

Faculty members and graduate students across the system are advocating for themselves by protesting and by filing the lawsuit, but they're also advocating for the staff – “dining workers, landscaping workers, and so on – who are among the most vulnerable in our communities”, says Smith. Workers such as these are exposed to residential students on campus more often than are any other staff.

The UNC system's board of governors did not respond to repeated requests for comment from *Nature*. The board ultimately dictated the system's reopening plans. It is appointed by the Republican-led North Carolina legislature and has been widely criticized by faculty members for prioritizing revenue over safety, and for not delegating more authority to individual institutions in the system.

A growing movement

Activism is also occurring elsewhere in the UNC system. Faculty members at Appalachian State University in Boone, which is still holding in-person classes, passed a resolution expressing “no confidence” in their chancellor for failing to resist the board of governors' mandate to reopen. The chancellor's office did not respond to a request for comment.

Campus workers are organizing to oppose reopenings elsewhere in the country, too. Georgia College in Milledgeville is open and requiring in-person, teaching despite 686 cases in a campus community of just 8,000. On 28 August, graduate students and staff organized under the United Campus Workers of Georgia staged a die-in – in which participants lay down next to temporary grave stones, spaced apart in a nod to social-distancing measures – to protest against the risk they say reopening poses. “It was kind of a sombre event,” says Jessica McQuain, a master's student in English at the university who organized the protest.

Melanie DeVore, a palaeobotanist, is teaching nearly 100 students in person this term at Georgia College. To keep her infection risk low, DeVore got permission to teach outside on a deck. She compares the in-person teaching requirement to the 1979 film *Alien*, in which a spaceship crew discover that although their mission is top priority, they themselves are expendable. And she, like many others, attributes the requirement to teach in person to the university's focus on its finances. “We are backed into a corner because of the business model of the universities,” she says.

A spokesperson for Georgia College replied to *Nature*'s interview request with a statement: “Georgia College fully supports the freedoms of speech and expression for our faculty, staff and students.” The statement goes on to say that “the health and well-being of our students and campus community will always be our top priority”.



The Trump administration has accused China of stealing US intellectual property.

US CRACKDOWN SPURS FEARS OF CHINESE BRAIN DRAIN

An exodus of foreign-born scientists would be a great loss for US science, say research leaders.

By Andrew Silver

Scientists in the United States are concerned that their government's crackdown on foreign interference at universities is driving away scientists of Chinese descent. Their exodus would be a loss for US innovation, according to extensive interviews *Nature* carried out with scientists and research leaders.

“There are certainly people leaving,” says Steven Chu, a Nobel-prizewinning physicist at Stanford University in California, who was secretary of energy under former US president Barack Obama.

The research community has been increasingly feeling the effects of US–China political tensions. US politicians – including President Donald Trump – have accused the Chinese government of using students and researchers to illicitly acquire US knowledge and intellectual property, allegations that the Chinese government has repeatedly denied. Since 2018, US government agencies have unveiled increasingly strict visa restrictions for Chinese nationals, and tighter controls on what research can be shared with China.

US researchers with ties to China who are

funded by the National Institutes of Health (NIH) or the National Science Foundation (NSF) have also been investigated for potentially violating funding rules. The NIH said in June that it had investigated 189 researchers who might have violated grant or institutional rules on research integrity. Of these researchers, 93% had ties to China and 82% were Asian. And in the past two months, four researchers from China working in the United States have been charged with visa fraud for allegedly failing to declare links to China's military, a development that marks a new chapter in US–China science relations.

The latest arrests are another example of the US government cracking down on Chinese scholars, says Jessica Chen, an immigration lawyer in Houston, Texas, who has been contacted by researchers for help with immigration issues. Chen says the arrests are part of a pattern of actions that have created a fearful atmosphere and made researchers think about leaving. People cannot focus on their work when they are concerned that they might be investigated or accused of spying, she says. “This creates a truly oppressive environment in which to try to perform research.”

Several scientists who spoke to *Nature*

say they know of researchers with Chinese backgrounds who have left the United States because they felt nervous or unsafe. Alice Huang, a biologist at the California Institute of Technology in Pasadena and vice-president of the 80-20 Educational Foundation, an advocacy group for Asian American equality, says she knows of around four researchers of Chinese descent who were US citizens and have left the country in the past two years. Some left because they felt they were being targeted by the FBI or NIH, or feared being investigated by them. But she thinks the numbers of researchers leaving the United States are much greater than the cases she's heard about. "We are damaging our own scientific enterprise," says Huang.

Chu knows of a Chinese national who earned a US PhD but has accepted a faculty position in China because of a perceived unfriendly environment in the United States. And he says he's heard from researchers working in science, engineering, technology and mathematics (STEM) who feel unwelcome, or who worry about losing out on jobs or competitive funding because of their country of origin. "I'm trying to convince these people not to go back [to China]," he says. "If it wasn't for immigrant scientists, we would be a second-tier STEM country." However, Chu notes that some researchers are leaving for good opportunities in China.

Researchers of Chinese descent in the United States are also increasingly seeking legal advice because they're concerned they'll be investigated by the government or their institution, says Frank Wu, president of Queen's College, City University of New York, who helps researchers to find suitable lawyers. He says that in the past two years, he's gone from receiving no calls from researchers seeking lawyers to receiving dozens of calls. "They're worried their lives will be ruined for no good reason," he says.

It's difficult to measure whether a significant number of ethnic Chinese scientists have been leaving the United States in response to the government crackdown. Those kinds of data aren't routinely collected, says Brad Farnsworth, vice-president for global engagement at the American Council on Education in Washington DC. But he says that ethnic Chinese researchers in the United States have become even more worried about being under scrutiny since Charles Lieber, a chemist at Harvard University in Cambridge, Massachusetts, was arrested in January for allegedly making false statements about his ties to China. "The level of anxiety has definitely gone up," Farnsworth says.

Concerns about racial profiling

Some scientists and US lawmakers have raised concerns that the government crackdown is verging on racial profiling – the practice of targeting people because of their racial or

ethnic background. The concerns sparked a formal investigation by Congress's House of Representatives. In February, representatives Jamie Raskin and Judy Chu, both Democrats, sent letters to the FBI and NIH requesting details of practices that they thought to be suggestive of racial profiling, such as reportedly encouraging universities to scrutinize Chinese Americans or researchers with connections to China. The letter to the FBI also mentions a 2018 study that found that 52% of individuals charged by the US Department of Justice with

"If it wasn't for immigrant scientists, we would be a second-tier STEM country."

economic espionage since 2009 have been of Chinese heritage (A. C. Kim *Cardozo Law Rev.* 40, 749–822; 2018). But those people were more than twice as likely to be acquitted or have charges against them dropped compared with non-Asian defendants.

Raskin told *Nature* by e-mail that he has received responses from the agencies, and had a briefing with the NIH. "While I get the serious national security implications of Chinese government espionage, none of that justifies dragnet-style ethnic profiling of U.S. citizens who are Chinese-American," he says. "What distinguishes us from authoritarian governments is our Bill of Rights and commitment to the civil liberties and equal rights of all citizens."

The agencies have denied that racial profiling

is happening. An FBI spokesperson told *Nature* in a statement that it does not conduct investigations based solely on race, ethnicity or national origin into unlawful activity or threats to national security. "It would not be appropriate for the FBI to ask any university, company, or other entity to profile individuals based on their ethnicity," they wrote. The FBI also stated that it does not comment on engagements with Congress.

When asked to comment on the House investigation and the letter from Raskin and Chu, an NIH spokesperson told *Nature* that it does not comment on continuing investigations. The spokesperson noted that most researchers are honest contributors to the advancement of scientific knowledge. But over the past few years, the agency has been made aware of subversive efforts by foreign entities to coax US scientists to violate the terms and conditions of grant awards for personal gain. When the agency identifies threats, it notifies grant institutions and asks them to investigate, they said.

The Department of Justice does not target researchers for prosecution based on their ethnicity, says Adam Hickey, a deputy assistant attorney general at its national security division. But he agrees that many people prosecuted under the department's 'China Initiative', a programme to counter intellectual-property theft or economic espionage involving China, have been people of Chinese heritage. The initiative has led to several prosecutions of academics – mostly involving tax evasion, grant fraud or making false statements about overseas affiliations.

WHY ARCTIC FIRES ARE BAD NEWS FOR CLIMATE CHANGE

Unprecedented wildfires released record levels of carbon, partly because they burnt peatlands.

By Alexandra Witze

Wildfires blazed along the Arctic Circle this summer, incinerating tundra and blanketing Siberian cities in smoke. By the time the fire season waned at the end of last month, the blazes had emitted a record 244 megatonnes of carbon dioxide – that's 35% more than last year, which also set records. One culprit, scientists say, could be peatlands that are burning as the top of the world melts.

Peatlands are carbon-rich soils that

accumulate as waterlogged plants slowly decay, sometimes over thousands of years. They are the most carbon-dense ecosystems on Earth; a typical northern peatland packs in roughly ten times as much carbon as a boreal forest. When peat burns, it releases its ancient carbon to the atmosphere, adding to the heat-trapping gases that cause climate change.

Nearly half the world's peatland-stored carbon lies between 60 and 70 degrees north, along the Arctic Circle. The problem with this is that historically frozen carbon-rich soils are expected to thaw as the planet warms, making