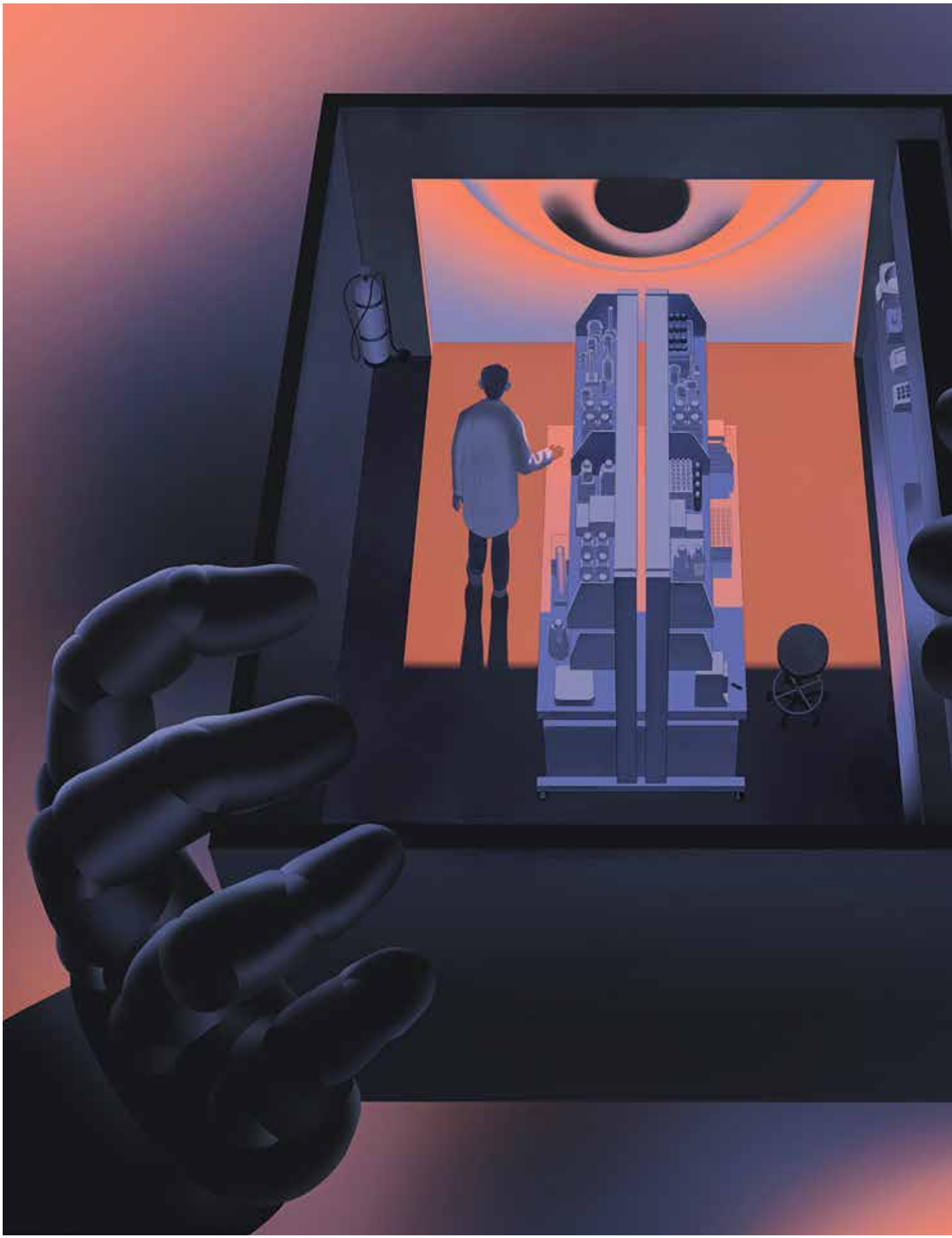


In 2018, Donald Trump's Department of Justice launched the China Initiative, to combat espionage. Franklin Tao was the



first academic arrested.

ILLUSTRATION BY JUN CEN

A REPORTER AT LARGE

DANGEROUS MINDS

The government hunted Chinese spies on campuses. Did it go too far?

BY GIDEON LEWIS-KRAUS

In late August of 2019, Franklin Tao, a forty-seven-year-old chemistry professor at the University of Kansas, departed China with just enough time to make it home for the fall semester. Tao is short, with a high forehead and a spiky hairline that give him the cautiously inquisitive appearance of a hedgehog. He had spent the spring and summer tending to his ailing mother in China's interior, and visiting collaborators at Fuzhou University, on the country's coast. Tao's wife, Hong Peng, had booked his return trip to the United States, and, in the interest of thrift, had arranged an itinerary of almost unfeasible complexity. Tao flew from Fuzhou to Beijing, then to Tokyo's Haneda airport, and only then realized that his connection to Chicago left from Narita airport, fifty miles away. Tao hailed a taxi and instructed the driver to hurry, but at the destination his credit card was rejected. The driver escorted him to an A.T.M., but his bank card was also declined. Tao produced a business card and promised that he would settle his account somehow. To his astonishment, he told me recently, the driver agreed. He felt lucky that he wasn't in China, where an untrusting cabbie would likely have taken him directly to the police, who weren't known for their forbearance.

Tao was the last passenger to approach the jetway, and his boarding pass was given an extra check by a muscular man in uniform. While he was in the air, Peng dropped off their fourteen-year-old twins for their first day at Free State High School. She then returned to the family's new home, a modest, greenish four-bedroom with brick trim in a mazy subdivision of Lawrence, Kansas, to study for her medical boards. Peng had been trained as a radiologist in China, but her husband's all-consuming work had been cause to delay her American licensure. For the past seventeen years, she had worked as an imaging technician; patients often told her that she would make a good doctor.

Around nine o'clock, Peng heard a knock on the door, which she opened to find a phalanx of F.B.I. agents, their cars and mobile-lab vans bottlenecked in the leafy cul-de-sac. They produced a search warrant, telling her only that it had something to do with her husband. She invited them in, confident that there was some misunderstanding. Her first thought was to reschedule a handyman's visit, which, under the circumstances, would have been embarrassing. The objects she had just unpacked—commemorative plates, neglected cacti—were removed from shelves and left in disarray; sealed boxes were torn open. The F.B.I. agents took everything with Chinese characters on it, including a souvenir from the prestigious Fudan University. Peng could see, through the windows, her new neighbors gathering to watch.

A few hours later, Tao deplaned in Chicago and was greeted by two agents from the Department of Homeland Security, who diverted him for questioning. What was the purpose of his travel to China? To care for his mother, who in recent months had twice attempted suicide. Was he travelling with cash? About sixty dollars. Had he ever travelled to Iraq, Yemen, Sudan, or Syria? No. His bags were searched before he was released. His flight to Kansas wasn't until the next morning, so he spent that night in the airport to save money. "This was normal for my life," he told me.

Tao hoped that his ordeal was over. The phone he carried was Chinese—like many visitors, he hadn't taken his U.S. mobile to China—and didn't get service in America. It wasn't until Peng met him at the airport in Kansas City that he got a full account of the F.B.I. intrusion. He had been awake for three days straight, and merely glanced at his home's disorder before retiring to

bed. He was awoken by the arrival of federal agents, who handcuffed him. Other agents, he said, covered the rear exits. Disoriented, he hardly knew how to protest. As he was hauled to the car, he called out to Peng, "I've made such a contribution to K.U. How could they treat me like this?"

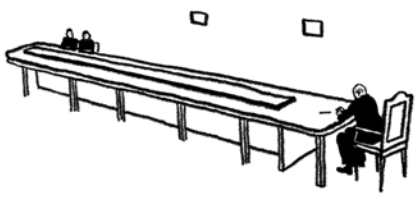
Tao was arrested under a program called the China Initiative, begun by Donald Trump's Department of Justice in 2018 to combat Chinese espionage. According to Jeff Sessions, the Attorney General who launched the Initiative, China had designs on American scientific prowess, and was running missions against targets "like research labs and universities." In the summer of 2019, an F.B.I. agent told a magistrate judge that the Bureau had received tips from multiple sources that fingered Tao as an instrument of the Chinese state. The evidence suggested that Tao had concealed an affiliation with a talent-recruitment program in China, which had secured him a shadow post at Fuzhou University. Tao was indicted for having failed to disclose his Chinese ties, but to the prosecutors he was a clandestine agent who got off easy. Tony Mattivi, then an Assistant U.S. Attorney in Kansas, told me that the arrest had put an end to an ongoing intelligence operation: "We disrupted the transfer of American intellectual property to China by discontinuing Dr. Tao's ability to transfer that information."

When the F.B.I. left, one of Peng's new neighbors enfolded her in an unexpected embrace and said, "You know your husband." Peng could barely keep herself together. She hadn't had time to cook for her children, who were at soccer and tennis practice, so she went to a Burger King drive-through, but forgot to pick up the food before driving away. She did, however, summon the presence of mind to contact a colleague of Tao's in Japan, who paid the taxi-driver.

At the local jail, a technician taking Tao's prints noted that there was something strange about his fingertips, as if they had been intentionally disfigured by cross-hatching. Tao repeatedly asked to call his wife, he said, but the officers acted as if they couldn't understand his English. Peng prepared to post the deed to their new home as collateral, and to surrender her naturalization certificate and the American passports of her children, but Tao was denied bail. Mattivi claimed that he presented a flight risk. After the hearing, Tao was returned to his cell, where the prisoner in the adjacent cell looked him over. "I just saw you on TV," he said. "You're a K.U. professor, and a spy for China."

There is a long-standing conflict between scientists, who see themselves as citizens of a cosmopolitan republic of unrestricted inquiry, and the state, which is likelier to assign a property value to knowledge. Benjamin Franklin held that "science must be an international pursuit" in service of the "improvement of humanity's estate." He never sought to monetize his inventions, and shared the fruits of his research with friends and rivals alike. But what looked to some like the magnanimous diffusion of progress looked to others like theft. During the Industrial Revolution, Britain declared the emigration of skilled artisans and the export of specialized machinery treasonous. Alexander Hamilton, unimpressed, paid bounties to anyone who could deliver British manufacturing secrets, and espionage drove the growth of the American textile industry.

Since then, it has been largely taken for granted that developing nations will find a way to free-ride on the novelties of their more advanced peers. Scholars of international relations call this the



"advantage of backwardness," and it hasn't always been considered a bad thing. In the period between the World Wars, when the Soviet Union industrialized, American companies sent thousands of engineers to assist; in 1929, the Ford Motor Company provided for the reproduction of an entire factory, and supplied technical personnel to help the Soviets get it running. The U.S. government's attitude was that such generosity was none of its business.

The Second World War made this mood of permissiveness obsolete. In 1950, Klaus Fuchs, a German physicist who contributed to the Manhattan Project, was arrested for sharing sensitive information with the Soviets; his betrayal allowed Joseph Stalin to learn about the atomic bomb before Harry Truman did. By 1953, more than half of all research in the U.S. was federally backed, and ninety per cent of the funding flowed from the Pentagon. With the money came unprecedented secrecy regulations and loyalty oaths. John Krige, a historian of science and technology, told me that academics accepted the compromise: "They were willing to sacrifice a certain amount of freedom to publish as long as the spigot was open."

There was, however, collateral damage. As the historian Mario Daniels recently wrote, "In such a chilly environment, scientific internationalism appeared highly suspicious, as did the leftist political leanings that were its frequent bedfellows." After the war, J. Robert Oppenheimer, who had presided over the Manhattan Project, expressed reservations about the development of the hydrogen bomb. His enemies, referring to his associations with the Communist Party, accused him of being a spy. President Eisenhower, unconvinced, nonetheless ordered a "blank wall" erected between Oppenheimer and any nuclear secrets, and his scientific career was effectively put to rest.

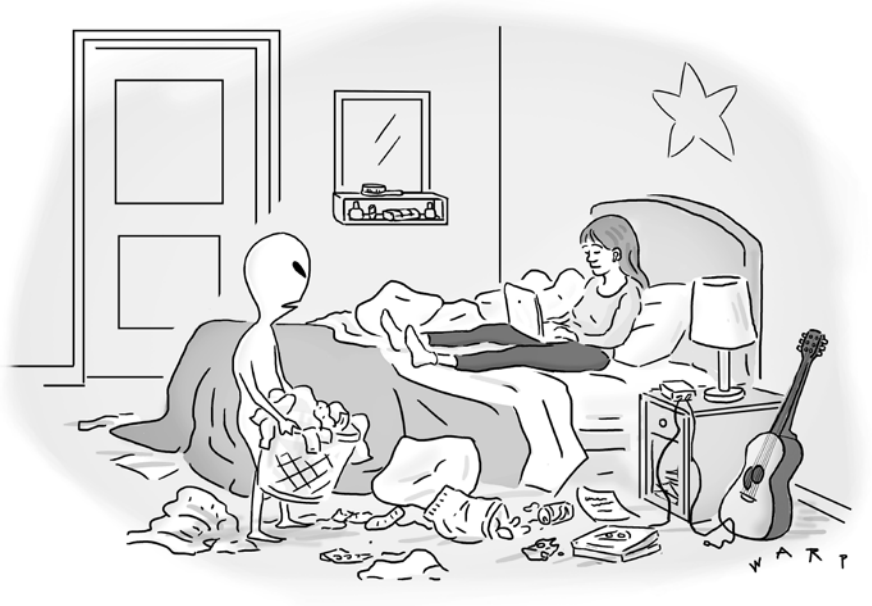
Private companies were still generally left to their own devices. But in 1996 Bill Clinton signed the Economic Espionage Act, making the theft of trade secrets—an active pursuit of at least two dozen countries—a federal crime. The law was most proximately motivated by anxiety about Japan's technological prosperity; according to one account, Japanese industrial spies occupied two complete floors of a Manhattan skyscraper. (The law also justified the continued allocation of resources to the intelligence community in the absence of an ideological adversary.) After this, the economic competitiveness of domestic firms was sacralized as a national-security priority.

By 2009, when the F.B.I. dedicated a new unit to economic espionage, concerns were focussed on China. In 2014, the Department of Justice indicted five

members of China's People's Liberation Army—hackers with aliases like UglyGorilla and KandyGoo—for industrial cyberattacks. The next year, Xi Jinping unveiled the Made in China 2025 plan, which identified a catalogue of technologies that was broadly understood to represent an international shopping list. The consequences—for defense, economic competitiveness, and human rights—were potentially grave, and the Obama Administration's attitude hardened in response. To educate the public, the F.B.I. produced a threat-awareness film, "The Company Man," which renders the apparently true story of an engineer tempted by Chinese bribery in the style of after-school drama; one expects it to end with the Chinese criminals' being forced to smoke the entire pack of cigarettes.

When Trump came to power, he was quick to ring the alarm about China, which he said was "raping our country." In November, 2018, Sessions held a press conference to announce the China Initiative. Our innovations, he said, "can be stolen by computer hackers or carried out the door by an employee in a matter of minutes." As a showpiece, Sessions—who would be fired by Trump six days later—unveiled an indictment alleging that spies had targeted an Idaho-based maker of semiconductors. This was the first such program to be dedicated to the actions of a single country. Trump reportedly said at the time, of people from China, "Almost every student that comes over to this country is a spy." Tao was the first academic arrested under the Initiative.

Franklin Tao was born Tao Feng in 1971, in a mountain village on the Yangtze River. The child of subsistence farmers, he often had little more to eat than cornmeal mixed with water. "The older men in my family were tall, but childhood malnutrition stunted my growth," he told me. While his mother worked in the fields, he stood on a rickety stool to chop vegetables, and his fingertips were soon etched with scars. In middle school, his science teacher told him that one could make anything using chemistry, including medicine, but what particularly captivated his imagination was the idea that food could be created with only yeast.



"When are you going to realize you're not the only being in the universe?"

• •

Tao was the first student at his high school in three years to pass the national college-entrance exam, and he attended college in Chongqing. "I read my textbooks and saw that most things had been discovered by scientists in the Western world," he told me. "I wanted to study with the people who invented and discovered these things." In 2002, months after he and Peng married, the couple moved to Princeton, New Jersey, for his doctorate. His adviser, Steven Bernasek, told me that Tao was "an incredible student, one of the very best I've ever worked with—very creative, very hardworking, filled with ideas." Tao never missed a day in the lab, and in four years completed a formidable dissertation and published fifteen papers. He felt free and happy. When the couple's twins—a girl and a boy—were born, they were both named, with respectively gendered variations, after Bernasek; upon each was bestowed the middle name Princeton.

Tao studies an arcane subfield of chemistry that focusses on how chemicals react on the surfaces of substances. As a postdoc at Berkeley, he learned to use a technique called ambient-pressure X-ray photoelectron spectroscopy, which allows for precise analyses of these reactions; though AP-XPS experiments involve highly constrained, artificial conditions, the resulting theoretical insights may eventually provide a basis for the development of clean-energy sources. The work was fiendishly difficult, but Tao found solace in Christianity, later rechristening himself Franklin, after the church in which he was baptized. Peng, who kept deferring her own professional ambitions, told me, "He should not have married me but married science."

In 2010, Tao entered the job market. He was offered a fellowship at Oak Ridge National Laboratory, historically home to a range of classified research, and cleared a background check, but ultimately decided that he preferred a university environment. He was invited to interview at M.I.T., but before he could travel to Cambridge he received a take-it-or-leave-it offer from Notre Dame. The university promised to purchase him an AP-XPS machine—a room-size collection of dials, hoses, and domes that looks like a child's retro-futuristic notion of a time-travel device—to support his experimental program, and he accepted. Before long, he received a prestigious grant from the National Science Foundation for about six hundred thousand dollars and another from the Department of Energy.

After four years, Tao was lured by a friend to the University of Kansas to help

build a new program there. Kansas was not quite what he had envisioned—the lost M.I.T. interview was never far from his mind—but he would be hired with tenure. In August of 2014, Tao, his family, and more than a million dollars of federal grant money moved to Lawrence. In the meantime, his friend had second thoughts, and left Tao to build the new program alone. During Tao's first semester of teaching, his father's health deteriorated. He made the four-day journey home, and when he returned after his father's funeral, a month later, student complaints about his absence had been registered in his file.

Two years later, Tao was passed over for an anticipated promotion. He found this baffling. He published about fifteen papers per year, most of them in his field's top journals; in his estimation, he produced a quarter of his department's output. But he wasn't a schmoozer. One recent postdoc told me, "You saw other faculty members in the department go to lunch together and whatnot, but Franklin spent all his time working." His lack of "soft skills," as a former student delicately put it, made recruitment a challenge, and some researchers switched groups. The smartest of his American students, Tao noticed, preferred industry to scholarship, so he scouted for talent abroad. "Go to any research-university campus at 10 P.M. and knock on the door of a lab, and a lot of the researchers still working are going to be Asian," he told me. In retrospect, Tao thinks that his single-minded ambition may have been his downfall. "We were encouraged to apply for grants from the funding agencies, and I was very successful," he said. "But if I'd just taught they couldn't have charged me."

The Trump Administration's forays into academia, where the distinction between routine coöperation and impropriety can be nebulous, proved more troublesome than officials may have expected. The D.O.J. had been emboldened by the successful prosecution of more straightforward cases of industrial espionage. In 2013, Xu Yanjun, a senior operative in Jiangsu Province's Ministry for State Security, reached out, under various aliases, to experts at American aerospace companies, offering them paid travel expenses and stipends to give presentations at Chinese universities. In 2017, he narrowed in on an employee at G.E. Aviation, seeking information related to composite fan blades used in jet engines, which the Chinese had been unable to replicate. The employee contacted the F.B.I., which instructed him to hand over dummy documents and eventually to arrange a meeting in Belgium, where Xu was arrested. For the Administration, such activity was only the most visible aspect of a more submerged menace. In 2018, Christopher Wray, the director of the F.B.I., testified before the Senate that China represented a "whole-of-society threat," and that its intelligence efforts were now exploiting "nontraditional collectors—especially in the academic setting, whether it's professors, scientists, students."

China was indeed interested in annexing the world's research-and-development base. In the nineties, it inaugurated a raft of "talent programs" designed to encourage Chinese researchers to return from overseas posts. The prospect of repatriation apparently held little appeal, so subsequent programs allowed recipients, either Chinese expats or Westerners, to maintain jobs elsewhere as long as they spent some time contributing to scientific infrastructure in China. The country spent lavishly—by one estimate, two trillion dollars in the past decade, more than its military budget—to subsidize salaries, startup costs, and living expenses for scholars who might seed domestic programs with the newest techniques. For researchers, the benefits were obvious: whereas American science funding had been relatively flat for three decades, Chinese expenditures increased by an average of sixteen per cent every year. American universities had long been encouraging collaborations in China, which were not only productive but could be lucrative.

For those inclined to take a zero-sum view of our rivalry with China, the talent programs were easily construed as a hazard. If China could simply import basic research wholesale, it could devote its own resources to breakthroughs that might have commercial or military applications. A former U.S. government official, who worked on these issues for various intelligence agencies, told me, "This was all a literal policy plan. Back in 2014, Xi Jinping said, 'Our national power is going to be science and technology—that's how we're going to be a superpower, and we're going to displace the U.S.' It's not a global collaboration to further science." He continued, "The idea is: 'We're going to set up a parallel lab at our institution to



"I knew the indoor pool was too good to be true."

replicate the work you're doing in the U.S. We're going to place researchers at your parallel lab in China. You're going to train them up in the U.S. so they can come back. You're going to take the federally funded research at your facility and run it in China so we don't have to pay for it.'"

Trump Administration officials blamed American academics for being naïve collaborators, warning them in one F.B.I. memo that China "does not play by the same rules of academic integrity." (The memo goes on to assert that the annual cost of stolen intellectual property is "between $225 billion and $600 billion," oft-repeated numbers that Mara Hvistendahl, in "The Scientist and the Spy," her account of Chinese economic espionage directed at Monsanto, shows to be essentially made up.) Most of the examples provided were drawn from industry, and the particular campus peril was left vague. Andrew Lelling, the former U.S. Attorney in Boston and one of the architects of the China Initiative, told me that the point was to encourage transparency: "The government was worried that there was a huge amount of collaboration with the Chinese that nobody knew about, and that was true!" F.B.I. agents toured American campuses to make their case, but the meetings often ended in mutual incomprehension.

The academic skepticism was not unwarranted. Participation in a talent program is not illegal. Plenty of countries have similar incentives to encourage technological development, and scientific expertise is necessary to determine what kinds of collaboration are improper. In 2015, the physicist Xiaoxing Xi was arrested at gunpoint in front of his family for sending sensitive blueprints to Chinese colleagues; he faced eighty years in prison. It later came out that the F.B.I. hadn't bothered to consult anyone trained to read the blueprints, which were actually for something anodyne. Classified research occurs at national laboratories; most college professors couldn't understand what their work—which was invariably destined for open publication—had to do with national security. "When the F.B.I. people left the room, everyone looked around at each other and said, 'They have no idea how science works,'" a former senior State Department official told me. " 'We don't have trade secrets and we don't work on anything that's classified.' "

University administrators could ignore the F.B.I., but they couldn't ignore major funders. In August of 2018, the National Institutes of Health sent more than ten thousand letters to academic institutions saying that it had reason to suspect that "systematic" attempts to steal intellectual property were under way, and advising them to pay attention to scientists who didn't disclose foreign ties. Some letters mentioned individual scientists, whose names had been drawn from research papers where Chinese institutions were listed before American ones.

Shortly afterward, the F.B.I. investigated several Chinese researchers at M. D. Anderson Cancer Center, at the University of Texas. According to the N.I.H., one scientist had violated peer-review confidentiality by forwarding grant proposals to colleagues in China. This, in theory, could allow biomedical patents to be filed in China before the U.S. Another offered to bring proprietary DNA samples to collaborators in a Chinese lab, a clear example of academic misconduct—though not one that had any bearing on state secrets. Federal prosecutors weren't able to translate their misdeeds into actual crimes. Nevertheless, several doctors were fired. One epidemiologist, who had worked at the institute for two decades and twice turned down Chinese talent programs, ended up back in China. The government seemed to have lost a sense of proportion. "They're going after oncologists," the former State Department official said. "We used to collaborate with the Chinese on a cure for cancer, and that was good, and now it's . . . not good. And I'm not sure why."

Tao's professional ascent was thwarted by a brief encounter with a young scholar named Huimin Liu. In the spring of 2017, Tao received an e-mail from Liu, who was seeking a position in the U.S. Liu was from northern China and had studied chemical engineering at Tsinghua University. She was currently on a fellowship at the University of Sydney, where, according to Tao, she had had a row with her adviser. Tao, characteristically oblivious to any cause for interpersonal concern, offered to sponsor Liu as a visiting scholar in Kansas. But before they met Tao wrote to Liu's adviser in Sydney to recommend one of his own visiting scholars, a woman identified in court documents as "X.Z.," for a postdoc there. Liu feared that a conspiracy to replace her was afoot. She sent Tao a furious message that read, "I don't covet things that don't belong to me, but when something that belongs to me is snatched away my counterattack may be very strong and extreme."

Tao was bewildered: "In academia, who would do things like this?" Still, in October, 2018, he welcomed Liu to his lab. In one of the few photographs of Liu that exist online, she has tousled bangs, arching eyebrows, and a half smile. She stayed for only three weeks before initiating her visa transfer to Berkeley, where she continued her research. Tao's other students told me that she kept to herself and made little impression. For Tao, she was just another visitor passing through. (Liu did not respond to repeated requests for comment.)

As their manuscripts were being readied for publication, Liu began to feel that she was being slighted. In February, 2019, she sent Tao an e-mail arguing that, on a few major papers, she deserved substantially more credit than he'd given her. She seemed to think that Tao played favorites, advancing the careers of undeserving labmates at the expense of her own. She wrote, "In fact, this email was drafted about 3 weeks ago, I have tried my best to calm down and revise it by using peaceful words." She reminded him that she was inclined to an extreme "counterattack." Five days later, Tao replied, acceding to Liu's demands in several cases. The e-mail had a clinical tone; if Tao suspected that she had leverage over him, he gave no sign of it. In a case where Tao felt that an authorship credit was clearly not deserved, he agreed to pay her for her time. In Liu's response, she emphasized that his "improper action" had hurt her "badly." She concluded, "You should feel lucky, I am merciful."

In April, Liu wrote to Tao again, suggesting that he had been responsible for

the loss of her postdoc in Australia. He tried to offer whatever generic career assistance he could provide, but she rebuffed him, saying that she wouldn't "concede one inch of what should be mine." Later that day, she made an unequivocal demand. "If you are not sure how much you should compensate me, I could suggest you a level. It should be in the level of millions of RMB. For example, 2 million RMB," or about three hundred thousand dollars. She continued, "Do not consider it is too much. You ruined my future. Do not consider it is too much. It is also your future." Tao felt that the claim was plainly false and a waste of his time. He assumed that the issue would soon blow over. "My husband spends all his time in the lab," Peng told me. "He couldn't fathom that there were such crazy people out there."

A week later, Liu forwarded Tao an e-mail she had sent to the journal *Chemical Reviews*, claiming authorship misconduct. For the first time, Tao seemed to lose his composure. "What is the evidence you want to say that?" he wrote. "If you don't have evidence for that, you will get a big trouble." Tao and Peng didn't think to contact any authorities. Liu was a young woman alone in a strange country, and, Peng told me, "we tried to empathize with her." They felt relieved the following day when Tao received an e-mail from someone claiming to be Liu's mother, who apologized on her daughter's behalf, affirming that Liu admired Tao and was grateful for the opportunity to work with him. "She has irritated you and caused so much trouble for you," she wrote. "I am really sorry! I hope that you can be kind and forgive her." Later, in the context of everything to come, one of Tao's lawyers speculated that this message was Liu's first e-mail impersonation.

Liu, however, doubled down on her threat, advising administrators at the University of Kansas that there was serious dereliction regarding the authorship of a recent article. When this didn't gain traction, she elevated her vendetta to the plane of national security. On June 4, 2019, she wrote to Tao, "It seems that the term 'tech spy' is very popular nowadays. You should be careful. I have given you many chances and you didn't care. After a thing happens, any compensation will be out of date."

What Tao didn't know was that "a thing" had already happened. In the late spring and early summer, University of Kansas officials and F.B.I. agents had received more than half a dozen e-mails, as well as submissions to the F.B.I.'s online portal, alleging Tao's involvement with illicit schemes to transfer his research to China. The first was an anonymous tip to report the activity of "Espionage," which claimed that Tao was working at the behest of the Chinese government. A few days later, an e-mail putatively from X.Z., the visiting scholar Tao had helped place in Sydney, suggested that Tao held a secret position at Fuzhou University. The message came not from any university domain but from Hotmail. Two days later, the sender wrote a more explicit follow-up: "Franklin (Feng) Tao in the University of Kan-

ANVIL

When a black butterfly flits past,

when you glimpse the outlines of apple trees,

when you smell the sprig of sunrise and walk up to the ditch,

when Bering Aleut, Juma, Tuscarora join the list of vanished languages,

when you turn a spigot and irrigate blossoming pear trees,

when the time of your life is a time of earthquakes,

when a woman, hit by a car while crossing the street, recovers then slides into pain,

when a matsutake emerges out of the rubble of Hiroshima,

when a bartender blows smoke rings and slips through hoops into his past,

when foragers slice russulas, amanitas, clitocybes and pursue red-capped boletes,

when water slips through roots, rises through a trunk, streams into leaves,

when in our bodies we sway and flood,

when you bloody your hands,

when the mind like this Earth is struck and tilts its axis,

when, under summer stars, you have built a cabin in the wilderness,

when you gaze at Aldebaran and sense a first frost on the grass,

when in our bodies we ride the waves of our Earth,

here is the anvil on which to hammer your days—

—Arthur Sze

sas is taking a Changjiang Professorship in China. He may be a scientific espionage."

As evidence, the e-mails provided links to two of Tao's papers, which listed an affiliation with both the University of Kansas and Fuzhou University, and to Fuzhou's Web site, which seemed to indicate Tao's employment there. In another message, the sender attached an unsigned draft contract between Tao and Fuzhou, which offered Tao a salary, a signing bonus, campus housing, and research funds totalling about three million dollars. The sender was again listed as X.Z., but the message was signed, presumably inadvertently, "Huimin Liu." The next message came from an anonymous, self-destructing Guerrilla Mail account; another was apparently from "Chris Liang," but was signed with X.Z.'s name. A tip to the F.B.I. portal seemed to be from the recent postdoc, who was briefly placed under surveillance. A few weeks later, Liu, now writing under her own name on purpose, e-mailed the chair of Tao's department to report that Tao "not only works for KU, but also works for the Chinese government."

From the beginning, university officials worked closely with the F.B.I. At one point, the head of global security at Kansas, Carl Taylor, sent a text to an agent that said, "A possible different source emailed me," then noted, "Actually rereading the message I think it is the same source." The F.B.I. traced the I.P. addresses and found that they had all come from the Bay Area—some from the San Francisco airport, others from the Berkeley campus. Taylor texted, "Got the scrapes on our latest chucklehead. Think we have a solid lead on the Source." Presumably the fact that Liu had signed her own name was a useful clue.

Nevertheless, the F.B.I. responded with alacrity to the idea that Kansas might have a spy in its midst. On July 9th, the agent interviewed Huimin Liu at Berkeley. Liu repeated her claims, adding that she had received the draft contract from a secretary at Fuzhou, whom she was unable to name. A few hours later, she wrote to the agent, "For the talk today, I have to admit that I lied in some of the items." She confessed that she had written all the e-mails and anonymous tips. Tao had once given her his log-in credentials to apply for grant proposals, and she had discovered that the same password worked for an e-mail account in his name from Fuzhou University, which is where she found the draft contract. She seemed unaware that she appeared to be confessing to multiple federal crimes, but was intent on expressing her remorse: "I will accept any penalty for my wrongdoings. I am sorry for that. I will be appreciated if you could stop checking the issues with Franklin."

During this period, Tao was placed under surveillance, including by drone. Sealed government records indicate that agents followed him at conferences in Texas and Chicago. In July, an F.B.I. agent submitted an affidavit to obtain a warrant to search Tao's Gmail account, writing that "both KU and the FBI have received a series of complaints regarding Tao, both anonymously and from an individual claiming to be a former post-doctoral student." The agent did not mention that Liu was, by her own admission, the single source of these complaints, or that she was known (as e-mails provided by K.U. had shown) to have demanded money from Tao. He wrote that the draft contract had been obtained "with Tao's permission and with Tao's direction"—something that was plainly untrue. (The agent later testified that he had misunderstood the ambiguous evidence, and the judge ruled that this was plausible.)



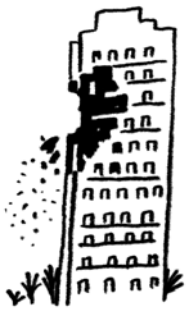
Several agents met again with Liu, this time prepared with even more pointed questions: "What state official directs him and how does he communicate with them?" "Does she have ANY of these communications?" "Will she testify?" They had her log in to Tao's Fuzhou e-mail on a clean F.B.I. laptop, and idly reviewed the messages. It seems that they had second thoughts about this warrantless search, however, and wiped the log-in credentials from the laptop. As Mattivi put it in an e-mail to Tao's attorneys, "The government did so to avoid any potential litigation issues." (The F.B.I. and the D.O.J. declined to comment on the case.)

The F.B.I. had hoped to arrest Tao under a statute called Section 951, as an unregistered agent of a foreign government, but the prosecutors ultimately improvised lesser charges. They believed that Tao had been recognized by the Changjiang Scholars, a prestigious talent program, and that, as a requirement of the award, he had accepted a full-time job at Fuzhou University. In the preceding two years, Tao had twice certified on K.U.'s standard conflict-of-interest forms that he had no "current or pending" sources of outside funding. The prosecutors didn't bother to consult the agencies that had given him grants about whether this violated their rules, which until recently were designed to insure that federal grants were not duplicative. They indicted him for wire fraud and making false statements, arguing that he had concealed his Chinese employment in an effort to gain the portion of his salary (approximately thirty-seven thousand dollars) paid out of his federal grants, which might have been withheld had he been open about his affiliation with Fuzhou. He faced decades in prison, followed by deportation. Tao told me, "I got so much funding for K.U., and when the government came to investigate me they just threw me under the bus."

Mattivi has since left the Department of Justice, and is now running against Kris Kobach in the Republican primary for Kansas attorney general. (His campaign bio highlights his participation in a capital case against an Al Qaeda operative, alongside his indictment of Tao.) Mattivi told me it was important to understand that "the fact that Tao was not charged with a national-security violation doesn't mean it was unsuccessful from the point of view of being a counter-intelligence or counter-espionage case. We said, 'Look, we've got charges, let's file them now to interrupt the intelligence operation instead of letting him send the information to China while we work to improve the national-security side of this case.'"

Nathan Charles, who worked on the case with the D.O.J.'s counterintelligence unit, was less sanguine. He had been pushing hard to indict Tao under

Section 951, but, he told me, "I got my peepee slapped for it." (A D.O.J. spokesperson declined to comment on personnel matters.) According to a lawsuit Charles subsequently filed against the department, his two supervisors—both career Justice officials—"declined to support the prosecution because they could not identify a legitimate national security concern." When he challenged them, Charles told me, one of them "bumbled out something about how he didn't want Chinese Americans to be discriminated against. It ultimately came down to cowardice." Charles claimed that the prosecution only went forward after John Demers, the head of the D.O.J.'s National Security Division and a Trump appointee, called Mattivi to offer his personal support. Charles told me, of Tao, "Yes, he committed wire fraud, and I hope he gets convicted of it, but that's not the heart of what he did wrong—that's not why the F.B.I. started looking at him. They were looking at his pattern of behavior that showed he was a foreign agent, that he was a spy, and he was—an undeclared agent of a foreign power." He paused. "That's why I left the Justice Department. They wouldn't use the tools that were at their disposal to protect the American people."



In the wake of Tao's arrest, the China Initiative seemed to have found its footing. In an interview with Politico, Demers urged U.S. Attorneys' offices to pursue at least one or two cases a year, which was taken as a de-facto expectation, if not a quota. The cases might be complex, Demers noted, but "we wanted to signal to the U.S. Attorneys that we understood that, and nonetheless we wanted them to focus their resources on this, and that we were going to approve these charges." Unfortunately, there did not seem to be enough industrial espionage to go around, and individuals couldn't be prosecuted for Chinese affiliations alone. The Tao charges seemed to contrive a path forward; according to the *Wall Street Journal*, senior D.O.J. officials believed that the indictment represented a "potential blueprint for prosecuting talent program participants without having to produce evidence of intellectual property theft." They could charge cases on the technicalities of funding disclosure while making it clear that the underlying moral crime was one of dual loyalty.

Carol Lam, a former federal prosecutor, wrote that the pressure to bring cases, and law enforcement's crude understanding of science, made dubious prosecutions inevitable. The D.O.J. has not kept clear public records of what counts as a China Initiative case, and several cases—including one involving turtle smuggling in Singapore—have disappeared from its Web site, so a comprehensive accounting of the relevant prosecutions is difficult. But, according to data compiled by the *M.I.T. Technology Review*, fewer than a quarter of the cases have involved actual economic espionage, and since Tao's arrest, the proportion of "research integrity" cases has risen dramatically. (The D.O.J. defended its docket, maintaining that fewer than half of all cases have involved grant fraud.)

It's a common prosecutorial strategy to bring lesser charges for more serious offenses. In these cases, however, there was no clear rationale for the initial investigation, which lends credence to the idea that the China Initiative was merely a formal gloss on a racialized moral panic. The failure to disclose outside sources of funding, an unfortunately widespread phenomenon, is typically subject to administrative remedies; on the National Science Foundation's Web site, there are at least a dozen recent infractions similar to those that have been alleged of Tao, which have resulted in suspension from one's university or temporary debarment from federal funding. According to a study by the law professor Andrew Chongseh Kim, more than half the defendants in economic-espionage cases since 2009 have been of Chinese descent. Andrea Liu, a physicist at the University of Pennsylvania, told me she attended a briefing in which "the F.B.I. likened working with Chinese researchers and students to a cancer, where the malignant effects might not be known for years afterward." She continued, "My reaction was that an overreactive immune response to cancer leads to autoimmune disease, and that can be equally deadly."

In its attempt to protect our technological supremacy, the government attacked the very people who underwrote our advances. In early 2018, an F.B.I. agent named Kujtim Sadiku learned, through Google searches, that Anming Hu, a Chinese-born Canadian citizen and nanotechnologist at the University of Tennessee, had taken part in the Beijing Overseas Talents program. Sadiku visited Hu's office and fished for a confession that he was a spy; when none was forthcoming, Sadiku attempted to recruit Hu as a source. Hu declined, and Sadiku spent the next two years trying to build a case, dispatching agents to tail his family. When the surveillance produced no evidence of espionage, the government indicted him for failing to disclose part-time work at the Beijing University of Technology to NASA, which had commissioned him to develop spaceflight materials. Hu was dismissed by the University of Tennessee and placed under house arrest; he wasn't allowed to visit his own garage or outdoor deck for a year. His son lost his visa status and was forced to leave college and return to Canada, where the rest of the family lived. Hu told me, "My daughter, Grace, she saw that the other kids were picked up by their fathers when kindergarten ended in the afternoon, and she asked me, 'Dad, why do you never come to Canada to pick me up from school?'" He choked up as he described how he told her a good-night story each evening over the phone: "After the short time I had to talk with her, it took a long time for me to recover—an hour or two, almost every day."

When President Joe Biden took office, the government became defensive about claims of racial profiling. In an interview with *Science*, Lelling, the U.S. Attorney in Boston, said that, if systematic thievery were a policy goal of France, the D.O.J. would be prosecuting Frenchmen. (This may not have been the best example; in 2014, Robert Gates, the Secretary of Defense, identified France as one of the worst of-

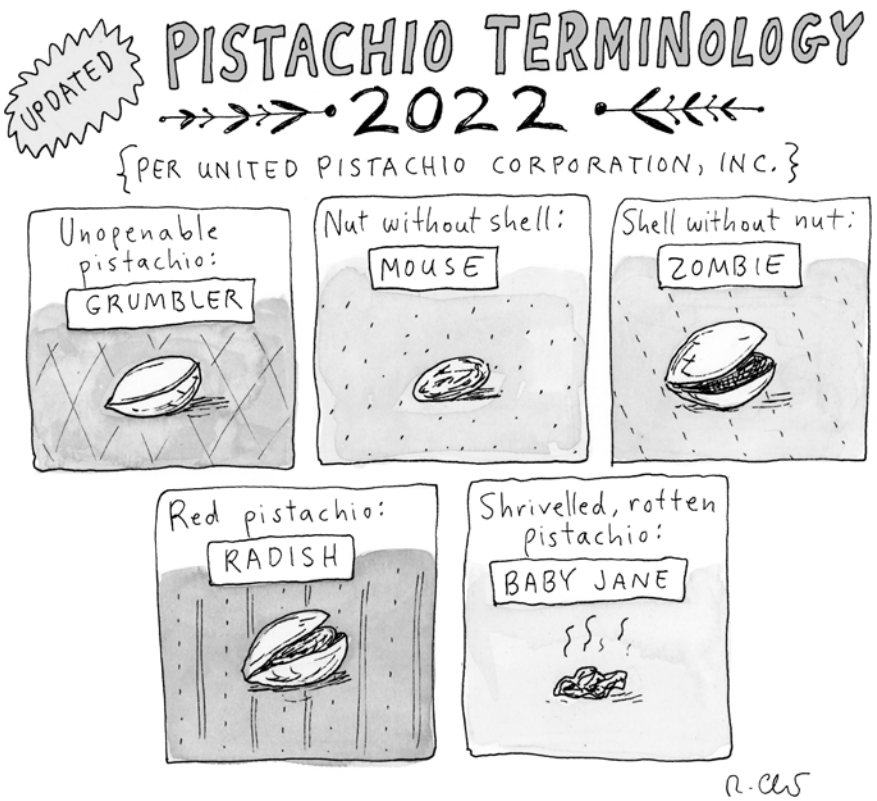
fenders, saying, "French intelligence services have been breaking into the hotel rooms of American businessmen and surreptitiously downloading their laptops.") Michael German, a former F.B.I. agent, told me, "The F.B.I. will say, 'If you look at our cases, people of Chinese origin are overrepresented,' but that's not measuring spies—it's measuring who the F.B.I. is investigating." Either way, the appearance of selective prosecution has had broad ramifications. Ed Lazowska, a computer scientist at the University of Washington, told me that one of the best young faculty members in his department fled to the private sector lest he come under scrutiny. Steven Chu, a Nobel Prize-winning physicist and the former head of the Department of Energy, told me, "My friends in Great Britain and Germany are ecstatic. They say, 'The U.S. used to get the best grad students and postdocs, and now we see options!'"

The government had created a situation in which even a glancing scientific connection to China could be criminalized. In January, 2021, Lelling announced the indictment of Gang Chen, a beloved engineering professor at M.I.T., for disclosure violations, and was willing to say the quiet part out loud: "This was not just about greed but about loyalty to China." An F.B.I. agent noted, "We have now reached the point where the F.B.I. is opening a new China-related counterintelligence case about every ten hours."

This January, I met Tao at his home, which is panelled in dark wood, sparsely furnished, and decorated with imagery of wild horses at liberated gallops. Tao has been unable to eat much since his arrest, and wore a thin blazer that hung loosely from his frame. A little alcove displays the awards he has won. He no longer has access to his lab or office, and has colonized most of the kitchen with computer monitors and wobbly towers of files. Tao lifted his pants cuff to relieve pressure from an ankle monitor he has worn for two and a half years. Peng is warm and emotive—as I sat down, she took sweet rice cakes out of the oven—but Tao, despite frequent pauses to look down at his hands and cry silently, can be prickly and irascible. He was recently admonished by one of his attorneys for leaping up in court to express his exasperation with what he considered a mistranslation of a phrase in Mandarin. He praised me, patronizingly, for paying close attention to the defense's evidence, in a way that felt like a reprimand of his lawyers.

The story the government tells about Tao is, on its face, relatively simple. "This is a pretty straightforward case that's well within the heartland of wire fraud," a prosecutor said at a hearing. "The object of the scheme was to obtain a second salary and money and access to federal funds that the defendant wasn't entitled to." The government has the unsigned draft contract that it got from Liu and a signed—but not countersigned—"addendum" that Tao sent back to Fuzhou University, in which he asks for significantly more lab funding than the original contract stipulated. He requested that the university purchase an AP-XPS machine, and his Gmail account, according to the government, contained "numerous other instances of Tao equipping his lab" there. He had been assigned a Fuzhou e-mail address, which was used to submit grant applications to the Chinese equivalent of the National Science Foundation. He had office space at his disposal. He directed promising postdocs to Fuzhou, helped one graduate student secure a faculty job, and asked around for candidates to work with a Changjiang scholar. According to an F.B.I. interview with a professor in Taiwan, Tao reported that he had moved from K.U. to Fuzhou. He made fifteen trips to China in three years. During the spring semester of 2019, he lied to his dean about his whereabouts, claiming that he was doing research in Germany rather than in China. (At many universities, such deceptions alone would be sufficient grounds for dismissal.)

Tao's appearance on the stand is unlikely, in part because of his personal qualities, but the story he tells is that he applied for the Changjiang scholarship not for money but because it would give a sheen to his career accomplishments. The system requires a nominating institution in China, and he was already collaborating with Fuzhou. This collaboration was never a secret; his dual affiliation was listed in published papers. He considered accepting the scholarship, and took his family to see the city of Fuzhou. But the proposal, he and Peng claim, was vetoed by his family. Tao's children can't read or write Chinese, and his wife had



no interest in moving there. Tao and Peng are from an area near Sichuan Province, and used to eating spicy food; Fuzhou is on the coast, and no one in the family likes fish. "We had to go there to show you how much the kids and I don't want this," Peng said, during my visit.

Tao says that the signed addendum was a "polite way to decline their offer." It made demands so extravagant—including a request for about eight million dollars in funding—that, he says, he knew it could never be accepted, allowing both parties to save face. The fact that he sent the counter-offer with his signature in place, however, does suggest that there was a threshold beyond which he would have made the arrangement work. Nevertheless, a chemistry professor at Fuzhou told me that Tao had never been a faculty member there, though members of the H.R. department had repeatedly tried to recruit him, and did not abandon the process until Tao was arrested. Fuzhou, in Tao's view, exaggerated his role because it looked good for the school to advertise a Changjiang appointment.

Tao concedes that he lied to Kansas administrators about his whereabouts for the spring semester of 2019. He says that he was looking for another job, and that the student complaints about the earlier trip to China still stung. There is no question that Tao longed to work at a premier institution; that year, he also submitted applications to Brown, Stanford, and several other places. He told me that another reason he had not accepted Fuzhou's offer was that the university was decidedly second-tier. The U.S. government has thus far produced no evidence that Tao was paid by Fuzhou, despite having subpoenaed the bank-account records of members of Tao's church, and those of his fourteen-year-old children. Tao told me, "I never signed a contract, I never taught a single class, I never gave a lecture, and I never got paid."



It remains possible, according to the evidence, that Tao did in fact have a second job in Fuzhou, perhaps a part-time one. His lawyer Peter Zeidenberg, of the firm ArentFox Schiff, argues that it would still take legal contortions to construe this "moonlighting" as a federal crime. Several academics told me that such collaborations are widespread, and as recently as five years ago wouldn't have been a problem for the university, let alone the government. Academic conflict-of-interest forms are notoriously ambiguous, and government agencies have hastened to "clarify" their meaning since Tao's arrest. (Mattivi, the former prosecutor, argued in a hearing that he hadn't shown the actual forms to the grand jurors because they were so prone to misinterpretation.) And Tao has hardly neglected his duties in Kansas; in 2019, he won the university's marquee academic prize. Zeidenberg has argued that "the indictment attempts to transform what is, at best, a garden-variety employment dispute" into six federal felonies, each of which carries a maximum of twenty years in prison. If the government's case stands, it could create "truly bizarre and draconian situations." If a computer programmer falsely certified that he had not used marijuana while employed by a nonprofit that receives funding from the E.P.A., for example, would that be federal-program fraud?

Of course, the government has not always presented the case as "heartland" wire fraud. Tao's indictment is shot through with insinuations that Tao acted "for the benefit of the PRC" and did so "while purporting to remain loyal to KU, his employer." At one point, a grand juror asked Mattivi, "So is he being charged with double-dipping or espionage?" Mattivi demurred, giving the impression that the distinction wasn't so clear. The government has argued that Tao brought sensitive, government-funded research to Fuzhou, in order to "make the PRC a world leader in the field of renewable energy." Nathan Charles, from the D.O.J.'s counterintelligence unit, told me, "He was just handing them the work he was doing in the U.S., and he was getting good money to do it, all the perks."

But when I asked the former prosecutors about the potential dangers of Tao's research their understanding seemed fuzzy. Charles said that he didn't remember all the details, but that Tao was "doing this very cutting-edge research that relates to the processing of petroleum, something with obviously a lot of economic interests, but also something— Hey, Japan largely invaded Oceania, all the territories south of the mainland, to get petroleum, to literally fuel its conflicts in China, and a big part of why they attacked Pearl Harbor is that they were trying to replicate what they did in the Russo-Japanese War, with the attack on Port Arthur. . . . The technology that Frank Tao was working on was technology that was going to help China, both in terms of industry and military prowess."

Virtually any line of scientific inquiry could, with enough imagination and time, be pressed into the service of an adversarial misadventure. But I consulted half a dozen experts in Tao's field, and all of them affirmed to me that what Tao does is fundamental science, without direct benefits to practical functions like petroleum processing. (Despite their general sympathy for Tao, very few were willing to go on the record and risk crossing the funding agencies or facing the same investigative scrutiny for their own Chinese collaborations.) Bernasek, Tao's adviser, dismissed the idea that Tao's work was dangerous: "It's a long way from application, and the idea that he is responsible for any kind of industrial espionage is ludicrous." One AP-XPS expert, who knows of Tao's work but has no relationship with him, told me, "I don't know everything Franklin worked on, but based on my experience it's so basic and so fundamental that it's very far from practice—and I have a very hard time imagining that anything about it is related to national security." He added that it was "highly unlikely" that Tao's tinkering with AP-XPS machines could result in patents or other forms of intellectual property.

The scholars noted that there is no bright line between science and engineering. In Tao's case, the government has seized on one Department of Energy project that mentions potential uses for "shale gas components" in the energy industries. But the AP-XPS researcher told me that even this work,

which had been funded by the D.O.E. as part of its "basic research" rubric, was valid only in conditions that bore little resemblance to the outside world—it was as if these experiments had been conducted under the pressure of Mars. One scholar, who had spent more than a decade working in national labs and knew Tao's work well, told me, "We are fundamental scientists, not weapons researchers. There is potentially money in what we do down the road, but I remember a conference where we said, 'This could be useful,' and a guy from Shell said, 'Come on, guys, get real!'" Tao told me that his research was "pure science," and that the references to shale gas and other bits of observable reality were a boilerplate requirement of the funding agencies: "No one funds something only for fun." He added, "The discovery and knowledge generated from our fundamental studies could be beneficial to the world one day. But not for three decades, I think, and never without huge further efforts from other people."

The national-labs veteran told me that there was "nothing magic about what Franklin did," and that China did not need him. "Our colleagues in the Chinese Academy of Sciences do the same kind of work, and they are just as good as Franklin." He added, "In terms of national security or tech transfer, there is no basis for a claim he did anything wrong." More evidence could always come out at trial that changes this assessment. But Tao seemed befuddled by the possibility that his research could be subject to espionage. "We disclose all our details so someone else can replicate our results—it's a basic principle in the scientific community," he said. "Why would we worry that they're coming to steal my work? They could just e-mail me to ask how I did it!"

Tao concedes that he did ask Fuzhou to buy an AP-XPS machine. But these machines are commercially available from a supplier in Germany, and several are already in China. The recent postdoc told me that, as far as he could tell, having such a machine there would serve only to further Tao's personal efforts, by allowing him to double his research capabilities and publication output. If Tao did have a dual loyalty, the postdoc implied, it was not between the U.S. and China but between any narrow national interest and science as his vocation.



"It's a slippery slope from casual bird watcher to that guy."

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The China Initiative, at least in name, officially came to an end last month. Matthew Olsen, the head of the National Security Division of the D.O.J., announced that although the department's actions had been motivated by "genuine national-security concerns," he had registered worries about a "chilling atmosphere" for scientists and determined that the Initiative was "not the right approach." He was making official a slow collapse that had been occurring in plain sight for a year. Last September, a federal judge acquitted Anming Hu, pointing out that, even if he had neglected to disclose a part-time position in Beijing, no fraud was involved because NASA was happy with his work. In January, all charges against Gang Chen were dropped after a Department of Energy official said that Chen had been under no obligation to disclose foreign ties. Chen has said that he will likely no longer work on government-funded projects.

But most officials I spoke to maintain that the underlying threat is real, and unlikely to dissipate soon. Christopher Johnson, a former C.I.A. analyst with extensive experience in China, told me, "There's legitimately plenty of worrying activity that's happening here, and to compare it to a McCarthyist virus—I don't see it that way." To the chagrin of both the Department of Justice and the intelligence community, any cases they lost were immediately exploited by China for their propaganda value.

One of the most common objections to the China Initiative is that the vast majority of scholars do open research designed for publication, so only an F.B.I. simpleton would worry about "theft." This is true, but it also elides the distinction between explicit and tacit knowledge. In an article from 2019, "Why China Has Not Caught Up Yet," the researchers Andrea and Mauro Gilli note that before the First World War it took Germany only a few years to copy Britain's most advanced battleship designs, the product of five decades of intensive research and development. By now, though, technology has become so



staggeringly complicated that developing nations can no longer expect to keep up on the basis of explicit knowledge alone. Between 2007 and 2013, Chinese hackers stole Pentagon blueprints for so-called fifth-generation stealth fighter planes. But the Chinese military lacked the general engineering know-how, and the production base, to replicate them, and still has not come close to producing an aircraft that achieves the performance of the F-22.

In this view, talent programs might represent a more substantive threat than, say, cyber intrusions. The former government official who worked with intelligence agencies provided me with dossiers that he had compiled since 2014, based on information that has since been removed from the Web, which helped give substance to what often seem like vaporous expressions of anti-P.R.C. hysteria. In one case, a decorated professor of engineering in America received federal grants to apply machine learning to signal detection in medical devices. At the same time, as a talent-program awardee, he worked at one of China's defense universities, which have explicit ties to the People's Liberation Army; the university in question develops machine-learning applications for submarine warfare.

The former government official also argued that there had been methodical attempts to exploit the federal funding system. One talent-program awardee, he showed me, became a grant manager for a funding agency and awarded several grants to other members of the same talent program; when they became managers, they awarded him grants of his own. It's possible that the cohort did excellent work, or that this was simple cronyism. "We only had the capacity to look at one subsection of one subdivision of one funding agency," the former official said. "What we found could have been an outlier, but I doubt it." A think tank in Australia, he pointed out, has identified at least two hundred talent programs, and the U.S. has focussed on only three or four. "Academia is correct when they push back and say, 'What is the scale and scope of this?' The U.S. government has no answer to that."

The China Initiative's most high-profile case has been that of Charles Lieber, the chair of the chemistry department at Harvard and a perennial Nobel Prize candidate, as well as the recipient of more than fifteen million dollars of federal funding, including from the Department of Defense. From 2012 to 2017, Lieber participated in China's Thousand Talents, the most vaunted talent program; his contract paid him fifty thousand dollars per month, along with generous startup fees to establish a lab in Wuhan. He had, however, neglected to inform Harvard of his double-timing in China, and, when approached by federal investigators, he continued to conceal the arrangement—and the sacks of cash he had smuggled through customs. In December, he was convicted of lying to federal authorities, falsifying tax returns, and failing to report foreign earnings. Some felt that this was just another anti-Chinese expedition; a D.O.D. official testified that the investigation was prompted by the sheer number of Chinese students working in Lieber's lab. But John Krige, the historian, has noted that Lieber's contract stipulated that he work on the development of batteries for high-performance electric vehicles, an area of industrial competition. "The academic research community must ask itself if it is morally or politically acceptable to engage in international scientific collaboration with China in fields that can seriously harm the domestic economy," he wrote.

Krige told me that scholars had to consider whether certain kinds of knowledge diffusion ought to be deterred. "Now that we're facing a serious economic competitor in China, scientific internationalism can't work in the same way," he said. "The problem is that nobody wants to confront that head on—what is dangerous knowledge?" Finding a principled way to make these determinations is not easy. It may be in America's interest to encourage tech transfer in some domains—say, biomedical information during a pandemic—while inhibiting it elsewhere. Such complicated calculations require the input of policymakers, scientists, and area specialists; they are not necessarily well served by the blunt instrument of criminal prosecution. The former government official told me, "The fundamental problem with the China Initiative is that the D.O.J. is in charge with the F.B.I., and they're looking at it entirely through a criminal lens, because that's the only tool they have. Most of the threats are not criminal in nature, so by definition the China Initiative has failed, and will fail. Compliance can easily be handled by administrative authorities, but the D.O.J. stepped in and said, 'No, we got this.' They don't know anything about how grants work, so they were totally cavalier—'If they're part of a talent program, we'll just arrest them!' But that's idiotic. Of course they were going to botch these cases!"

Previous Presidential Administrations have formulated policies that take these considerations into account. In the eighties, President Reagan commissioned a panel to look into tech transfer to the Soviet Union. The panel outlined a strategy later known as "small yard, high

fence": identify some specific avenues of research that need to be protected with a high barrier of classification, and leave everything else open. In 2019, the N.S.F. commissioned the JASON group, a secretive collection of government advisers, to look into whether this guidance needed updating, and they concluded that it did not—that any other defensive structures would harm the progress of science more than they would help the short-term national interest. I asked Mario Daniels, the historian, why, if we already have the tools we need, there is so much hand-wringing about China now. He suggested that what's new is a pervasive unease about America's decline. "The difference between now and the early Cold War was that back then the Americans always thought they were more or less the uncontested leaders," he said. "And that has changed."

Franklin Tao's lab has been shut down, his K.U. e-mail account has been deactivated, and his students have dispersed. "No one is using the machines," he told me, "which is wasting a lot of money for the university and the federal government." He has spent the past two years on unpaid leave, wondering why he was singled out: he noted that myriad other academics, including non-Chinese scholars, had been in similar situations and had never faced investigation. He is haunted by the suicide of a Stanford professor whose connections to China were scrutinized in 2018. Tao has paid obsessive attention to the other China Initiative court proceedings, and he travelled to Knoxville for Anming Hu's trial. Tao does what he can to keep up with his research, and since his arrest he has published eleven more academic papers. Peng has taken jobs at three different hospitals to support the family. She sometimes hears her children crying in their rooms. For a time, they refused to use their last name—one of a tiny number of Chinese surnames at Free State High School. Tao told me, "More than anything, the China Initiative reminds me of the Cultural Revolution."

Inside the D.O.J., it had been clear since November, when a comprehensive review began, that the China Initiative had become a liability. But it took the department several months to craft an appropriate public message around its closure—to disavow the civil-rights consequences without downplaying the intelligence community's apprehensiveness about China. Henceforth, the Biden Administration will deal with most "research integrity" violations through administrative penalties. Greater prosecutorial discretion will be exercised, focussing on criminal cases with an established "nexus to our national or economic security." Lelling, the former U.S. Attorney, told me he now believes that the government should have led with regulation and guidance in the first place. "It might have been better," he said, sighing. "But we didn't do it that way."

The announcement of the Initiative's end was cause for considerable relief in the scientific community. But it may not fully dispel the anxiety of researching while Chinese. Margaret Lewis, a professor at Seton Hall Law School and a frequent critic of the China Initiative, told me that universities and grant-making agencies can still spoil the careers of academics, and often with less public scrutiny. She worries, too, that prosecutions could simply continue under another name. Senators Charles Grassley and Josh Hawley have already called for the Initiative's reinstatement. Lewis told me, "I have a vision of a Bart Simpson blackboard meme: 'The China Initiative is dead. Long live the Strategy for Countering Nation-State Threats!'"

The deeper issues, though, are less likely to be resolved with the prosecution of individual actors than with a re-



vision of our national priorities. Zuoyue Wang, a historian of science, told me that two historical episodes might guide our way forward: "One was the news of the first successful Soviet atomic-bomb test in 1949. Which spies gave them the secret? Klaus Fuchs was arrested, and that fed into the Red Scare and McCarthyism. The other was the launch of Sputnik, in 1957, and there was more introspection then. That debate led to massive investment in science, education, and technology." He continued, "There are global problems that affect American interests, like climate change and public health and nuclear weapons, and we need international scientific collaboration to solve them."

The D.O.J. has made it clear that it will continue its existing prosecutions. Either the government believes that its case against Tao is necessary and just or it wishes to avoid the embarrassment of another dropped case and is willing to gamble on a Kansas jury. (A D.O.J. spokesperson told me, "Prosecutors make decisions based on facts, law, and the principles of federal prosecution.") Zeidenberg, Tao's lawyer, fears that this is the worst of all possible worlds for Tao: "People have been patting themselves on the back for the rollback of the China Initiative, and now they will move on, thinking the problem has been solved." Tao's trial begins on March 21st, in a courthouse in Kansas City, and his conviction remains distinctly possible. (The local NPR affiliate referred to Tao, incorrectly, as being on trial for espionage.) The judge, perhaps sensing a broader shift, recently barred expert testimony about the general nefariousness of talent programs, but her rulings have largely favored the prosecution. Tao is unlikely to go to jail for decades, but whether he will have a scientific career is an open question.

When I visited Tao, Peng brought out fifty dumplings she had made for lunch, but she and Tao took only a few. "We're in big debt now," Tao told me. They had borrowed money from several of their friends at church and received donations on GoFundMe. "If I were at Notre Dame now, faculty members' kids get fifty per cent of their tuition paid anywhere," Tao said. "My kids are going to hate me in the future." Peng told me they are likely to lose the home they bought to anchor themselves in the community. She has put her licensure efforts on hold indefinitely. "I have a dream, too," she said. "I want to be a doctor." She looked over at Tao, who looked down at his uneaten dumplings. "He should be doing his research. It's such a waste—it's unfair to him, and to America. He could make so much more of a contribution, and I don't know how they can't see that." ♦