

SHI ZHENGLI PROVIDES PROOF SARS COV-2 WAS NOT AN ACCIDENTAL RELEASE FROM WUHAN INSTITUTE OF VIROLOGY

On Saturday, I took a deep dive into the origin of SARS CoV-2, the virus that is the cause of the deadly COVID-19 pandemic. That post was the result of several long days of deep reading and thinking. Somehow, I missed that Scientific American had put out an update on Friday of their profile of Dr. Shi Zhengli, the scientist responsible for much of what the world knows about bat coronaviruses, including isolating the bat coronavirus from Yunnan Province that is the closest relative to SARS CoV-2 that has been seen in a laboratory. Even worse, commenter Zinsky linked to the Scientific American article in one of the earliest comments on my post.

I finally got around to reading the article today. As you might imagine, this editor's note at the top really got my attention:

Editor's Note (4/24/20): This article was originally published online on March 11. It has been updated for inclusion in the June 2020 issue of Scientific American and to address rumors that SARS-CoV-2 emerged from Shi Zhengli's lab in China.

I strongly urge you to read the entire article. It provides an effective look into work that Shi had been doing prior to the outbreak and then takes us along with her as she gets the news on December 30 that a novel coronavirus had been detected in two patients in Wuhan with atypical pneumonia. On instruction from the lab director, Shi left the conference she was attending in Shanghai and rushed back to Wuhan to concentrate all of her attention on the new virus.

It is important to keep in mind that Shi's career up to the SARS CoV-2 outbreak was aimed at just such an event. In fact, she and her team had warned us. From the Scientific American article:

With growing human populations increasingly encroaching on wildlife habitats, with unprecedented changes in land use, with wildlife and livestock transported across countries and their products around the world, and with sharp increases in both domestic and international travel, pandemics of new diseases are a mathematical near certainty. This had been keeping Shi and many other researchers awake at night long before the mysterious samples landed at the Wuhan Institute of Virology on that ominous evening last December.

More than a year ago Shi's team published two comprehensive reviews about coronaviruses in *Viruses* and *Nature Reviews Microbiology*. Drawing evidence from her own studies—many of which were published in top academic journals—and from others, Shi and her co-authors warned of the risk of future outbreaks of bat-borne coronaviruses.

With that as background, her actions in digging into the new virus make perfect sense for how a respected scientist engaged in work with dangerous viruses would seek the source of the outbreak.

She and her team jumped into work on the train trip back to Wuhan from the conference in Shanghai:

On the train back to Wuhan on December 30 last year, Shi and her colleagues discussed ways to immediately start testing the patients' samples. In the

following weeks—the most intense and the most stressful time of her life—China’s bat woman felt she was fighting a battle in her worst nightmare, even though it was one she had been preparing for over the past 16 years. Using a technique called polymerase chain reaction, which can detect a virus by amplifying its genetic material, the team found that samples from five of seven patients had genetic sequences present in all coronaviruses.

But here’s where the character of a person who has been dedicated to science her entire career comes out:

Shi instructed her group to repeat the tests and, at the same time, sent the samples to another facility to sequence the full viral genomes. Meanwhile she frantically went through her own lab’s records from the past few years to check for any mishandling of experimental materials, especially during disposal. Shi breathed a sigh of relief when the results came back: none of the sequences matched those of the viruses her team had sampled from bat caves. “That really took a load off my mind,” she says. “I had not slept a wink for days.”

Yes, months before the rumors of an accidental release from her lab started circulating, one of Shi’s very first steps was to make sure that the sequence of the virus found in patients from the wet market did not align with the sequences of any of the viruses isolated from bats that she had in her lab. She had already warned the world of the danger posed by some coronaviruses jumping from bats to humans. [Note: even though we talk about SARS CoV-2 and the bat virus RaTG13 being “closely related”, they still differ by enough that it is clear that SARS CoV-2 came from a different source than either the virus circulating in that bat population at

the time it was isolated or the virus as it exists now in the lab.]

Even more importantly, she checked lab safety records and did not sleep until she could eliminate the nightmare of her lab being responsible for the outbreak.

The article goes on to detail the steps taken to confirm SARS CoV-2 as the agent for the outbreak and the use of sequencing of multiple isolates from different patients over time to indicate that it's very likely that there was only a single introduction of the virus into humans.

Clearly, the rumors of a leak from her lab have bothered Shi, but she will not allow them to stop her:

Despite the disturbance, Shi is determined to continue her work. "The mission must go on," she says. "What we have uncovered is just the tip of an iceberg." She is planning to lead a national project to systematically sample viruses in bat caves, with much wider scope and intensity than previous attempts.

/snip/

"Bat-borne coronaviruses will cause more outbreaks," Shi says with a tone of brooding certainty. "We must find them before they find us."

Epilogue

In my post on Saturday, I posited that if we are to believe that the outbreak was the product of an accidental release from Wuhan Institute of Virology, we would have to claim that China has removed from the record any evidence of workers from the lab, or the family or other close contacts, being infected or dying.

Now, after the details that Shi has provided, we would have to believe that a scientist with a long history of top-notch peer reviewed research

would be involved in such a lie and would further fabricate the story that none of the previous isolates in her lab match the outbreak.

A scientist of this caliber would know that such a lie would eventually be uncovered. That Shi intends to continue her work unabated is very strong evidence that she is being truthful and can rightfully proceed with a clear conscience.

Those considerations prompted me to return to the “evidence” that was presented to suggest an accidental release. Recall that in my post Saturday, I was perplexed by what looked like the outlines of an information operation. First, the specificity, out of the blue, of the question from John Roberts of Fox about an intern at the lab being infected. I still haven’t heard any others make this same suggestion, so that still stands out as suspicious.

But then I went back and looked at the Josh Rogin column from the same day, where Rogin concentrated on two State Department cables from 2018 about Wuhan Institute of Virology. Here’s the setting Rogin provided for the cables:

In January 2018, the U.S. Embassy in Beijing took the unusual step of repeatedly sending U.S. science diplomats to the Wuhan Institute of Virology (WIV), which had in 2015 become China’s first laboratory to achieve the highest level of international bioresearch safety (known as BSL-4). WIV issued a news release in English about the last of these visits, which occurred on March 27, 2018. The U.S. delegation was led by Jamison Fouss, the consul general in Wuhan, and Rick Switzer, the embassy’s counselor of environment, science, technology and health. Last week, WIV erased that statement from its website, though it remains archived on the Internet.

What the U.S. officials learned during

their visits concerned them so much that they dispatched two diplomatic cables categorized as Sensitive But Unclassified back to Washington. The cables warned about safety and management weaknesses at the WIV lab and proposed more attention and help. The first cable, which I obtained, also warns that the lab's work on bat coronaviruses and their potential human transmission represented a risk of a new SARS-like pandemic.

And yet, even though Rogin says he got a copy of the first cable, this is the only money quote he chose to put into his column:

"During interactions with scientists at the WIV laboratory, they noted the new lab has a serious shortage of appropriately trained technicians and investigators needed to safely operate this high-containment laboratory," states the Jan. 19, 2018, cable, which was drafted by two officials from the embassy's environment, science and health sections who met with the WIV scientists. (The State Department declined to comment on this and other details of the story.)

Rogin then adds what I think is the most important part:

The Chinese researchers at WIV were receiving assistance from the Galveston National Laboratory at the University of Texas Medical Branch and other U.S. organizations, but the Chinese requested additional help. The cables argued that the United States should give the Wuhan lab further support, mainly because its research on bat coronaviruses was important but also dangerous.

Really? The scariest language that Rogin could

lift from the cable warned of a “shortage of appropriately trained technicians and investigators needed to safely operate”, but then he grudgingly had to note that this was in fact tied to a request from the lab for more outside assistance in getting that training. When we couple that thought with the failure, so far, of Rogin or anyone else to have actually published the full cables, I am more convinced than ever that the whole cable story is part of a coordinated information operation where Roberts asked the specific question and then Rogin took information that had been twisted inside-out from a cable asking for help with training at the lab to try to turn it into a potential whistle-blowing event.

One more bit. I did some digging. Rick Switzer, the “embassy’s counselor of environment, science, technology and health” is not a scientist:



Rick Switzer

Environment, Science, Technology & Health (ESTH)
Deputy Section Chief at US Embassy

Prior to Beijing Rick served as a Division Chief in State Department’s Bureau of Research’s Office of Terror, Narcotics, and Crime. He also served in Bangkok as the Regional Environment, Science, Technology and Health Officer (REO) Hub Director for East and Southeast and in Baghdad where he was the Program Manager of the \$650 million Police Development Program. His other previous postings include Barbados, Tijuana and Beijing. Prior to joining State Rick co-founded a wireless technology start-up and also conducted innovation policy research at the University of California. He brings with him an extensive background in entrepreneurship having helped launch the Global Connect program at the University of California San Diego and later the Barbados Entrepreneurship Foundation while serving at the Embassy in Bridgetown.

Rogin says the cable he saw was written by “two officials from the embassy’s environment, science and health sections who met with the WIV scientists”. One would hope that there was at least one actual scientist among those two officials.