OCTOBER 28, 2019



Red Scare

Innocent Chinese scientists in the U.S. caught up in espionage dragnet

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Arrested Development

Chinese scientists in the U.S. work under a cloud of suspicion that can cripple careers and achievements

By RACHEL OSWALD

PALO ALTO, Calif. rofessor Xiaoxing Xi is a soft-spoken man with a slight frame. When he breaks down in quiet sobs, as he does onstage on a recent Saturday at a Four Seasons ballroom, his thin shoulders visibly shake.

His words, however, seem to only be strengthened by his quaking voice.

In front of a spellbound audience of 300 prominent Chinese-American scientists, former government officials, educators, lawyers and activists, the physicist recounted the personal and professional trauma he experienced at the hands of the Justice Department.

Xi tells his story to raise awareness about what he sees as a growing risk of federal government discrimination against ethnic Chinese scientists, many of whom are at the forefront of America's scientific and technological innovations. It's a new form of racial profiling, one that has been dubbed "researching while Chinese." And it is sparking a debate on Capitol Hill about discrimination, national security and technological innovation at a time when tensions with China are at an all-time high.

In May 2015, armed FBI agents roused Xi from bed, then handcuffed and arrested him in front of his terrified family for allegedly sharing sensitive technology with China. While his criminal case dragged out, Xi, who has lived in the United States for decades and is a naturalized citizen, was suspended from

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EXONERATED: Xi, far right, and Chinese-American hydrologist Sherry Chen at a news conference in 2015 after the Justice Department dropped espionage charges against them. Chen had been accused of spying while working for the National Weather Service in Ohio.



his job at Temple University, where he was the interim head of the physics department, and banned from the Philadelphia campus.

"It was overwhelming to think that the most powerful country in the world, the United States, is against me and everything I have worked for over 30 years. The reputation, the career, the livelihood would all be gone," Xi said.

He and his wife, a physics professor at Penn State University, went into debt to pay his legal fees. They were socially isolated as friends and colleagues refused to speak to them. Xi's wife lost sleep and weight due to the stress, but Xi pleaded with his family to not fold.

"If we hold out, we have the truth; if we fold, we will have nothing," Xi recalled telling his wife and daughter.

He was right. After four months, the Justice Department's case fell apart when it became clear investigators had entirely misunderstood the blueprints Xi was accused of sharing. The technology was not sensitive. In fact, it was designed by Xi.

"My wife and I grew up during the Cultural Revolution," Xi said, referring to the upheaval in China from 1966 to 1976 involving political purges, forced relocations to the countryside and pogroms. "We've seen cases that people died because they can no longer stand the political persecution, the false accusation and personal humiliation."

Though the charges were ultimately dropped, Xi and his family suffered significant financial, professional and psychological damage. Xi is now suing the FBI in part to learn how the investigation against him ever began.

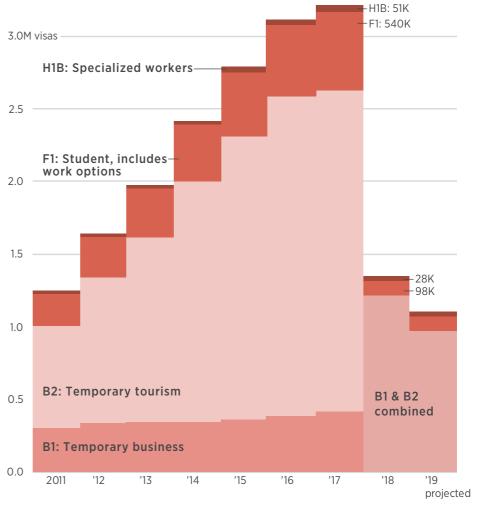
The task before U.S. policymakers is a formidable one. They must balance Chinese-American scientists' fears of discrimination with maintaining national security against an apparent campaign of state-backed economic espionage from Beijing. And all the while protect cutting-edge scientific collaboration, innovation and entrepreneurship in the United States.

"Let's be careful not to overreach with barriers to turn away bright students or cut off lines of communication with scientists from other countries that can end up doing more harm than good," Oregon Democratic Sen. Ron Wyden said at a Finance Committee hearing in June.

"Targeting Americans who happened to

Chinese work visas plummet under Trump administration

The State Department approved fewer than one fifth the number of student/work visas for Chinese nationals in 2018. Over the same period, specialized worker and temporary business/tourism visas fell by about half.



Note: 2019 values projected based on comparing number of visas through August to previous data.

Source: State Department, Homeland Security Department Randy Leonard/CQ Roll Call

be descendants of recent immigrants, in my view, would just be a major mistake."

Collateral Damage

President Donald Trump, mired in a worsening trade war with China, at a dinner last year reportedly said "every student" in the United States from China "is a spy." And FBI Director Christopher Wray has repeatedly stated that visiting Chinese graduate students and researchers are part of a massive economic espionage campaign that warrants a "whole-of-society" response from the United States.

These and other comments from administration officials, coupled with the bad blood created by ultimately abandoned FBI investigations such as the one into Xi, have cast a pall over the U.S. scientific community and the country's Chinese residents.

A 2017 study, commissioned by a group of prominent Chinese-Americans called the Committee of 100, which hosted the Palo Alto conference, showed that from 1997 to 2015 over 20 percent of individuals of Asian heritage prosecuted for economic espionage were never convicted. The cases either were dropped or the individuals acquitted or found

innocent — a rate double that of other races, according to the study. And since 2009, the percentage of those with Chinese heritage charged under the Economic Espionage Act has tripled to 52 percent.

"Many Chinese-Americans have become collateral damage," Gary Locke, a Chinese-American served as both ambassador to China and Commerce secretary during the Obama administration, said at the recent Palo Alto conference. "More stand to become so if we don't do something about it."

Many hawkish lawmakers tend to agree with Wray's calls for an all-out response to countering the threat of economic espionage from China, one that entails tougher regulations — perhaps backed by legislation — over federally funded scientific research, more FBI counterespionage investigations, and greater scrutiny of and visa denials for Chinese scientists working in the United States.

In response, a growing number of high-profile scientists, academics and business community leaders, with some support from Democratic lawmakers, are warning such a response is overblown and would do more harm to America's national security, which has historically rested on a strong and technologically innovative economy, than Chinese espionage itself.

"We do not have an epidemic. We have a few problems. The danger when you have a few problems is that you come up with a cure that is worse than the disease that exists," John Hennessy, chairman of Google's parent company, Alphabet, and former president of Stanford University, told the conference. "It would undermine our ability to be a ... talent magnet for the world and that in the long term will destroy U.S. leadership in science and technology."

Under a Microscope

American companies annually lose an estimated \$180 billion to \$540 billion, or 1 to 3 percent of GDP, because of trade secret theft, according to a 2017 report by the independent, bipartisan Commission on the Theft of American Intellectual Property. And China, the commission said, steals more intellectual property than any other nation.

During the Obama administration, the Justice Department began ratcheting up the resources it spends investigating and prosecuting these crimes. The effort has only ac-



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- XIAOXING XI

celerated under Trump.

Since 2011, over 90 percent of the department's economic espionage prosecutions, which allege trade secret theft by or in order to benefit a foreign country, have involved China, Deputy Assistant Attorney General Adam Hickey said in April.

Against this backdrop, a number of government agencies have recently rolled out new restrictions on federally funded research that appear aimed at China.

In June, the Energy Department began implementing a new directive that forbids any of its employees and contractors from participating in a "foreign talent recruitment program." That language appears aimed at Beijing's "Thousand Talents" program, intended to woo top Chinese scientists educated overseas back to China. The department in January announced that university grantees also could not participate in foreign recruitment programs and receive DOE funding.

And the National Institutes of Health is pressing universities to enforce their disclosure polices on foreign funding and outside employment with foreign institutions, particularly for individual researchers. So far, NIH has left it up to research institutes to decide how to enforce disclosures, but that could soon change. In April, NIH Director Francis Collins told Senate appropriators the FBI was investigating 55 research institutes over problematic foreign connections.

"It's a numbers game. There's so much investment currently in research in China that one turns their attention to it," Lawrence Tabak, principal deputy director of NIH told the American Institute of Physics newsletter in February. "But this is in no way a Chinaspecific issue."

Senate appropriators want NIH to do more. In the committee report for the fiscal 2020 spending bill that funds NIH, senators say they want universities to consider national security in their peer-review vetting system. They also provide \$5 million for an inspector general to assess how well NIH enforces its policies on foreign vetting.

In July, the National Science Foundation, which funds basic non-classified research, announced it had commissioned an advisory group to issue a set of recommendations on how the foundation's grantee institutions can better balance scientific collaboration and national security. NSF has also prohibited participation in foreign talent recruitment programs.

Meanwhile, the State Department confirmed at a Senate hearing in June that it had shortened a more generous Obama-era policy of five-year student visas down to just one year, with the option for annual renewal, for certain categories of Chinese graduate students. News reports said the shortened visas would affect Chinese graduate students studying robotics, aviation, and high-tech manufacturing.

"My post-doc Chinese students are afraid to leave the country because their return is not assured," says David Ho, who was named TIME magazine's man of the year in 1996 for

his development of the AIDS cocktail therapy credited with saving millions of lives. "There is really a chill in the air."

In response to these developments, 60 prominent American science groups, including the Federation of American Scientists and the American Association for the Advancement of Science, sent a letter in September to senior Trump administration officials.

"Our organizations and members are witnessing an escalating concern among U.S. and international scientists that new policies and procedures under consideration to minimize security risks will have the unintended effect of harming the scientific enterprise," the letter reads.

"Many scientists — both U.S. citizens and foreign nationals - who properly follow codes of conduct, regulations, policies and laws, may inappropriately be harmed in response to the misconduct and illegal actions of others."

'Toxic' Climate

For all of those falsely accused, the FBI is nonetheless landing some convictions.

Those cases include a 2017 guilty plea by nuclear engineer and naturalized U.S. citizen Allen Ho of conspiring to illegally export nuclear energy technology to China in violation of the Atomic Energy Act; a 2019 conviction against Yi-Chi Shih, a naturalized citizen and adjunct professor at the University of California, Los Angeles, for illegally seeking to export to China semiconductor chips with a host of military applications; and 2018 convictions against several Chinese scientists who worked together to steal anti-cancer drug research from the British pharmaceutical giant GlaxoSmithKline and give it to a drug company they had formed with subsidies from the Chinese government.

Attendees and speakers at the Palo Alto conference readily acknowledged there are certainly some bad actors. But, they insisted, those bad actors are vastly outnumbered by Chinese and Chinese-American researchers who are innocent of intentional wrongdoing but have perhaps been slow to adjust to operating in a climate of heightened suspicion between Washington and Beijing.

David Ho argues against creating federal regulations and launching sweeping investigations to deal with a "small number of bad apples." Rather, universities should better



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- DAVID HO

enforce existing financial disclosures and other policies.

By overreacting, Ho says, Washington is missing the real threat that it is creating with its actions, which could ultimately drive away talented Chinese scientists.

"There is a real sense of racial profiling among us and it is becoming toxic," Ho says. "It is akin to 'driving while black' and now there is a saying 'researching while Chinese.'"

U.S. Losing Its Edge

America's technological and scientific preeminence today owes much to a key structural advantage it enjoyed for most of the 20th century over other countries: the influx of foreign-born scientists who fled fascism in Europe, the destruction of World War II and communism during the Cold War. That historical "gift," as speakers at the conference termed it, continued into recent times.

Impoverished and underdeveloped following the catastrophic economic policies of the mid-20th century, China in the 1980s and 1990s was still unable to provide the top-tier educational and career opportunities its finest budding scientists craved. And so they emigrated, often to the United States.

Zhe Han was one of those star students. After graduating in 1996 from Peking University, he traveled to the U.S. for graduate school at the University of Michigan and ended up staying. Today, he is associate professor at the University of Maryland's School of Medicine doing cutting-edge research into how genetic modeling can be used to identify cures for kidney and blood diseases.

Han estimates that over half of his graduating class at Peking University, sometimes called "the Harvard of China," settled in the United States.

However, the U.S. today is significantly less attractive as a destination for China's best graduates even as it remains the leader in biomedical research, Han says. He attributes the decline to China's establishment in recent years of many top-tier research institutes and generous state-subsidized salaries for freshly minted PhDs working in the most prized scientific fields. But perceptions abroad of a "toxic" environment for Chinese researchers working in the U.S. are also a contributing factor, he says.

In fact, Han says he has seen a steep decrease in foreign applications to his laboratory. Traditionally, job ads he places for postdocs would receive "hundreds of applications from China and all over the world." His most recent ad garnered just three applications from China.

Likewise, Steven Chu, who served as Energy secretary during President Barack Obama's first term, told conference attendees he has seen a 12 percent decrease in applicants from China for positions at the physics department where he works at Stanford University.

Under Trump, there has been a steep drop in the number of visas approved for Chinese nationals, reflecting both greater U.S. scrutiny of visa applications and a declining interest from China amid a souring of bilateral relations. From 2017 to 2018, there was a 44 percent decline in the number of H1B specialized work visas approved, down to roughly 28,400, and a whopping 82 decline in the number of F1 student visas approved, down to nearly 97,700.

Harsh Reality

The FBI has rationalized its scrutiny on ethnic Chinese scientists, saying it's inevitable due to their disproportionate representation in U.S. academia and scientific industries and the Chinese government's documented efforts to recruit economic spies from their group.

"The reality is that we are the sort of security guards here and security guards chase shadows," John Hemann, an assistant U.S. attorney and head of special prosecutions for the northern district of California, said at the conference. "The question is not whether we're chasing shadows, the question is what we do when we get around the corner and we see what we see when it is a shadow and how we react when we see that it is a real thief."

But by subjecting Chinese researchers educated and working in the United States — a group Beijing calls "sea turtles" — to a heightened level of scrutiny, more of them will be found in violation of rules, including for less serious infractions such as failure to report all foreign funding sources and filing patents in China based on intellectual property partially generated in the U.S.

"Nothing will drive the sea turtles back to their place of birth than a toxic environment," Ho says.

Chu, who received the 1997 Nobel Prize in physics, says he believes universities need to do more to push back against threats to their academic freedom.

"But they are also worried because the Department of Energy and NIH among others are making it very clear if you really push too hard, you may lose funding," he said in Palo Alto. "This is very scary. So for that reason, the universities, they don't know what to do."

Legislative Frenzy

Lawmakers on Capitol Hill are choosing sides in the increasingly heated and fierce policy debate over ethnic Chinese scientists and researchers.

Rep. Judy Chu, who chairs the Congressional Asian Pacific American Caucus, says she has become "vigilant about bad legislation" that would explicitly or implicitly single out Chinese-Americans and visiting Chinese researchers for discrimination.

Speaking at the Palo Alto conference, the California Democrat recalled her efforts to keep out of last year's Pentagon policy bill language proposed by Wisconsin Republican Rep. Mike Gallagher that would single out Chinese workers and students for extra federal scrutiny into their political allegiances.

"I was informed of the insertion of this amendment at the last minute," she said. "I literally ran to the House floor to speak out in protest. I am proud to report that in the end I did get that harmful amendment removed."

Congress ultimately directed the Defense Department to establish an "initiative to support protection of national security academic researchers from undue influence and other security threats." The measure (PL 115-232) required the Pentagon to develop a capability to identify which individuals affiliated with department-funded programs have previously or are currently participating in "foreign talent programs or expert recruitment programs."

But the policy fight has only just begun.

This summer, Hawaii Democratic Rep. Ed Case inserted into the fiscal 2020 Intelli-

GUILTY: Former UCLA professor Yi-Chi Shih was convicted this year of trying to export semiconductors with military applications to China.

gence authorization measure (HR 3494) an amendment that would order the director of national intelligence to assess how intelligence community espionage investigations targeting China affect "the privacy and civil liberties of Americans of Chinese descent" and how those rights can be better protected. The House-passed measure, which was touted as a critical victory at the conference, also acknowledges that China is "specifically targeting the Chinese-American community for intelligence purposes."

On the other side of the debate, companion bills introduced in May by Arkansas Republican Sen. Tom Cotton and Gallagher (S 1451; HR 2713) would order the government to develop a list of engineering and scientific institutes with ties to the Chinese military. Any Chinese student affiliated with a named institution would be denied a student or research visa to come to the United States.

Bicameral legislation (HR 1678; S 1879) from Indiana Republican Rep. Jim Banks and Missouri Republican Sen. Josh Hawley would require exchange students from four countries — China, Russia, Iran and North Korea — to get a waiver from the director of national intelligence before taking part in any "sensitive

research projects."

"Countries like China may use subversive tactics to gain footholds in major STEM programs in U.S. universities to create a pipeline of data and information back to the mainland," Banks said in statement about his legislation.

"We must get tough against these covert threats on college campuses and limit the effectiveness of their informationgathering missions. Clear-eved vigilance is essential if America and our allies are to remain free from Beijing's influence and espionage."

Sentiment in Palo Alto about proposals such as the Banks-Hawley legislation was dour.

"Congress seems to be very invested in legislating some kinds of ham-fisted solutions," says Nelson Dong, a senior partner specializing in national security law with the international law firm Dorsey & Whitney and a member of the Committee of 100.