we were unable to proceed.

Now, I don't know why we were unable to proceed, but we were unable to ask those sorts of questions.

Q Okay. Thank you.

I want to switch to -- you touched on gain-of-function research a little bit before, and it kind of has a moving definition. The NIH's standard definition is a type of research that modifies a biological agent so that it confers new or enhanced activity to that agent. Do you agree with that definition?

A Yes.

Q In your experience has gain-of-function research created life-saving vaccines or therapeutics?

A Yes. And it has done, even more importantly, it's given us insights into how infectious agents cause disease so we can find the Achilles, you know, the Achilles ankle and attack it with the appropriate drugs.

[1:37 p.m.]

BY MR. BENZINE:

Q Should it be conducted at appropriate biosafety levels and with the appropriate oversight?

A Yes.

Q I'm going to read an experiment to you from the 5th-year progress report from EcoHealth that was conducted at the Wuhan Institute of Virology. They said: "In year 5, we continued in vivo infection experiments of diverse bat SARS-related coronaviruses on transgenic mice expressing human ACE2. Mice were infected with four strains of SARS-related coronaviruses with different spike proteins, including full-length recombinant virus of SARS-related Wuhan Institute of Virology 1 and three chimeric viruses with the backbone of Wuhan Institute of Virology 1 and the spike proteins from three other bat coronaviruses.

"All of the four viruses caused lethal infection in human ACE2 transgenic mice, but the mortality rate varied among four groups. Fourteen days post-infection, five out of the seven mice infected with Wuhan Institute of Virology 1 remained alive, while only two out of eight mice infected with one of the full-length chimera survived."

Does that sound like a gain-of-function experiment to you?

A It does.

Mr. Benzine. NIH reported this experiment to Congress through a letter to then ranking member of the Committee on Oversight and Reform, James Comer, on October 20, 2021, and I would like to introduce that letter as exhibit 12.

[Lipkin Exhibit No. 12.

Was marked for identification.

BY MR. BENZINE:

Q In the fourth paragraph down, about halfway -- first, have you seen this letter prior to me showing it to you just now?

A I have not. Do you want me to read it?

Q I can read you the parts that I have questions about.

A Okay.

Q So in the fourth paragraph, about halfway through, there's a sentence that starts: "In this limited experiment." And it says: "In this limited experiment, laboratory mice infected with the SHC014 WIV1 bat coronavirus became sicker than those infected with the WIV1 bat coronavirus."

It's explaining the same experiment that I just read to you in the EcoHealth year 5 progress report.

Do you stand by that as a gain-of-function experiment?

A You know, I think it really would be helpful for me to have an opportunity to read this whole thing.

Q Sure.

A Yeah. Otherwise I won't know what I'm talking about.

[Witness reviewed the document.]

Dr. Lipkin. Okay. What is your question?

BY MR. BENZINE:

Q Is an experiment in which laboratory mice where there's the same backbone and the chimeric virus makes the mice sicker and is more lethal, is that experiment gain-of-function?

A It could be gain-of-function. You know, sometimes what you're doing, in fact, is diminishing the ability of a virus to cause disease. But I would refer to it as, you know, genetic modification of a virus. And anytime you do genetic modification of a

virus, there is concern that you can either add function or diminish function. Obviously, forms of both can be a potential problem.

Mr. Babbitt. Sorry, Mr. Benzine. Are you defining gain-of-function to mean anything that results in a gain-of-function or anything that is intended to result in a gain-of-function?

Mr. Benzine. Anything that results in a gain-of-function.

Mr. Babbitt. Okay.

Mr. Benzine. In the NIH definition, intent isn't there.

Mr. Babbitt. Okay.

BY MR. BENZINE:

Q In this letter, Dr. Tabak states that the bat coronaviruses studied under the EcoHealth Alliance grant could not have been the source of SARS-CoV-2 in the COVID-19 pandemic.

You testified earlier that you've received Federal grants before. Did any of those grants involve collecting and sequencing the viruses?

A Yes.

Q What about publishing the viral sequences or the results of that research?

A We -- you know, I can't -- I have some junior people who work with me as well. Our policy is to publish everything that we study, so everything where I am involved is published.

Q Do you know of any researchers that don't publish everything they sequence?

A Yes.

Q So it is possible that EcoHealth was studying a virus that they did not publish?

A Yes, that is possible, but I'm not saying that that's true.

Q No.

A And the other thing that I would emphasize is that EcoHealth Alliance does not do bench work. So they subcontract that out to other people. In this case, as I said, they subcontracted to us all of their sequencing and presumably their work in China with bat viruses as we've done with WIV.

Mr. Babbitt. Sorry. Dr. Lipkin, to be clear, when you talked about in this case they subcontract work to you, what are you talking about?

Dr. Lipkin. I'm saying, as I mentioned earlier, we've received funding for them under USAID and NSF and NIH to sequence viruses.

BY MR. BENZINE:

Q But not this specific experiment, correct?

A We are not involved in any way with WIV --

Mr. Babbitt. You can't just shake your head yes.

Dr. Lipkin. Oh, I'm sorry. We are not involved in any way with research at WIV.

BY MR. BENZINE:

Q So knowing that some researchers do not publish every virus that they sequence, is it possible NIH could make the unequivocal statement that no EcoHealth viruses were involved in the COVID-19 pandemic?

A I don't know how to answer that question, quite honestly, because I don't -- you know, when I say some people -- when you sequence a virus, it's not like people are eager to publish that per se. At a minimum, what you should do is you should place it into a genetic repository where people can access the data and see that it has been found before and where it was found and what animal species it infected.

What EcoHealth Alliance does with WIV is really not known to me. I've never

been inside their BSL-4, and I don't review their work. So I don't know what viruses they've isolated or sequenced.

Q Okay. In your experience with Federal grants, if a grant is denied by the Federal Government, are there other avenues for that organization to receive funding?

A Yes. There is -- you know, when you're talking about the Federal Government, you can get funding through NIH, Department of Defense, USAID, CIA, DOD, Veterans Affairs, and sometimes, as well as philanthropy. So there are other sources, but people tend to prefer to go with NIH.

Q So the fact that a grant was denied by NIH or DARPA or DOD or anybody else does not mean that the work was not performed?

A That's correct.

Q In your experience, is it common for organizations to begin some of the work proposed prior to receiving funding?

A That's fairly common.

Q Are you aware of the term "knowledge capital"?

A No.

Q It means the intangible value of an organization made up of its knowledge, relationships, learned techniques, procedures, or innovations, so pretty much that me, if I were to work with you, I would gain your knowledge in my work via you teaching me.

In your experience in grants and working with subcontracts and other labs around the world, is it common for the more experienced organization to teach the less experienced organization innovations and tactics and procedures?

A That's common.

Q All right. Thank you.

Going to the World Health Organization, have you held any positions, honorary or

otherwise, within the WHO?

A I have.

Q What were they -- are they?

A I had -- I ran for several years the Center for Emerging and Zoonotic Diseases, which was located at Columbia. It was a collaborating center.

I'm a member of the Global Outbreak Alert Response Network.

At one point, I chaired, you know, a committee that was associated with trying to develop diagnostics. And I have done unofficial consulting for them, you know, as I mentioned earlier, during SARS and MERS, and so on.

Q From January 14, 2021, through February 10, 2021, they sent a team into China to investigate the origins of COVID-19.

Are you aware of that investigation?

A I am aware.

Q Were you invited to join that investigation?

A I was not.

Q Have you read the corresponding report?

A I have.

Q What are your thoughts on it?

A I thought it was incomplete.

Q How so?

A I think that they could have -- I think they should have tried to report some of the things that we've been reading recently about the analysis, for example, of the Wuhan market, which really has just been published, you know, in the past 48 hours, because those samples were available then. And that's a long time ago.

Q The team was comprised of 17 international scientists and 17 Chinese

scientists. There is only one American. It was Dr. Daszak of EcoHealth Alliance.

Do you think Dr. Daszak has conflicts of interest regarding the search for origins of COVID-19?

A I do.

Q Why?

A Because he was -- because he had ran an active research program at WIV.

Q Those investigators after the fact said they were not given access to raw lab data, lab safety protocols, personnel sick logs, experiment logs, viral databases, or laboratory animal breeding logs.

Do you think that data and access would have been important to understanding the origins of COVID-19?

A It could have been.

Mr. Benzine. All right. I'm at a good stopping point, so we can take our 5-minute break and shift over to questions.

So we can go off the record.

[Discussion off the record.]

Mr. Pellegrini. All right. I think we can go back on the record.

Mr. Benzine. For clarity in the record, majority exhibits 4 and 6 were not introduced, but we will keep the same numbering pattern going forward.

Mr. Pellegrini. Great.

I am going to turn it over to my colleague, Miles Lichtman, for a few questions.

Mr. Lichtman. Thank you.

BY MR. LICHTMAN:

Q Dr. Lipkin, I would like to revisit a line of inquiry that my colleague was pursuing regarding reports of researchers at Wuhan Institute of Virology falling ill in the

fall of 2019.

I would like to enter into the record a document titled "Updated Assessment on COVID-19 Origins" that was published by the Office of the Director of Intelligence and the National Intelligence Council.

Let's mark this document as exhibit A.

[Lipkin Exhibit No. A.

Was marked for identification.]

BY MR. LICHTMAN:

Q On page 8 of this document, there's a box of text in the upper right-hand corner titled "WIV Illnesses in Fall 2019 Not Diagnostic." The text reads, quote, "The intelligence community assesses that information indicating that several Wuhan Institute of Virology researchers reported symptoms consistent with COVID-19 in autumn 2019 is not diagnostic of the pandemic's origins. Even if confirmed, hospital admission alone would not be diagnostic of COVID-19 infection."

Dr. Lipkin, is this correct?

A Yes.

Q Shifting gears, I'd like to direct your attention now to an email that you sent on May 25, 2021, to Maureen Miller. This email can be found on the page marked Bates number 922.

Let's mark this document as exhibit B.

[Lipkin Exhibit No. B.

Was marked for identification.]

BY MR. LICHTMAN:

Q Dr. Lipkin, do you recall this email?

A I have to look at it to familiarize myself with it.

Q Take your time.

A But I do know, however, Maureen Miller.

Q Great. In this email you write, quote, "I do have questions about the wisdom of working with SARS-like coronaviruses at BSL-2," end quote.

It appears that you are expressing concern over the possibility of research-related incidents occurring in laboratories with biosafety level 2 designations. Is that correct?

A Let me just read this.

Well, this is -- if you're asking whether or not I wrote this, I did.

Q And in writing this, were you expressing concern over the possibility of research-related incidents occurring in laboratories with biosafety level 2 designations?

A I was.

Q Could you elaborate on your concerns with research involving SARS-like coronavirus taking place in BSL-2 labs?

A BSL-2 laboratories are not tightly regulated. It is the lowest level, really, of bio containment. And there's a potential if you're either working with animals, live animals, or extracts of live animals and you're not using appropriate bio containment, that someone can become infected.

Q All right.

A So -- that's it, yeah.

Q Is there anything you would like to add further?

A Not really.

Q Your answer suggests that there may be numerous ways in which a research-related incident could occur inadvertently, particularly when research is taking place in facilities without the appropriate level of bio containment. Is that correct?

A That is correct.

Q Could you provide a few examples of the kinds of research-related incidents that could occur under these kinds of circumstances?

A In the process of bringing infected animals into a research facility, whether for -- I will give you an example from work we've done with rats in New York. They have bacteria with antibiotic resistance profiles that would interfere with your ability to treat an infection. You could become infected as a result of exposure to those antibiotic-resistant microbes.

You could bring in -- for example, if you were working, as I did at one point with colleagues in Colorado, with hantaviruses. And hantaviruses can be present in the urine, and if you walk into a cave where there are these animals and you don't have appropriate bio containment, you could inhale hantavirus and become infected.

So all work with animals that potentially contain harmful bacteria or viruses should be done with appropriate precautions.

Q And just to confirm, the examples you just described for us you would classify as research-related incidents?

A If you became sick as a result of those contexts, that would be a research-related incident, irrespective of whether or not it occurred inside of a laboratory or outside during a field collection.

Q Okay. And regardless of whether SARS-CoV-2 emerged naturally or from a research-related incident, is it important to raise oversight and safety standards for gain-of-function research domestically and internationally?

A It is.

Q And regardless of whether SARS-CoV-2 emerged naturally or from a research-related incident, is it important to prioritize efforts to prevent, detect, and control zoonotic pathogens and diseases?

A It is.

Mr. Lichtman. I will turn it back to Giancarlo.

Mr. Pellegrini. Thank you.

BY MR. PELLEGRINI:

Q Dr. Lipkin, I think we will go over a few aspects of the previous hour and revisit some of those questions and answers.

Towards the beginning of that previous hour, I think with respect to what was exhibit 4, which was an excerpt -- which would not be in front of you. I think it was read to you. It was an excerpt of Dr. Farrar's book.

There was a question to the effect of, Did you receive more information than Dr. Farrar received? And I think your answer was something to the effect of, Yes, I think I received more information than Dr. Farrar.

I just want to clarify, would you have firsthand knowledge of all the information or any of the information that Dr. Farrar is receiving directly about coronavirus?

A No. What I thought I was addressing was whether or not I had received more information than what was referenced in the text of Jeremy Farrar's book.

Q Right.

A I think that was the question that was posed.

Q And was your answer with respect to the voicemail that you had received towards the end of December?

A Correct.

Q Okay. Great.

We also touched on the significance of the -- I might not pronounce this correctly -- the furin cleavage site. A zooming out question on that, which is, how many coronaviruses are there?

A Thousands.

Q Do we know precisely how many there are? Do you think we know each existing coronavirus? Are we aware of each one?

A No, we don't.

Q How many could there be in theory?

A So several years ago -- I'm sorry, this is not going to be very crisp -- we tried to make an estimate of the number of unknown viruses of mammals. And we did this by looking in one small geographic area, one species, figuring out how many viruses we could find and then extrapolating to all known species of mammals. And we put the lower bound of number of unknown viruses in mammals at 320,000.

Q Okay. Is there an extent to which it would be difficult, because the whole universe of viruses and perhaps coronavirus is not presently known, that there would be a limit to the extent to which you could extrapolate some component of a known virus, such as a furin cleavage site, and its broader significance for its relationship to the rest of the coronavirus world?

A We do not yet have the tools to be able to say, based on sequence alone, how a virus is going to behave, if that's your question.

Q I think maybe there has been some discussion of -- I'm paraphrasing to the utmost here, but I think the gist is there's a furin cleavage site present here that has not been previously observed in, I guess, similar coronaviruses?

A SARS-like coronavirus.

Q SARS-like coronaviruses and, therefore --

A But --

Q Yeah.

A But it has been reported in other coronaviruses.

Q Could you expand on that a little bit?

A There are, as I said, thousands of coronaviruses. There are coronaviruses where there are these furin cleavage sites. And if you have animals in close proximity, whatever the context, you have the ability of these viruses to recombine. This happens all the time.

This is, for example, why every year, we have to change the formulations for influenza because viruses re-assort and shuffle their genetic information, and those that are the most fit are the ones that come to the fore.

Q Thank you.

The exhibit 5, which I think you do have with you, it's an excerpt from the book as well --

A Hold on a second. Let me find it.

Q Yeah, of course.

A Got it.

Q There's a discussion with respect to that middle paragraph that involves Eddie taking screen shots. And maybe what I will do is I will read that paragraph out loud so that we refresh our recollections.

"Eddie," which is Dr. Holmes, "has screen shots taken from social media in China about the coronavirus sequence. They suggest the full genome was known by a genomics company in China by the 27th of December, 2019. It was reported to both China CDC and the hospital provided the patient sample on 27 and 28 December."

I will pause there.

There are a series of factual divisions in the pattern being described here. In other words, there's somebody who wrote something on social media in China, and then it sounds like there's Dr. Holmes, seeing whatever that social media content is,

extrapolating content from that, providing it, I guess, or his recollection of it to Dr. Farrar, who then wrote this book.

Is it correct to say that you, yourself, would not have personal knowledge of any of those various steps of this paragraph?

A I will say specifically that I never talk with Eddie Holmes about screen shots. I did not know that there was a genomics company that had obtained sequence by the 27th. So I really can't comment on any of this.

Q You are more or less reading this simply as a reader of a book, just like the rest of us?

A Correct.

Q All right. You made a comment -that -- and I'm paraphrasing -- was to the effect of, if you had been able to do the work that you wanted to do, there is a reasonable chance that you might have been able to identify the origin of COVID, SARS-2. Is that more or less correct?

A That's the objective. I mean, I don't know that I would have been able to, but I would have had an opportunity to try.

Q And by analogy, I think, with respect to the MERS situation, the camels, it sounds like that is essentially what you were able to do and then what you successfully did?

A We have done this many times.

Q Do you think -- and this is speculative. But do you think that there's a reasonable chance that had you been permitted to do that work, as I understand it, your view of the situation is that a natural origin is the likeliest explanation for the coronavirus -- that's an imprecise term, I understand, but what we know in parlance is coronavirus -- do you think that there's a reasonable chance that if you had been able to

do that work, you would have been able to identify the natural source of the virus and we would not be having to have this ongoing debate?

A I think that that's plausible. I can't give you a Probability, but that's what we do routinely.

Q Just briefly, we talked a little bit about your previous work or connections professionally with EcoHealth Alliance.

A Yes.

Q Are you the only scientist or doctor that would have those sorts of professional connections to EcoHealth Alliance?

A No. And I don't know everybody with whom they collaborate. But there was a point at which there was a post-doctoral fellow who subsequently became an assistant professor who was working even more closely than I had with the EcoHealth Alliance in the PREDICT program, and he's now at the University of California Davis. He's left Columbia. And there are others, I think, you know, both in the United States and elsewhere.

Q If I heard correctly, any compensation of yours linked back to EcoHealth Alliance was limited to, I think, a pair of cufflinks?

A That's the only compensation I received, other than grant-related shares, and so forth. And I'll be delighted to give anybody the cufflinks who wants them.

Q I was going to ask, are those cufflinks particularly important to you?

A I don't even know where they are.

Q Are they especially valuable cufflinks?

A I don't think so.

Q Okay.

A I don't see a lot of cufflinks around this table, by the way.

Q With respect to exhibit 7, which is the State Department fact sheet --

A Let me pull it up.

Q Yes.

A Got it.

Q I just want to be clear, you yourself would have no personal knowledge of anything being alleged or represented in this fact sheet with respect to X number of researchers at the Wuhan Institute of Virology being sick in X month, or any related facts that we've previously discussed, you wouldn't have any firsthand knowledge of any of that?

A This is the first time I've seen this document.

Q Great.

And so, just for the purpose of the transcript, I am correct to say that you would not have any personal firsthand knowledge of the contents of this document?

A That is correct.

Q With respect to exhibit 8 -- I will give you a moment to find that.

A I have it.

Q Great.

Down at the bottom of the third page -- and I think maybe we read this out loud previously, but I will read it again. This is an email from you, and it reads: "My thoughts on this topic are not based on what Peter Daszak or Shi Zhengli claim they have or have not done. Both have conflicts of interest."

Can I take that to be an accurate representation of your feelings at the time and your feelings now with respect to Peter Daszak and potential conflicts of interest?

A It is accurate.

Q And so, there is no reason to think that you are, in any way, biased in favor

of EcoHealth Alliance or towards EcoHealth Alliance?

A Not at all.

Q Okay.

A I think it's important to join those two paragraphs. Context is important.

Q Please, if you could elaborate on that.

A What I'm saying is irrespective of whether or not they did or did not have a conflict of interest, there was no evidence to suggest that this was something that could have been designed or was designed deliberately. That doesn't exclude the possibility of a research-related recombination event. It doesn't exclude the possibility of something that did or did not occur in a laboratory, but it simply means that the first question, which is whether or not this virus was deliberately designed, irrespective of how I feel about Daszak or Shi Zhengli, we didn't have the information required to do this. That was the point that I was trying to make.

Q And that fundamental point and that distinction that you just described, is it correct that that point was, I think, accurately reflected, as you just described it, in the Proximal Origins paper?

A Yes. There are some nuances in the way the paper was, you know, finally assembled and printed that are, I think, less than ideal. But if you look at the beginning of the paper where we describe the constraints with which we had to work and trying to understand what was going on, and if you look at what we said there at the very end where we say, you know, it's possible that if we get accumulated additional information, our views would change, the same three potential models remain viable -- the same models -- not three models, but the latter two models still remain viable.

So we excluded the possibility of deliberate design for the reasons I've just said. We feel, based on what's happened in the past -- and this is an accumulation of decades

of experience of my own and others -- that the most likely explanation is that it went from an animal through an intermedia or directly into humans, and given the number of animals that were present in the market, this would be a higher probability event. And the possibility that somebody -- that it might have occurred as a research-related accident was open and could not be entirely excluded.

Q That's really helpful.

Your understanding of the phrase, "lab leak" --

A You know, it's not a term that I use because -- for several reasons. The first, and I think the most important, is that it unduly constricts the risk associated with research. As I said earlier, not only can you have something which occurs as a result of deliberate growth of an infectious agent in a laboratory, but it can occur at the level of collection of the specimens, and it can occur at the time that you're bringing the specimens back to the laboratory, and it can occur in the laboratory, and it can occur with inappropriate disposal of, you know, garbage from a laboratory, through a whole range of possibilities that need to be considered.

And we have seen, for example, video footage, which I'm sure you've seen as well, from the Wuhan CDC where somebody is running around in a cave with inappropriate personal protective equipment. And I will tell you, because I have worked with EcoHealth Alliance in the field, that when they go into caves or other areas where they're collecting these animals, they are in head-to-toe PPE. They are wearing booties, full suits, respirators with HEPA filters, covered head to toe.

I don't know what is done by other people.

Q Could you elaborate or talk a little bit about wildlife markets and the risks that they pose and your previous work on that topic?

A So the wildlife markets are -- they are not restricted to China, but they are

probably the largest in China. And what happens in these markets is that you have thousands of animals that are gathered from all over. Every time a new road goes in or you see deforestation or something, they cull the animals and they sell them. And they are put in very crowded conditions, so they are stressed, which makes it much more likely that they are going to become infected. And they are frequently stacked in cages, so you have animals of different species, one on top of another. And if one animal is sneezing and becomes sick, the animals below it and to the side can get exposed to whatever that happens to be.

This is what happened during the first SARS outbreak in 2003 when civets began sneezing and coughing, and they had been exposed presumably by exposure to some other infected animal.

We've also seen -- you know, during my work in Saudi Arabia with MERS, we found that young camels were more likely to be infected, and they would sneeze and cough and infect the people that were handling them. Many of these camels wound up being sacrificed for meat. And we found abattoirs where these animals were being killed and sent to Riyadh as, you know, meat, and we measured the amount of virus that was present on meat in two different abattoirs. One of these abattoirs, they should wash these carcasses off with high-pressure hoses, there was no virus. The others, they didn't. And the ones where they didn't had a lot of infectious material.

Whether -- you know, either way you look at it, whether you believe it was a research-related event, or you believe it was related to, you know, the unsafe husbandry practices with these animals, of which we know there were 40,000 in the months prior, is reprehensible. And, you know, there's no way that you can step away from saying that what was being done was appropriate. It wasn't.

And I don't know where this virus came from. I don't think we're ever going to

know where this virus came from. If I was forced, you know, to bet my life on it, I would say the wild animal market, but that's not the same thing as being able to prove it.

And so I have always had an open mind on this particular topic. And, quite honestly, I get chastised by both this side and that side because I try to steer down the middle. But that's really what I believe as a scientist that is based on decades of experience.

So, you know, the Proximal Origins paper, you know, as you read it, you'll see in some paragraphs it states very strongly it's this. Some other places it's weaker. But if you look at the front and you look at the back, you'll see where we came to accord.

And if you've ever tried to write a paper by committee, you'll know how difficult it is to get everybody to agree on things.

And, furthermore -- and I realize I'm sort of jumping the gun on this, and I'm going to be in trouble with my counsel on this. But the fact of the matter is, I'm -- you know, I'm not the bread in the sandwich. The most important authors on the paper are the first author and the last author, and the people in the middle sometimes don't even see the final version that's adjudicated by the editor and the primary author who is known as the corresponding author.

Q Great. Thank you.

A I know that was too long-winded. I'm sorry.

Q Well, we work by committee here by definition, and we can tell you sometimes it's a difficult process.

If I could take you to exhibit 11.

A Yes.

Q The email from you in the middle of the page, the first paragraph, there's a phrase in there that's the third line down, "There is, nonetheless, no evidence that WIV,"

or WIV, "created SARS-CoV-2 deliberately or inadvertently."

Am I -- do I sense correctly that that is, I think what you were trying to explain earlier, which is deliberate engineering is extremely unlikely, correct?

A That's correct.

Q And that, in and of itself, does not necessarily speak to, or does not exclude the possibility of recombination, wherever that recombination occurred you could not possibly know, your relatively narrow point, I think, if I'm reading it correctly, is deliberate design or deliberate engineering is what you're saying is unlikely, or there's no evidence of that, I should say?

A Well, I'm saying more than that.

Q Okay.

A I'm saying that there's no evidence that I've seen that directly links it to the WIV. That's not saying that there could not be a relationship. It's just that I have not seen any evidence, and that's what I was asked.

Q This is a more general question, not linked to any particular document.

Is it important, from your point of view, that inquiry into the origins of the coronavirus or SARS-CoV-2 be guided by scientific principles of inquiry?

A That's an interesting question. You asked earlier about, you know, whether or not I had been trained in looking at certain types of evidence, and I believe that I am limited in the types of evidence that I'm able to consider. And I think that the intelligence community has different ways of looking at evidence that are also valid. So I think this really should be a partnership between subject matter experts.

Q Okay. There was a little bit of discussion of the idea of gain-of-function research. We touched briefly on the extent to which gain-of-function research does or does not typically include an intent element. I think there was a definition read out loud

which seemed not to include an intent element.

Would you ordinarily understand -- if somebody said to you in your work that some other doctor is performing gain-of-function research, would you ordinarily understand that work to be work with the intent of enhancing the danger of the virus in question?

A Gain-of-function is a very broad term. It's not just restricted to infectious diseases. It might be finding a way to modify a gene so you can take care of a genetic disease, right? So that's why I think some of these terms have taken on a life of their own, which is not necessarily appropriate.

If I understand correctly what you're asking is whether or not gain-of-function research, as it relates to the ability of a microbe to grow, to transmit, to have some other property, that's a very different type of gain-of-function research. Is that your question?

Q Yeah, in a way. I suppose my question really goes to the possibility of whatever gain-of-function research is, the notion of accidental gain-of-function research, where somebody may have ultimately done something that itself might meet the technical definition of gain-of-function, but if that was sort of inadvertent or unintentional in its result, would we say that that person at the outset of their endeavor was doing gain-of-function research?

A If they were introducing something to an organism to change its behavior, the answer is yes. There was an example of that several years ago, where there was a mouse virus, and there was an introduction of a specific protein called Io-4 which suppresses the immune response, and it could have completely changed the ability of this virus to spread. And when this occurred, the entire scientific community came and said, You can't do this sort of work without appropriate containment.

Q I will bring you back to the documents, if I could, to exhibit number 12.

I think you stated something to this effect earlier, but I just wanted to be clear about it. Whatever work EcoHealth Alliance did and subcontracted to the Wuhan Institute of Virology, that work would not be something that you would have any personal involvement in?

A Correct.

Q And you would not have any firsthand personal knowledge of that work?

A Correct.

Mr. Pellegrini. I think that covers the minority's questions for this session, and we can go off the record.

[Discussion off the record.]

Mr. Benzine. We can go back on the record.

I want to ask a few quick follow-up questions based off the last hour.

BY MR. BENZINE:

Q You were asked about doing the investigative work that you wanted to do in China to try to discover the origins.

In order to do that work, would you have had to have been invited by China?

A Yes.

Q Were you invited by China?

A No.

Q We're going to touch on it a little bit more, but you were asked about the Proximal Origins paper, and you said some aspects of it were less than ideal.

Can you elaborate?

A When I construct a paper, the way I describe, you know, findings and results and everything else, it's consistent throughout. And there's some ways in which you can read one portion of the paper that says we have strong evidence of this, and then it says,

Consistent with this, and so forth. I write differently. So I did not wordsmith the paper.

Q Okay. Thank you.

And then the last follow-up, is intentionally recombining or making chimeric viruses in the lab inherently gain-of-function?

A Well, as I said earlier, it may be gain-of-function. It may be deletion of function. So we also have what we call knockouts, which is where we eliminate something, and that is a genetic manipulation that actually reduces transmissibility.

Q What if -- and it's a hypothetical -- intentionally recombining to with a backbone that is not transmissible in order to test the transmissibility of the spike protein?

A If the objective of the experiment is to introduce something which is designed to make something more infectible or more pathogenic, then that is a gain-of-function experiment.

Mr. Benzine. Okay. As I said at the beginning of the last hour, we're going to continue with the exhibit naming convention despite not introducing all of the exhibits.

On that I would like to introduce exhibit number 13.

[Lipkin Exhibit No. 13.

Was marked for identification.]

BY MR. BENZINE:

Q This is an email between Dr. Farrar and Dr. Fauci and contains names that Dr. Farrar is trying to set up a call with regarding COVID-19.

You're not on the list of names, but just for the record, were you on this phone call?

A I was not.

Q Were you invited to this phone call?

A I was not.

Q Did you have any prior knowledge of this call taking place prior to it being publicly reported?

A I did not.

Q When did you eventually learn of the call?

A Actually I learned of it far more recently than you might expect.

Q The --

A I can't tell you precisely when, but I did not know about it in February of 2020.

Q The existence of the call or what was communicated on the call was not communicated to you during the drafting of Proximal Origin?

A That is correct.

Mr. Benzine. I would like to skip ahead and introduce what is exhibit 15.

[Lipkin Exhibit No. 15.

Was marked for identification.]

Mr. Pellegrini. Sorry to ask. This is 13. That's 15.

Mr. Benzine. Yeah, we're just going to plow through with the naming conventions.

BY MR. BENZINE:

Q This is an email chain between you and Dr. Holmes dated February 10, 2020, and Bates numbered LIP-001274 through LIP-001281.

The email on the top of the front page from Dr. Holmes to you says: "Here's the document we wrote a few days ago," and then attaches a document titled "Summary February 7th."

Is this the first time that you saw a draft of what would become Proximal Origin?

A It is.

Q Why do you think Dr. Holmes invited you to join as an author?

A I had written an article on why the risk of wild animal markets. I sent it to him, asked him to be a coauthor with me. He agreed. And my guess is that it was in that context that he invited me to join this paper.

Q In that email he says: "I'll have to chat with Jeremy in a little while to see if I can get you more directly involved."

Is Jeremy Farrar credited as an author of Proximal Origin?

A He is not.

Q Why, in your opinion, is Dr. Holmes asking his permission to credit you?

A I don't know.

Q Is that standard operating procedure?

A I don't know. For all I know, Jeremy would have been an author on the paper. I don't know because there's no -- as you see, there's really -- there's no authorship here, so --

Q Going to the bottom of the email chain on the page marked 1275, you emailed Dr. Holmes first --

A Hold on just a second.

Yes.

Q You started the email chain with Dr. Holmes and said: "Please call me.

"Thanks."

Do you remember why you needed to talk to him?

A I can only speculate that this is because of one or two things: It could have been related to this program I had, which was then called GIDeON, which is now called

GAP, or it was in relationship to the pandemic, and I don't know which it was.

Q Okay. A little bit further up you said --

A Further up or down?

Q Up. Right here, middle of the page.

A Oh.

Q "When you are back up for air I need to speak to you on two issues that concern you directly."

Would those be the two issues that you just stated?

A There's one other possibility, and that was that there was a colleague of his in Sydney who wanted to look at tick-borne illnesses, and we were going to help him investigate those.

Mr. Benzine. I now want to introduce exhibit number 16.

[Lipkin Exhibit No. 16.

Was marked for identification.]

BY MR. BENZINE:

Q This is an email chain between you, Dr. Holmes, and Dr. Farrar from February 11, 2020, and Bates numbered LIP-001282 through LIP-001284.

At the bottom of the chain on the page marked 1284, you write an email after reading one of the drafts of Proximal Origin and say: "It's well-reasoned and provides a plausible argument against genetic engineering. It does not eliminate the possibility of inadvertent release following adoption through selection in culture at the institute in Wuhan. Given the scale of the bat coronavirus research pursued there and the site of emergence of the first human cases we have a nightmare of circumstantial evidence to assess."

What did you mean by "a nightmare of circumstantial evidence"?

A Well, people -- there are two issues. One is that people are going to draw conclusions based on the fact that there was bat work being done there that might mislead them. On the other hand, it's also possible that there may have been some sort of incident there. I couldn't tell what it was. But, again, not having been trained in evidence gathering. And so forth, all I can say is, it's very difficult to figure out where the truth lies.

Q You and Dr. Holmes on this chain email back and forth a little bit about pangolin data, and you said the furin data is critical.

Have any pangolin sequences been released that have a furin cleavage site?

A No. But this is -- there was receptor bindings to cite data which looked like it might have shifted things away, I think.

So, again, to put this in context, this was a period of time where people are talking about this virus originating in a snake. And if you look at the top point, 11 February 2020, "This corneal tear is wearing me down," I was placed into quarantine. And I went walking outside, and I had a branch go across my eye. And if you've ever had that, you know the kind of pain that's like. And so, you know, I'm not operating with a full deck at this point.

[2:45 p.m.]

BY MR. BENZINE:

Q Okay. I can appreciate that.

We touched on this, but, for the record, did Dr. Kristian Andersen, who is the corresponding author on "Proximal Origin," or Dr. Holmes ever tell you personally about the February 1, 2020, conference call?

A No.

Q I would like to now turn to what is exhibit 17, and this is another email chain between Dr. Kristian Andersen and Clare Thomas, who I believe is an editor at Nature, dated February 13, 2020, and Bates numbered REV-0000266 through REV-0000268.

[Lipkin Exhibit No. 17.

Was marked for identification.]

BY MR. BENZINE:

Q At the bottom of the page marked 266 is Dr. Andersen's email to Ms. Thomas, and the paragraph I want to point you to is on the top of page 267.

The second paragraph starts, "Prompted by Jeremy Farrar, Tony Fauci, and Francis Collins, Eddie Holmes, Andrew Rambaut, Bob Garry, Ian Lipkin, and myself have been working through much of the (primarily) genetic data to provide agnostic and scientifically informed hypothesis around the origins of the virus. We are not quite finished with the write-up and we still have some loose ends, but I wanted to reach out to see if this might potentially be of interest. We see this more as a commentary/hypothesis as opposed to a more long-form letter or article."

Do you take this email to be Dr. Andersen's pitch to Nature to publish "Proximal Origin"?

A Yes.

Q Did Dr. Andersen or any other author imply to you at all that Dr. Fauci or Dr. Collins was involved in the paper?

A No.

Q Did Dr. Andersen or any other author imply to you at all that Dr. Fauci, Dr. Farrar, or Dr. Collins may have prompted the paper?

A No.

Q How do you read that sentence, the "Prompted by Jeremy Farrar, Tony Fauci, and Francis Collins"?

A So, in the first place, the punctuation is a little bit --

Q It's not well-written.

A -- clumsy. So is it, prompted by Jeremy Farrar, comma, the following people have been working through blah, blah, blah, or is it, prompted by all of those people, ending with Francis Collins, comma, Eddie Holmes and the people who followed were involved with drafting the paper?

Q I --

A So it's --

Q I'm going to operate under the assumption that, since Tony Fauci and Francis Collins were not in any way acknowledged in the paper, that the first clause is the "prompted by the three names" and the last clause is the "working through the data."

A I could see how you could draw that conclusion, but I'm not saying that that's accurate.

Q Okay.

A I don't know.

Q Okay. That's fair.

I'd like to move on to exhibit 18. While it's being handed out, this is an email

chain with many people on it after the February 1st conference call that discussed COVID. And the emails are dated February 8, 2020.

[Lipkin Exhibit No. 18.

Was marked for identification.]

BY MR. BENZINE:

Q These notes back and forth are before you were involved, correct?

A Yes. I became involved -- I don't know if it was the 10th or the 11th, but I was not involved.

Q And you're not on any of these emails --

A I don't know. I haven't read them.

Q -- to your quick --

A I haven't read them.

Q Do you appear to be on the "to" or "from" lines on any of these emails?

A Unless I'm missing something, I don't see myself.

Q Okay.

A It's hard to say because you've got these redactions here.

Q I know.

A I can't really say.

Q On the second page, there's a large email in the middle from Dr. Andersen. And in the middle of the second paragraph, a sentence begins, "Our main work over the last couple weeks has been on trying to disprove any type of lab theory, but we are at a crossroad where the scientific evidence isn't conclusive enough to say that we have high confidence in any of the three main theories considered."

Is it normal scientific process to try to disprove a theory or to follow the facts and then establish the theory?

A That's a very interesting question that gets to the philosophy of science. And the way we like to do science is that we try to knock down theories, and any theory that's still left standing after you try to knock it down is the one which gives you the model that you go with.

So you could say, yes, that that's an appropriate thing to do, but you should also try to do the same thing with every other potential explanation for what might've occurred.

Q All right. Thank you.

I want to flip to exhibit 19. These are the peer-referee, peer-review questions for "Proximal Origin" and the answers provided by Dr. Andersen. They are Bates marked REV-0000001 through -5.

[Lipkin Exhibit No. 19.

Was marked for identification.]

BY MR. BENZINE:

Q Have you ever seen these before?

A No.

Q Were you asked to consult on the answers to the peer reviewers?

A I was not.

Q Both referees discuss recent reports about coronaviruses in pangolins. Referee number 1 is question 6. And Dr. Andersen's response is, in part, "We should point out that these additional pangolin coronavirus sequences do not further clarify the different scenarios discussed in our manuscript."

Do you agree with that?

A I do.

Q And then, going to page 3, referee number 2 in the first question once again

talks about new pangolin sequences and says, "Once the authors publish their new pangolin sequences, a lab origin will be extremely unlikely."

Dr. Andersen's response is, "Unfortunately, the newly available pangolin sequences do not elucidate the origin of SARS-CoV-2 or refute a lab origin."

Do you agree with that comment?

A No. It just suggests that there are receptor binding proteins which are present on coronaviruses elsewhere that could be the source of what eventually became SARS-CoV-2. But it can't tell you whether or not there was a research-related event.

Q Thank you.

The final "Proximal Origin" paper was published in Nature Medicine on March 17, 2020. And I would like to introduce that as exhibit 20.

[Lipkin Exhibit No. 20.

Was marked for identification.]

BY MR. BENZINE:

Q While it's being passed out -- and we've talked about this before -- the paper came to the conclusion of, "Our analyses clearly show that SARS-CoV-2 is not a laboratory construct or a purposefully manipulated virus."

Do you stand by that statement?

A I do.

Q What is your definition of "laboratory construct"?

A A laboratory construct is a situation where you deliberately modify a virus to have certain properties.

Q Would --

A That's --

Q I'm sorry. Go ahead.

A Oh, no.

Q Would serial passage in mice or another laboratory animal qualify as a laboratory construct?

A No.

Q Okay.

Does that conclusion, that SARS-CoV-2 is not a laboratory construct or a purposefully manipulated virus, rule out a laboratory or research-related accident?

A It does not.

Q Is there a way to tell if a virus has gone through natural passage in the wild or in a wet market versus passage in a laboratory?

A So, if by "a laboratory" you include animals, right, in a vivarium, no.

Q No. So you could conduct serial passage through human ACE2 mice, and the final virus would be indistinguishable from a virus that went through passage over thousands of years of evolution?

A Well, I don't know if an ACE2 mouse is the ideal circumstance, but people have done work, for example, with ferrets where you have viruses that evolved to become more pathogenic. That happened with H5N1. Or if you had, for example, raccoon dogs or civets that you have in captivity, you could also see, you know, an evolution of the virus to become more pathogenic for humans in that way. And you couldn't really distinguish that from what happened at a wild animal market.

Q Are you aware of Dr. Ralph Baric at North Carolina?

A I do -- I am.

Q Are you aware of his "no-see'm" techniques for genetic modification?

A I don't know the -- I know of his work because I know his reverse genetics, but I don't know --

Q Is it possible to genetically modify a virus and not leave a trace of that modification?

A It is possible.

Q So it's still -- it's theoretically possible that COVID-19 could be a laboratory construct and it used a technique that didn't leave a trace?

A Except that, I think as I said earlier, it's more than just the furin cleavage site and the receptor binding site; there are many other changes that have occurred within this virus that we didn't even know about back in 2019 or even in early 2020. So, even if I had known what I wanted to create, I couldn't have given you a blueprint to say, this is the virus I want to make.

Q Okay. Thank you. That's helpful.

There have been -- and you've touched on this a little bit. There have been any number of papers that have come out since "Proximal Origin," and I'm going to grab them real quick.

One of the first ones was a letter in The Lancet written by Dr. Daszak of EcoHealth, entitled "Statement in support of the scientists, public health professionals, and medical professionals of China combating COVID-19."

And in this, he writes, "We stand together to strongly condemn conspiracy theories suggesting that COVID-19 does not have a natural origin."

Is it a conspiracy theory to suggest that this could've been a research-related accident?

A Again, I would not have phrased it that way. I would've talked about probabilities. But I would not say at this point that we could exclude the possibility that there was some sort of research-related incident.

Q So you think a research-related incident is still a plausible --

A I would say --

Q -- outcome today?

A I would say it's possible. I wouldn't say --

Q A possible outcome today.

A -- you know -- and I know I'm slicing the prosciutto really thin here. What I'm trying to say is, my money is on bad, you know, practices in this market.

And that's why I wrote a paper immediately on this issue, and that's why I provided information to the Chinese Government even as far back as 2003, saying, you need to shut down these markets.

Q Were you invited to join this paper?

A Which paper?

Q The one in The --

A Let me see this one. I don't -- I don't remember.

Q The one in The Lancet by Dr. Daszak?

Mr. Pellegrini. Sorry. Is that an exhibit?

Mr. Benzine. No, but it can be.

Mr. Pellegrini. Yeah.

Mr. Benzine. Okay. We'll introduce it as exhibit 21.

[Lipkin Exhibit No. 21.

Was marked for identification.]

Mr. Benzine. And I'll get you copies.

Mr. Pellegrini. Okay.

And just for the record, the minority doesn't have a copy of that letter.

Dr. Lipkin. I was not invited to join that letter.

BY MR. BENZINE:

Q The next one is -- it was published in Science Magazine by Dr. Jesse Bloom.

Do you know who Dr. Jesse Bloom is?

A [Nonverbal response.]

Q And it encouraged investigating the origins of COVID-19.

Were you invited to join this letter?

A I don't remember. I know Jesse Bloom very well. We were supposed to be together in Geneva next week, but I'm not going.

Mr. Pellegrini. I'm sorry. Is that an exhibit?

Mr. Benzine. No.

Dr. Lipkin. Well, this is a very interesting letter, because it includes people who are on either ends of this debate. You have Relman and Bloom on one side, and Marc Lipsitch, and then on the other side you have Worobey and others. And then you have Baric, like me, who tries to steer down the middle. So --

Mr. Babbitt. Is the question whether he was --

Mr. Benzine. Whether he was invited to join that one.

Dr. Lipkin. I was not.

Mr. Benzine. I will introduce it, so we'll just --

Mr. Pellegrini. Okay.

Mr. Benzine. -- we can go that way.

[Lipkin Exhibit No. 22.

Was marked for identification.]

BY MR. BENZINE:

Q The last couple I want to talk about -- and I'll just go ahead and introduce them all and state for the record that the minority will get copies -- is the next one, written by Dr. Holmes and a couple others -- Dr. Andersen, Dr. Garry, Dr. Rambaut, your

co-authors on "Proximal Origin" --

A Yeah.

Q -- entitled "The Origins of SARS-CoV-2: A Critical Review" in Cell Press. Were you invited to join that one?

A I was not.

Q And that will be inserted as exhibit 23.

[Lipkin Exhibit No. 23.

Was marked for identification.]

BY MR. BENZINE:

Q The next one, which will be exhibit 24, is a paper by Dr. Worobey entitled, "The Huanan Seafood Wholesale Market in Wuhan Was the Early Epicenter of the COVID-19 Pandemic."

[Lipkin Exhibit No. 24.

Was marked for identification.]

BY MR. BENZINE:

Q Were you invited to join that paper?

A I was not.

Q What are your thoughts on this particular paper?

Mr. Babbitt. Maybe first question, have you read it?

BY MR. BENZINE:

Q Have you read that paper?

A I have read that paper, yes.

Q What is your expert opinion on that paper?

A I don't think that I can conclude based on this paper that the origin is the seafood market. The only thing that I conclude from that paper is that it was a site for

amplification.

That doesn't mean that it wasn't the site. It just means that I don't find it, you know, what we call dispositive evidence.

Q I would like to turn your attention back to what's marked as exhibit 11. And on page 2620 at the bottom of exhibit 11 --

A I'm just trying to keep them in order. Which page?

Q 2620.

A 2620. Okay.

Q There's an email from you to Laurie Garrett. And it says, "Our colleagues fueled this with armchair epidemiology based on unverifiable data sets and terms like 'dispositive evidence.'"

Were you referencing the paper just introduced as exhibit 24?

A Yes.

Q Can you explain a little bit more what you mean by "armchair epidemiology"?

A Trying to sort out what happened at a distance, without any direct access to samples, data sets, is difficult and can be misleading.

Q And, if you recall, can you describe what you meant by terms like "dispositive evidence"?

A Well, this was not a term that I used; it's a term that they used.

Q Uh-huh.

A They used it to say that this was incontrovertible proof that it started in the wet market.

Q In your opinion, does that paper prove that COVID-19 started in the wet market?

A It does not.

Q Okay.

A May I add something or no?

Q Go ahead.

A But if you were to ask me to bet, I would say, I bet it started in the wet market. But that's not the way I operate. I want to know -- I know what I know, and I know what I don't know.

Q Uh-huh.

A Yeah.

Q Do you keep a relationship with Dr. Holmes now?

A No.

Q Why not?

A Dr. Holmes became very unhappy with me after I refused to sign on and say that, you know, there was proof that this is where this began, in the wet market. And so we have no further -- we've had no further contact.

Q Do you think that's why you weren't invited to join any of the other papers?

A You're asking me to speculate?

Q Yes.

A Okay. I would say, probably so.

Q Do you have an ongoing relationship with Dr. Daszak?

A I talk to Peter from time to time, yeah.

Q Generally, what are the contents of those conversations?

A Oh, I've just known him for a very long time, and it's a community in which, you know, we work together. I don't have any ongoing projects with him right now, but I've spoken with him at various points about emerging infectious diseases.

Q Have you spoken to him or has he spoken to you regarding his work at the Wuhan Institute of Virology?

A No.

Q A couple little cleanup questions, and then I have one last round, and then I'll turn it over to the minority, if they have questions.

You testified earlier that you went to China in late January 2020 and returned in February 2020 and, when you got back, had either email, phone, or in-person conversations with various people within the government at NIH/NIAID or CDC?

A Uh-huh. Both.

Q What information did you relay to them? Did you have answers to their questions?

A We didn't know much about, at that point, you know, the incubation period. We knew that the wet market had been cleaned out, that there were no animals to survey, with the exception of a few frozen bamboo rats that both Chen Zhu and I felt were not going to be productive, because this is not a host that, you know, could harbor these viruses. And we knew that the only samples they had been able to recover had been environmental samples, which were swabs taken from sewers and floor and cages and things like that, and that was not going to give us the information we knew to figure out what was circulating when.

Q And then you've touched on this. And just a simple "yes" or "no." In your opinion, is it possible that COVID-19 was the result of a laboratory or research-related accident?

A I think it's still possible.

Q One final set of questions.

The U.S. intelligence community has been investigating the origins of COVID-19

since early 2020.

Are you aware of these efforts?

A Yes.

Q On May 26, 2021, President Biden announced that he directed the intelligence community to redouble their efforts to investigate the origins of COVID-19 and deliver an assessment within 90 days.

Are you aware of that announcement?

A No.

Q On August 27, 2021, the Office of the Director of National Intelligence released an unclassified summary.

Are you aware or have you seen that summary?

A No.

Q And on October 29th, the Office of the Director of National Intelligence released its full declassified assessment, which was introduced as minority exhibit A.

Before today, were you aware of that assessment?

A No.

Q At any point were you contacted by anyone in the intelligence community to assist with these assessments or investigating the origins of COVID-19?

A Yes.

Q Which agencies?

A The FBI.

Q Any others?

A No. I generally -- I've been meeting I would say quarterly with two FBI agents from the New York office.

Q I'd like to enter in exhibit 25, I believe it is now, and this is an email from you

and Dr. Holmes, dated April 7, 2022.

[Lipkin Exhibit No. 25.

Was marked for identification.]

BY MR. BENZINE:

Q And in the fourth paragraph, you say, "The origins controversy isn't going away. I've been questioned by the FBI, the CIA, the DOD, House committees, and received right-wing, anti-Semitic death threats."

During the course of the intelligence community's origins investigation, were you also working with the CIA and DOD?

A I'm -- well, obviously the C- -- well, if I wrote this, then it must've been the case. And I know that I spoke with the minority committee at the time about this.

Q At the U.S. Senate Health, Education, Labor, and Pensions Committee?

A These were staffers for Jordan and Scalise, I believe.

Q Okay.

A But that goes back a ways. And at that time -- so I have -- I would just say that I have always been -- oh, and DOD -- I'm trying to remember who else I spoke to. His name will come back to me in a moment. But I've spoken to anybody in the Federal Government who has asked me for input.

Q So, sticking with the agency that you remember best, you said you have been meeting almost quarterly with the FBI in the New York office?

A Yes.

Q What do those interactions look like?

A Well, they would ask me what I know about transmission, the number of people who are infected. You know, they just periodically come in and see if there was anything new that I'd found out that would be of value.

Q Have you consulted with the Department of Energy at all?

A No.

Q Other than these interactions --

A Not knowingly, I should say.

Q Other than these interactions, do you knowingly keep or maintain any permanent relationship with any component of the intelligence community?

A I do not.

Q Do you have any facts to support either EcoHealth Alliance or Dr. Daszak keeping or maintaining any relationship with the intelligence community?

A I have no knowledge of Peter Daszak's relationships or funding at this point.

Mr. Benzine. Thank you. That is all the questions that I have. Happy to take a break and turn it back over.

Mr. Babbitt. Yeah, let's take a break. When we come back, we may need to fix the exhibit numbers.

Mr. Benzine. Yeah, it needs to be 25.

Mr. Babbitt. Yeah, 25, or the other one can be 20A. But, yeah, this is 25.

[Recess.]

Mr. Pellegrini. We'll go back on the record.

Mr. Babbitt. Before you begin with your questioning, I'd like to give Dr. Lipkin an opportunity to clarify one of his prior answers.

Mr. Pellegrini. Great.

Dr. Lipkin. So the last question that you posed, Mr. Benzine, concerned my relationship with Eddie Holmes.

There was an interview that I did in Vanity Fair, and after reading that particular interview in Vanity Fair, he contacted me by email and said, you know, you're promoting

the idea of a laboratory-related incident, as opposed to the wild animal hypothesis, which we think is the only one that's tenable. And he wanted me to do some sort of a correction, which I was not willing nor was I able to do.

We had a falling out at that point over this, despite the fact that we'd been friends for several years. And I was never invited again to participate in any papers relating to this work around the market or the analysis of samples for the market or anything else.

This wound up being represented in a way that suggested that I felt left out of these papers, what have you, which is not the case. I was simply asked to answer the question, "Have you been involved in any of these papers?" and the answer is no, and I can speculate that it's because he was unhappy with the way I handled that earlier stuff. But I don't change my views for any other reason than to accommodate new evidence.

I hope that's, you know, helpful.

Mr. Pellegrini. Great. Thank you, Dr. Lipkin.

I'm going to turn it over to my colleague, Mr. Lichtman, for a few questions.

Mr. Lichtman. Great.

BY MR. LICHTMAN:

Q Dr. Lipkin, I'd like to revisit Dr. Andersen's email on the second page of exhibit 18, specifically a line in the middle paragraph of Dr. Andersen's email that was sent at 22:15 on February 8, 2020.

A Hang on just a second. What page is this?

Q It's the second page.

A Yeah.

Q No Bates number.

Dr. Andersen writes, quote, "Our main work over the last couple of weeks has been focused on trying to disprove any type of lab theory, but we are at a crossroad

where the scientific evidence isn't conclusive enough to say that we have high confidence in any of the three main theories considered," end quote.

In the last hour, you, Dr. Lipkin, referenced the philosophy of science and an approach to science that involves disproving hypotheses to determine the last one standing. Is that correct?

A That's correct.

Q Can the approach of, quote, "disproving," end quote, theories or hypotheses as part of the scientific process be done objectively and without undue influence?

A It should be done that way.

Q And it can be done that way?

A And it can be done that way.

Q Does the use of the word "disproving" in Dr. Andersen's email in any way suggest that the work referenced was not conducted objectively or that it was subject to external influence?

A I don't have any insight into this, because I was not involved in any of this discussion, and I don't know what he meant.

Q Okay. But --

A This would be a -- this is 2 or 3 days before I became engaged in any way.

Q Okay. Thank you.

BY MR. PELLEGRINI:

Q Dr. Lipkin, if I could take you back to exhibit 15, please.

A Sorry. Give me just a second.

Q Of course.

A I've got a lot of exhibits here.

Q Yes, indeed.

A If I ever do this again, I will bring a notebook and a hole-punch.

Okay. I'm with you.

Q Great. This will be familiar territory.

At the very top of the first page, Dr. Holmes writes to you, "Hi, Ian. Here is the document we wrote a few days ago." That's the end of that sentence. And the date on this email is Monday, February 10th of 2020.

So is it correct to say, based on this email chain and your recollection, that Dr. Holmes first communicated with you about the "Proximal Origin" paper on February 10th?

A Correct.

Q And is it right, based on this chain and your recollection, that you were not involved with the "Proximal Origin" paper at all until February 10th?

A Correct.

Q And when Dr. Holmes says, "Here is the document we wrote a few days ago," that would make it seem, I think, that by the time you got involved the document had already been drafted. Is that right?

A Well, when we're talking about drafts, it's an early draft.

Q Right. But, in that sense, the document --

A Yes.

Q -- had been drafted. And that draft had been created, according to Dr. Holmes, at least a few days prior to your entrance into the project. Is that right?

A That's the way I read it.

Q Okay. And so, to be crystal-clear on that, you were not personally involved in the initial conception of the paper or the initial drafting of the paper?

A That is correct.

Q You may end up repeating yourself a little bit here, but, as you now know, there was a conference call on February 1st of 2020 that included Dr. Fauci, Dr. Collins, and several others.

It is correct to say that you were not on that call, correct?

A That is correct. I was in China at that point.

Q And you were not invited to be on that call? Is that correct?

A That is also correct.

Q And, at the time, to the best of your recollection, you were not aware of that call?

A I was not aware of that call.

Q To the extent that there may be claims publicly that the views of your co-authors somehow changed between the date of that call, February 1st, and the initial drafting of the paper, which we believe was a few days later, on or about February 4th, is it correct to say that you would have no personal knowledge of whatever facts are being claimed or occurred in that period of time, between February 1st and February 4th?

A Correct.

Q To the extent that there are claims that the views of your co-authors somehow changed or may have been unduly influenced and emails were sent or received on dates prior to February 10th, whether that's February 7th, 8th, or 9th, is it correct to say you would not have any personal knowledge of those either?

A Correct.

Q Okay.

I think it is worth just asking whether you have a point of view, professionally or reputationally, with respect to Dr. Fauci and Dr. Collins. What is your, sort of, professional view of them?

A Well, I've known both Francis Collins and Tony Fauci for many years. I've known Tony Fauci for, you know, decades and, you know, we are friends.

Francis Collins, who was at that point the Director of the NIH, I served on his advisory board for 3 years, which means that I helped him direct the research portfolio for the NIH for a period of 3 years. And that included extramural as well as intramural programs. So I know him in that context. We also worked together in analyzing the potential role of a virus called XMRV in chronic fatigue syndrome. So that was 3 years prior to that.

So I've known Francis Collins for a very long time. I've known Tony Fauci longer still.

Q Has it been your --

A And I would just add, I nominated Tony Fauci for an honorary doctorate at Columbia University. And I will be seeing him, you know, when he receives the Calderon Prize for contributions to public health later this month.

Q Has it been your experience that, in their professional conduct, Dr. Fauci or Dr. Collins have been interested in anything other than the scientific method and the scientific truth, for lack of a better term?

A Okay, I have never seen either of them do anything other than support the very best science, and I've never seen them try to steer science, except insofar as, you know, when there were various moonshot programs and so forth, we adjusted priorities for funding within the Federal Government so we emphasized cancer, neuroscience, or something of the nature. But never in any way have I seen them do anything other than pursue the best science.

Q If I could bring you to exhibit 16, please.

On the second page of that email exchange, which is labeled 1283, in the middle

of that page is an email from Dr. Farrar, and I'll just read the first sentence of it. I think it's to Eddie Holmes. And it says, "Thanks, Eddie. I think crucial this gets into the public domain in the most scientifically valid, neutral way possible and as soon as possible."

The approach reflected in that sentence, of "the most scientifically valid, neutral way possible," is that generally reflective of your experience with Dr. Farrar, whether working on the "Proximal Origin" paper or otherwise?

A It is.

Q Great.

If I could ask you to find exhibit 19, please. This is more of just a clarification for my own purposes.

Down at the bottom of the first page of this document, in bold, the very last sentence here -- which was not written by you; is that correct?

A I did not write this.

Q But --

A And I have not seen it.

Q And you have not seen it. But, to the best of your understanding -- the question, I should say, that's posed a few lines above is: "There are two recent reports about coronaviruses in pangolins. The authors might want to comment on these."

And the last sentence of the response is, "There is nothing in these reports that changes our statements regarding a potential role of pangolins."

I understand, but do you understand the "our statements" reference in that last sentence to be referring to whatever exists in the then-current draft of "Proximal Origin"?

A Yes.

Q Yeah. In other words, the "Proximal Origin" paper was drafted; it said X

about the possible role of pangolins. Subsequent to that, it was brought to your attention that there were two new reports related to pangolins. And whoever wrote this response is saying, the new reports don't change anything about what we have initially said in our draft paper.

A That would be my -- that's my understanding.

Q Okay. Thank you.

The "Proximal Origin" paper never purported to eliminate the possibility of what I think you referred to as a research-related incident. Is that correct?

A It does not exclude that possibility.

Q It deems it perhaps not likely but possible.

A That's correct.

Q And that, I think, was your view at the time and remains your view now.

A That's correct.

Q In that sense, would it be your view that the "Proximal Origin" paper is fundamentally well-reasoned even now with a few years of hindsight?

A Yes. Of course, with new data, there are things that we would've placed into it to update the manuscript.

Mr. Pellegrini. I think that concludes the minority's questions, and therefore, we can go off the record.

Mr. Benzine. That's it for us.

[Whereupon, at 3:35 p.m., the interview was concluded.]

Certificate of Deponent/Interviewee

I have read the foregoing ____ pages, which contain the correct transcript of the answers made by me to the questions therein recorded.

_____

Witness Name

_____

Date