

Interview with University of Nebraska plant pathologist on witch-hunt of Chinese researchers

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The following is an interview with Kyle Broderick, coordinator of the Plant and Pest Diagnostic Clinic at the University of Nebraska-Lincoln, on the witch-hunt of two Chinese researchers at the University of Michigan who are in federal prison on charges of smuggling plant pathogens into the US. The Trump administration is linking the two to so-called "agroterrorism" and using their cases to whip up anti-Chinese sentiment and prepare for military conflict with Beijing.

Yunqing Jian faces up to 20 years for "smuggling" the common fungus *fusarium graminearum*. Chengxuan Han likewise faces up to 20 years for allegedly sending roundworms (*C. elegans*) and plasmids on filter paper through the mail without proper permits.

Stephen St. Clair: Do you have the impression that politics are involved in these prosecutions?

Kyle Broderick: I do. That said, it's very important to track the movement of biological things across international borders, whether they are fungi, bacteria, nematodes, viruses, etc. Plants as well.

It's important to regulate all of that stuff and to know what diseases and what pests are where in the world. We spend a lot a lot of time trying to protect the United States from getting shipments that contain some of these pests. At the same time, other countries have the exact same list. That's called the select agents list, and, basically, if we would find a pathogen or anything like that on one of these lists, then export would be shut down. They have a high probability to cause large economic harm. That's why they are on this list. Every country in the world wants to protect their own agriculture, their own green industries, their own human, animal, and plant health.

But not all microorganisms are created equally. In the case with the nematode *C. elegans*, that nematode is extremely common. During my undergraduate career I worked on exploring a bacterial biological control against nematodes, and I studied that using *C. elegans*. I purchased these *C. elegans* from a manufacturer in China, and they were sent to me frozen.

SSC: You talked to the *Detroit News* about *fusarium graminearum* and how common it is. This is something much more innocuous than even that. It's not a pathogen or parasite, just *C. elegans*. How common is it for researchers, especially early-career researchers, to transmit or receive non-hazardous specimens like this across international borders without formal permits? What are the primary reasons for why this informal transfer happens?

KB: The permitting process is extremely important. It's onerous, it takes a long time, but I do believe that it is important to have some regulation over labs that are going to be working with things that can

potentially cause harm. The reality is these are biological organisms. We don't know everything about it.

With the *fusarium graminearum* thing, if there was the potential for that organism to have been modified to be more aggressive, something like that, then that would be concerning. Same with the *C. elegans* case here. Yes, the nematode itself is extremely common, but what is also kind of being lost in some of the reporting is that there are also unknown plasmids. And we don't know what genetic material was encoded on those plasmids. There is a potential for something to have been modified. I think that potential is pretty low, but that potential is there.

Now, as far as how common it is to share these, it's extremely common. People share things all over. I don't have any international permits. I have permits from US territories and everything within the United States.

It's very common to share these things because we want to know – with the case of *fusarium graminearum*, we have wheat breeders in the United States that are trying to breed broad resistance to all strains of *fusarium graminearum*. Well, we know that the strains we have in the US are slightly different from the ones in China, or in Africa or Europe or other parts of the world. So it's very beneficial to get cultures so breeders can test how robust their breeding projects are. It's the exact same for developing diagnostic protocols too.

You also mentioned sharing things without permits. That does happen. It shouldn't, but I think that at one point or another a lot of researchers may have violated a permit. Especially permits that are within the US. There's not a whole lot of difference between Nebraska and Kansas at the border, and if a farmer breeds a sample from just over the Kansas border but he doesn't tell me that it's from Kansas and I don't find that out until later, that's not the biggest problem in the world.

Now, something from overseas, the potential for danger is there, but also a lot of this stuff is being blown out of proportion because we're not all scientists and science is hard. When people think about what a fungus is they just think about the fuzzy stuff growing on my hummus in the refrigerator, and there is a lot of nuance to it.

SSC: Part of the nuance is that in ordinary conditions a customs violation like this would result in a fine, right?

KB: Yeah.

SSC: Why are they facing up to 20 years?

KB: I think it is a scare tactic. There does seem to be some animosity towards higher education and the institutes that are doing a lot of research, and when you throw China into the equation, that

really complicates things. It would be very interesting to me if there were a similar case, maybe a graduate assistant of German descent, and what would happen then? Would it just be the standard fine? Would there be more of a reprimand? I don't know, but I am curious about that.

SSC: That is the political issue, the scale of the attack by the government through the media, with the director of the FBI, Kash Patel, tweeting that Jian's case was an "agroterrorism" incident.

KB: All the seed that is exported out of this country is tested and checked for not only the presence of *fusarium graminearum* or the toxins that it produces, but for a lot of other things too. We do have these checks in place to help prevent it from spreading.

But yeah, it's kind of ridiculous, honestly. Again, I fully understand the importance and the need for tracking pests. The potential for modification is there. I think it's very low. It's not an impossibility.

But it's all about scoring points, and I think that it's kind of similar to the move towards getting a lot of immigrants to self-deport. I think the same thing is happening with a lot of international students that are on their J1 visas as well. If we can just get them to say, "It's not worth it, let's go back home," then that is a win for some people in this country. I think overall it is a major loss for this country.

The knowledge that we gain and the importance of international relationships in science is critical. And COVID proved that. One of the most amazing things in COVID was how, early on, nobody cared where you were from, they started to share genetic sequences. That sped the research up light years. We need these relationships.

SSC: The scientific communities of the US and China are deeply integrated. A 2025 study analyzing millions of publications from 2008 to 2020 found that over 45 percent of China-based international production of high-impact scientific research involved US-based scientists, and 30 percent of US-based research involved China-based scientists. What will be the consequences of the attack on ties between US and Chinese researchers?

KB: I think the consequences could be enormous. Collaboration is important, and research is so specialized. You can't know everything, not only having different academic backgrounds but also different cultural backgrounds. We all have our own biases. It's the same thing with research. We tend to get stuck in ruts, and someone will ask a question that leads to the discovery of a brand new field.

SSC: You mentioned a connection to self-deportation, making conditions so bad that "maybe it's not worth staying, maybe let's go home." This is connected to a larger assault of the Trump administration on democratic rights, especially against immigrants. Would you care to comment on the connection between the attack on science and the broader aims of the Trump administration?

KB: I think there seem to be connections, whether it is synchronicity or a plan, who knows? We really don't know, but it is seemingly connected. One of the things that I have always loved about working at a university, even in Nebraska, very conservative, a lot of Eastern European descendants, a fairly "white" area. But at the university it's different, and I've had the opportunity to interact with people from all over the world and learn. It's great! Aside from just the research benefits that come from it, it's the personal expansion and the friendships I have made. It's incredible.

A lot of the students that I interact with, their plan is, after they graduate they want to go back to their home country and use the knowledge that they have gained to try to help others who are there. It's just so beneficial. The United States would not be one of the leading academic countries in the world if not for its acceptance of

immigrants. The Manhattan Project is proof of that. That's just the story that everyone knows about the importance of immigrants. Yes, that led to a lot of other bad things. Still, people from all over came together to tackle really big problems. No one can know everything. The more diverse viewpoints you can have, the better.

SSC: Jonas Salk was born to immigrant parents.

KB: Yeah! All of the research looking at the economic benefits of first-generation immigrant children, it's incredible.

SSC: You spoke to the *Detroit News* in an article which questioned the "agroterrorism" claim. That's been a rare perspective in the mainstream media. A few days later on July 4, the *Detroit News* printed an article on right-wing congressmen Moolenaar and Walberg's questions to the University of Michigan and used the headline: "Investigators want UM to answer how Chinese nationals conducted potential bioweapons research." So immediately it's back to "bioweapons research," which is an inflammatory description of it.

KB: It is. Well, if it bleeds it leads. They need to sensationalize things. It's all about clicks.

SSC: But the sensationalization lines up with the government's narrative.

KB: Yes.

SSC: With the whole anti-China narrative. Like for Chengxuan Han, the press release for the Department of Justice refers to her as an "alien from Wuhan, China."

KB: Yeah. Under a different Justice Department I think that press release would read very differently.

SSC: Thanks for helping to defend a scientific perspective in the media.

KB: I appreciate it. I read the articles you sent and you seem like a publication willing to get into the nuance. Things aren't just black and white, the world is very gray.

The final thing, we need to track the movement of pests. In this case they went about things the wrong way and it's being, I think, blown out of proportion for other reasons.



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