

Climate of fear

Heavy-handed targeting of ethnic Chinese researchers, students and investors by US funding, intelligence and immigration agencies poses a threat to the American life-sciences sector.

The war of words between the United States and China is turning into something more sinister. The US administration has been ratcheting up scrutiny of foreign researchers under a presumption that they pose a potential threat to security through the leaking of national secrets. In practice, this has meant an increasing number of Chinese scientists have come under investigation either at their workplace or in their homes. The clampdown has engendered an atmosphere of fear among Chinese researchers and students, who feel stigmatized and unwelcome on US soil.

After years where scientific exchanges and collaborations with China were actively encouraged by US policymakers, the new regime has come as a shock. In business, Chinese investment in US enterprises is being blocked, slowing investment and chilling startup creation. In research, many Chinese scientists are reconsidering their place and status in the United States. Together, these actions pose a serious threat to continued US leadership in the life sciences.

There have, undeniably, been instances of intellectual property (IP) and trade secret theft both before and during the recent US–China trade spat. In 2014, the Obama administration warned that economic espionage by China and other foreign actors represented “one of the biggest threats facing the nation.” From 2009 to 2013, the US Federal Bureau of Investigation (FBI) reported a 60% increase in investigations into IP theft.

The vast majority of these cases have involved military or space applications, communications and information technology, semiconductors and electronics. In contrast, comparatively few have centered on biomedical applications. In biotech, stealing a formula or an engineering blueprint rarely enables transfer of invention: innovative biological products cannot be copied (e.g., biosimilars, not biogenerics); innovative biotech products take decades of technical buildup and expertise.

This has not registered with a small band of Republican senators—John Cornyn (Texas), Chuck Grassley (Iowa) and Marco Rubio (Florida)—who have painted McCarthy-esque pictures of a Chinese

conspiracy to, in Grassley’s words, “steal intellectual property and bring it to their home country.” In February, Rubio released a report highlighting the threat of the ‘Made in China 2025’ initiative, singling out biotech as an area for concern. This June, he introduced an amendment that seeks to block the US military from purchasing pharmaceuticals or their ingredients from China.

Under pressure from Congress, US National Institutes of Health (NIH) Director Francis Collins sent a letter in August 2018 to over 10,000 research institutions warning that “foreign entities have mounted systematic programs to influence NIH researchers.” Subsequently, the agency has contacted as many as 60 grant-holding institutions with specific concerns about foreign influence. Faced with the prospect of losing funding, some research institutions have taken action.

In April, the MD Anderson Cancer Center fired three unnamed Chinese-American researchers for breaches of confidential information related to NIH grants and failure to disclose payments. A month later, neuroscientists Li Xiao-Jiang and Li Shihua were fired by Emory University for failing to disclose funding ties to China. These dismissals are responses not to serious incidents of industrial espionage but to infractions of research rules that previously were loosely and haphazardly enforced.

In tandem, US intelligence services have been undertaking a concerted campaign to investigate Chinese scientists. FBI Director Christopher Wray has said that academe is naive about the counterintelligence threats posed by Chinese students and scholars and that the “China threat” is “a whole-of-society threat” that’s “going to take a whole-of-society response.” Almost every one of the FBI’s 56 field offices is pursuing economic espionage investigations “that almost invariably lead back to China.”

At the border, immigration authorities are seeking to stem the flow of Chinese talent. Last year, the US State Department restricted Chinese science and engineering students to one-year visas—from the previous five. Many now report protracted ‘administrative processing’ delays for visa applications. And denials of visa petitions for foreigners seeking to work in US

companies rose by 33% in the first quarter of 2019.

The Foreign Investment Risk Review Modernization Act, passed in 2018, gives the Committee on Foreign Investment in the United States (CFIUS) new powers to regulate acquisitions and investment. Last September, CFIUS blocked a spinout of Momenta Pharmaceuticals to a syndicate of Chinese investors, resulting in a partial shutdown and loss of 110 jobs. In April this year, as related in this issue by Topol and Lee, CFIUS forced Chinese company iCarbonX to divest from the US-based online patient platform PatientsLikeMe.

All these actions are having an impact, but not the one that the US government hoped for.

Biomedical research relies on open collaboration and the free exchange of ideas across borders. Too many US officials seem to be conflating these research activities with industrial espionage. They also underappreciate the importance of Chinese talent to US biomedical research. For decades, Chinese scientists have been part of the fabric of many US labs and behind many of US science’s important discoveries. Every year, 130,000 Chinese students contribute \$12 billion to the US economy. Even a modest reduction in enrollment would devastate US research institutions.

Several US universities, including Berkeley, MIT, Yale and Caltech, have released statements about the importance of Chinese and other foreign talent. More should follow. The US National Academies should speak out, too—as should US biotech industry leaders.

The cost of losing the best and brightest minds—from China or elsewhere—far outweigh the benefits of preventing IP theft, particularly when politicians neglect public research budgets and education. The FBI and NIH may deny racial profiling, but the current climate means any student from China—or researcher of Chinese descent—now questions whether the United States is the right place to work. And Chinese-American researchers are asking, “Are we next?”

Scapegoating and intimidation are not the answer. It is un-American, and it will hurt the US biotech sector. □