

# "Tougher visa rules to stop terrorism hamper research"

Many foreign scientists delayed or prevented from coming to the U.S.; 'We're very frustrated'

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Hunting world-class talent for a new multimillion-dollar medical research center, [Johns Hopkins University](#) officials thought last spring that they had found the ideal candidate in a Yale molecular biologist named Heng Zhu.

A rising star in the new field of proteomics, Zhu was being courted by laboratories in Canada and Germany. So Hopkins wasted no time. They whisked the 35-year-old Chinese scientist to Baltimore to meet the faculty, enlisted a real estate agent to sell him on the city, then handed over an offer described as "very generous." Zhu was impressed.

But then the university ran into a problem nobody counted on: the great wall of the post-Sept. 11 U.S. bureaucracy.

This month, the U.S. Embassy in Beijing refused to issue Zhu's fiancée a visitor's visa, concerned that she might never come back. For Zhu, who recently returned from a devastating year stranded in China because of his U.S. visa, the predicament has forced him to rethink his future in this country. In the next few weeks, he says, he'll decide whether to stay or go.

"We're very frustrated," says Philip Cole, director of the pharmacology department and a leader of the university's recruitment effort. "We could lose someone very valuable."

It's a story that has become increasingly common at laboratories around the country. As foreign scientists and occasionally their significant others become ensnared by strict new visa regulations meant to help stop terrorism, experts worry about its effect on recruitment and research.

"Recent efforts by our government to constrain the flow of international visitors in the name of national

security are having serious unintended consequences for American science, engineering, and medicine," the National Academies of Sciences warned in December.

In recent months, foreign scientists have been barred from attending scientific conferences here, while overseas students have missed entire semesters waiting for U.S. embassies to approve their visas. Researchers working or studying in the United States, meanwhile, are afraid to return home. Those who do can find themselves locked out when they try to come back.

"Science is a little bit like road kill in all of this: It's not the intended target, but it's getting caught up in the larger problem of security," says Albert H. Teich, director of Science and Policy Programs at the American Association for the Advancement of Science.

While many in the scientific community support the need for more rigorous screening, they worry that it is occurring at the expense of U.S. science. The visa policy, says Teich, "could very easily discourage foreign students from even applying here."

Foreigners form the backbone of academic research in the United States, making up more than one-third of Ph.D. recipients in science and engineering, according to the National Science Foundation. In fields such as the physical sciences and engineering, nearly half of graduate students are foreign-born.

## **The life of projects**

"Research projects live and die by these people," says Valerie Woolston, director of the University of Maryland's Office of International Education Services, which handles visas for foreign students and faculty.

It's unclear how many scientists have been delayed or denied entry into the United States or how many research projects have been disrupted. But anecdotal evidence suggests that the effects are widespread.

The American Physical Society, which represents physicists, has logged more than 100 instances of foreign researchers delayed or denied access to the United States for conferences or for work.

This year, The Hartford Courant documented more than two dozen scientific projects at 20 universities significantly disrupted by visa delays. Many of the projects are underwritten by U.S. taxpayers. Researchers working on a West Nile virus vaccine, biological warfare detectors and AIDS drugs have seen key foreign scientists at their labs held up or blocked from coming to the country.

Arthur Broom, a medicinal chemist at the University of Utah, reluctantly shut down a search for new HIV drug candidates when his Egyptian collaborator, Tarek Aboul-Fadl, was not allowed to return to the United States after taking his family home to visit.

"I was mad as hell," says Broom. "And I still am. It's impossible to know what would have been discovered and wasn't."

The regulations are also causing increasing hardships for universities, depriving them not only of scientific talent but of people needed to teach undergraduates and contribute to departmental coffers.

## **Effect on universities**

Jordan Goodman, chairman of the [University of Maryland, College Park](#) physics department, says a talented Chinese student who was the department's top recruit looks iffy for the fall because of visa troubles. As a result of cases like this, Goodman says the department has reluctantly begun admitting fewer foreign graduate students to avoid budgetary and scheduling chaos.

Twenty percent of foreign physics graduate students were delayed or denied entry into the United States during the last academic year, according to a new survey from the American Institute of Physics.

Universities and scientific organizations fear the logjam may soon grow worse. On Aug. 1, U.S. embassies will be required to conduct face-to-face interviews with many academic and scientific visa applicants, potentially swamping overburdened Foreign Service officers.

"Visas issues aren't a completely new problem," says Goodman. "But it's been exacerbated to the point where it's a nightmare."

The State Department, which processed nearly 8 million visa applications last year, says it is working to ease the delays experienced by foreign scientists. "But security concerns remain paramount," says spokesman Stuart Patt.

As a first step, the State Department decided last month to exempt federal workers and grantees from its security review, after national laboratories complained that foreign employees were being held up at the borders.

The waiver does not apply to university students and researchers, who under post-Sept. 11 regulation changes must typically wait weeks or months for the FBI and the CIA to sign off on their applications.

Some foreign scientists, officials say, are receiving more scrutiny than others. Scientists from 26 Muslim countries are subjected to rigorous screening. So are those from Russia and China, mostly because of U. S. concerns about possible theft of sensitive technology, says Lois Peterson, assistant director of the Board on International Scientific Organizations.

Patt adds: "We also have a lot of Chinese students who come to the U.S. and don't go back home."

For foreign scientists, being stuck overseas can be devastating.

## **Eight-month delay**

When her parents were killed in a car accident in September, University of Utah physicist Xiaomei Jiang rushed home to China with her husband and 8-year-old daughter. When she tried to get back to her Salt Lake City laboratory, she couldn't. It was mid-May by the time the U.S. consulate in Chengdu finally approved her visa.

The eight-month delay pushed back her doctorate by a year and put her scientific collaborators in the United States in a lurch. Since her return, Jiang says she has been forced to redo many experiments because her earlier results were too dated. "Our life was completely screwed up," says Jiang.

At Yale, molecular biologist Zhu's life was similarly in disarray when he finally returned to the United States on April 23, more than a year after he left to renew an expired visa.

Zhu, who graduated from Peking University and earned his doctorate at Clemson University in South Carolina, was unable to do any experimental work in China, only write a few papers. "It was totally wasted," he says.

The foundation sponsoring his research temporarily suspended his \$128,000 fellowship. Bills piled up. He lost his apartment, and his 2000 Honda Civic was repossessed. Since his return, he has been considering filing for bankruptcy.

His time in China wasn't totally unproductive. He was in

vited to visit the University of Toronto and the prestigious European Molecular Biology Laboratory in Heidelberg, Germany, both of which are eager to hire him. He also met the woman he expects to marry.

Zhu says he cannot except a job in Baltimore unless his fiancée visits and approves. "I definitely want to keep her happy," says the scientist. "A family is very important to my personal life and my career."

Hopkins officials are eager to hire Zhu for its new High Throughput Biology Center, which will be the centerpiece of the nearly finished Broadway Research Building. Zhu is at the forefront of protein chip technology, which allows researchers to unravel how disease-causing agents operate.

"He's very innovative and technology-savvy," says Jef Boeke, a Hopkins molecular biologist and

director of the new center, which will open in January. "He's really unique."

Desperate university officials have enlisted the help of Sen. Barbara A. Mikulski, who wrote a letter of support to consular officials in Beijing. Last month, they also dispatched neuroscientist Min Li, a native of China and member of Zhu's recruiting committee, to Shanghai to persuade the scientist's fiancée to hang in there.

## **Time's running out**

But for Hopkins, time may be running out. On July 1, her tourist visa was denied. And Zhu says his other prospective employers are pushing him to make up his mind soon.

"I got contracts sitting on my desk waiting for my signature," says Zhu. "I don't know how much longer I can wait."