

Committee of 100



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Racial Profiling Among Scientists of Chinese Descent and Consequences for the U.S. Scientific Community

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Scientific discovery, which is fundamentally borderless, is being politically bordered. Geopolitical tensions between the United States and China have spilled over to academic science, creating challenges for many scientists' ability to fully engage in research and innovation. While international strains particularly escalated during the Trump administration, the rivalry between the two countries has continued to intensify. Among the ongoing strategic activities that are still in place today is the [China Initiative](#), launched in November 2018, in an attempt to address security concerns and combat possible intellectual espionage from China. According to the [U.S. Department of Justice](#) (DOJ):

In addition to identifying and prosecuting those engaged in trade secret theft, hacking, and economic espionage, the Initiative focuses on protecting our critical infrastructure against external threats through foreign direct investment and supply chain compromises, as well as combatting covert efforts to influence the American public and policymakers without proper transparency.

At the end of 2020, the Attorney General encouraged DOJ professionals throughout the department to [redouble their efforts](#). Meanwhile, [lawmakers](#) and [academic leaders](#) have heavily criticized this controversial measure as an ineffective and discriminatory form of racial profiling that harms U.S. competitiveness in science and technology.

The DOJ's racial profiling against Asians is nothing new. A recent Committee of 100 [study](#) found a distinct pattern of anti-Asian bias in Economic Espionage Act (EEA) prosecutions over the past 15 years, with individuals of Asian heritage being twice as likely to be falsely accused of espionage and punished twice as severely compared to non-Asians. The research also indicated that only 3% of EEA cases involved potential trade secret thefts from academic research institutions. Since the onset of the China Initiative, [numerous scientists of Chinese descent](#) who were charged and subsequently exonerated still experienced considerable damage to their professional reputations and research careers. The Federal Bureau of Investigation (FBI) has investigated many more individuals, although the exact numbers are unknown to the public. Much of what is publicly known about the possible effects of the China Initiative is highly anecdotal, based mostly on [media coverage on individual scientists](#).

To date, the FBI has not responded to the American Civil Liberties Union (ACLU) and Asian Americans Advancing Justice's (AAJC) Freedom of Information Act [request for China Initiative records](#).

Meanwhile, the Asian scientific community in the U.S. and the country more broadly will continue to suffer from such policies that violate U.S. civil liberties and challenge our ability to effectively cooperate abroad. Another [study](#), conducted by the National Committee on U.S.-China Relations, surveyed leading American academic centers, think tanks, and non-governmental organizations, and found that despite an increasing demand for China content in the U.S., polarizing discussion of China and Sino- American relations has soured the discourse in both countries and their ability to collaborate successfully.

Building on these studies, our project seeks to understand how the China Initiative might be influencing the everyday actions and opinions of the broader scientific community, scientists of Chinese descent and non-Chinese descent, in the U.S.

Synopsis

The University of Arizona and the Committee of 100 administered a national survey between May and July 2021 among scientists in top U.S. universities, including faculty, post-doctoral fellows (postdocs), and graduate students. To compare the experiences and perceptions between scientists of Chinese and non-Chinese descent, the survey was sent to: a) all Chinese name scientists; and b) a random sample of non-Chinese name scientists across 83 U.S. universities. The final sample consisted of 1,949 scientists across the country. Based on scientists' self-reported answers, our sample contains 658 Chinese and 782 non-Chinese scientists, which included 136 Asians¹ who did not identify as Chinese. 509 scientists didn't report their racial/ethnic background.

The latter group was excluded from the comparison analyses but included in the correlational and content analyses (See Methodology pg. 29 for further details). The analysis of the data uncovered significant differences between scientists of Chinese and non-Chinese descent in terms of their sentiments of racial profiling, experiences, and plans of collaborating with China, and their perceptions of both China and the FBI.

NOTES: For the purposes of this paper, the reference to “Chinese” henceforth refers to any individual of Chinese descent/heritage, regardless of citizenship.

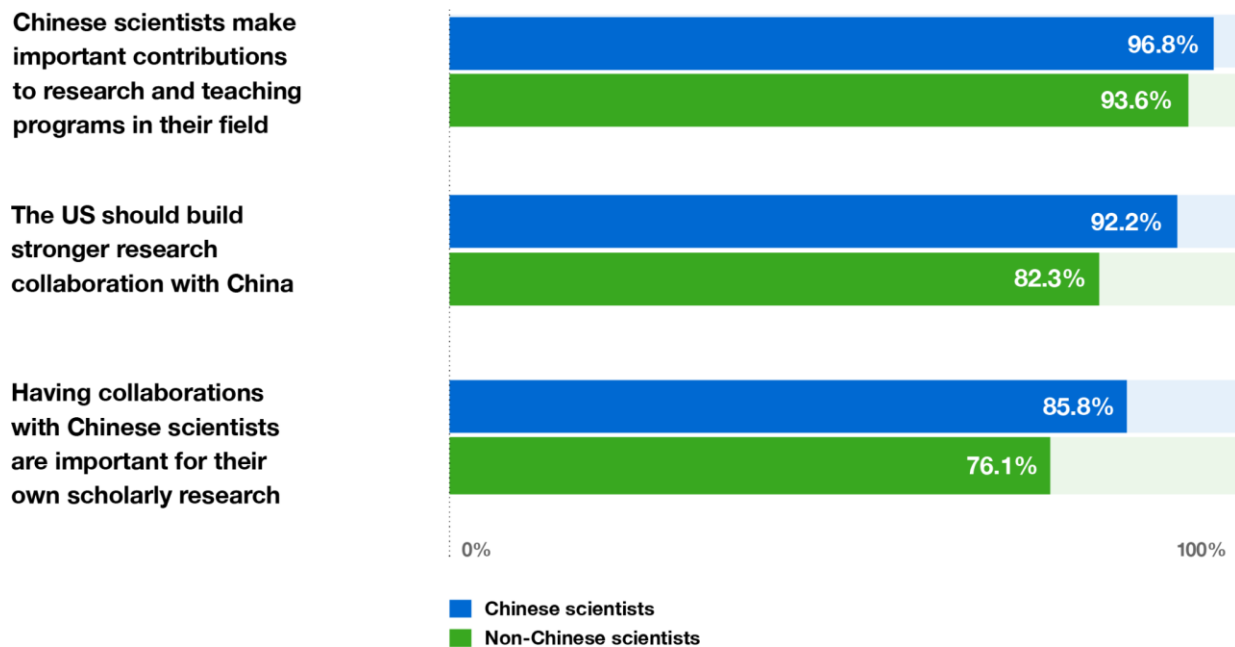
Additionally, the blind comments included throughout the paper by survey participants are provided verbatim in how they were submitted.

¹ Survey respondents were asked to self-identify their racial identification.

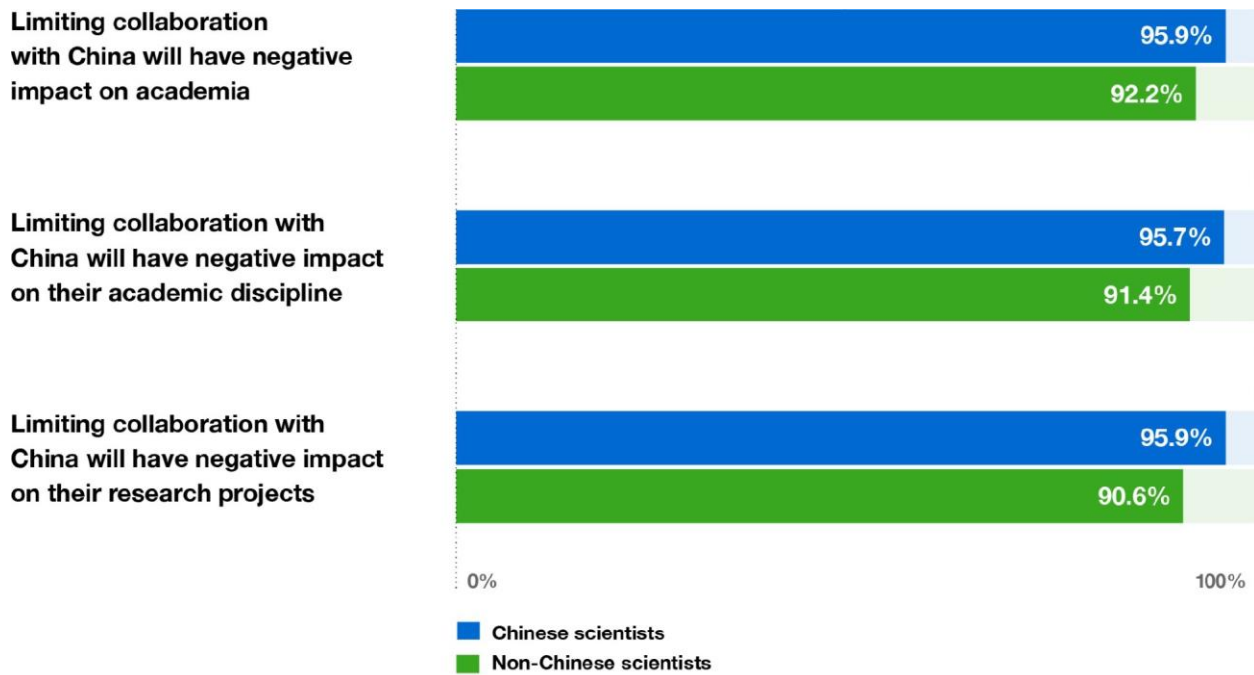
Value of Chinese Scientists and U.S.-China Collaboration

Both Chinese and non-Chinese scientists overwhelmingly recognize the value of Chinese scientists and support U.S. collaboration with China.

96.8% of the Chinese scientists and 93.6% of the non-Chinese scientists surveyed believe that *Chinese scientists make important contributions to research and teaching programs in their field*. 92.2% of the Chinese scientists and 82.3% of the non-Chinese scientists believe that the *U.S. should build stronger research collaboration with China*. 85.8% of Chinese and 76.1% of non-Chinese report that *having collaborations with Chinese scientists is important for their own scholarly research*.

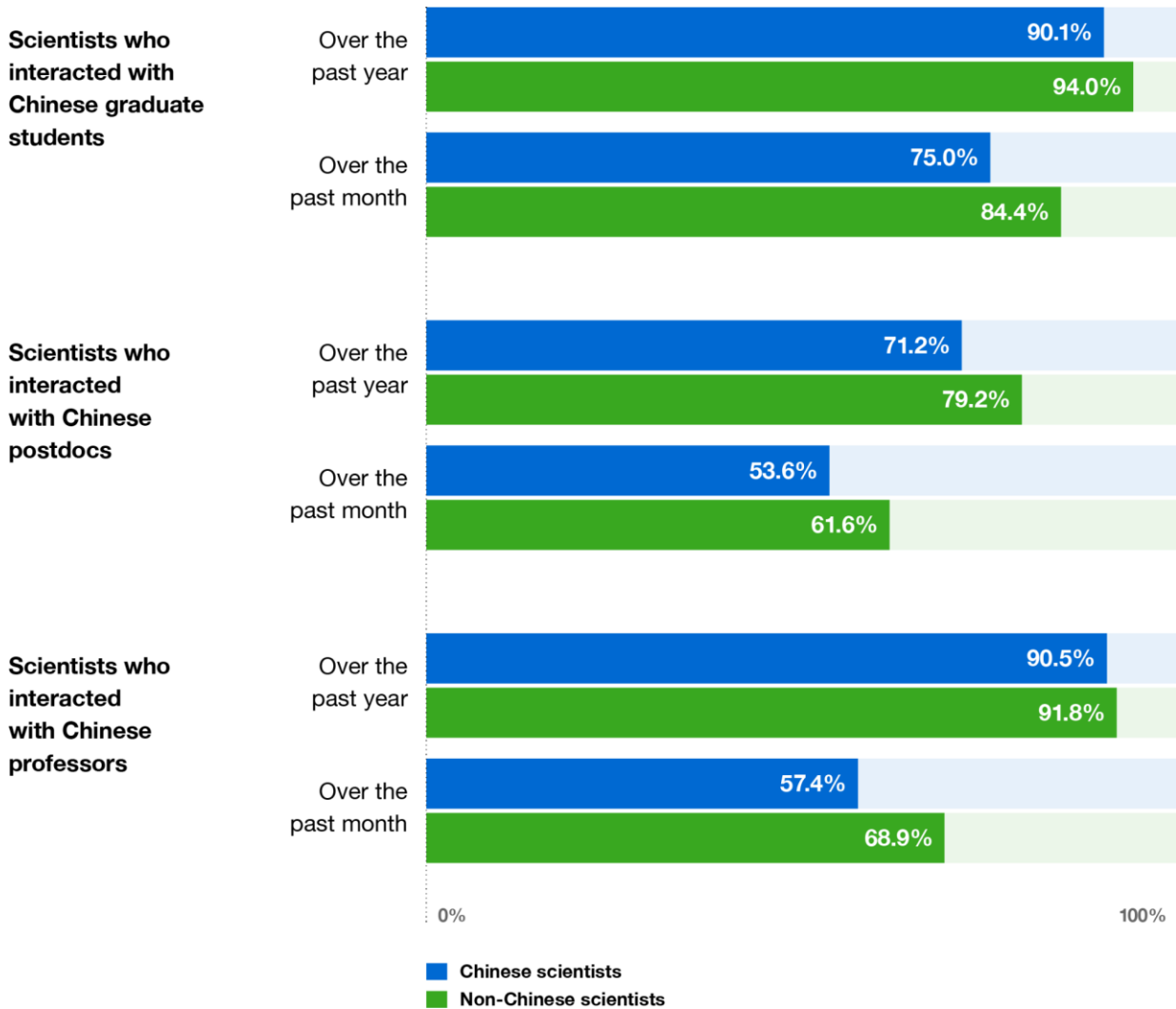


Scientists also consistently agree that disengaging with China does not benefit scientific research. When asked about the future impact of limiting collaboration with China, the vast majority of both Chinese and non-Chinese scientists indicate that *limiting collaboration with China will have a negative impact on academia* (95.9% and 92.2%, respectively), their academic discipline (95.7% and 91.4%, respectively), and their respective *research projects* (95.9% and 90.6%, respectively).



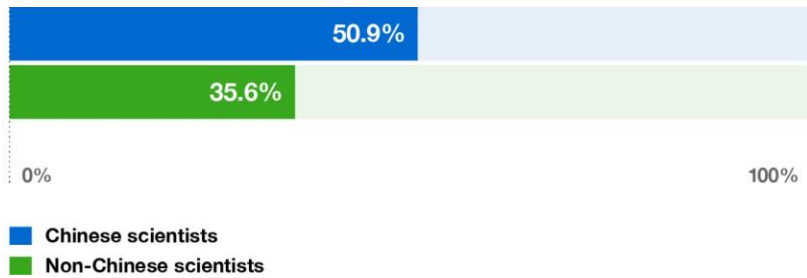
Survey results indicate an overall high level of scientific engagement with Chinese scholars and students.

Over the past year, 90.1% of Chinese and 94.0% of non-Chinese scientists indicate they *have interacted with Chinese graduate students*. 71.2% of Chinese and 79.2% of non-Chinese scientists *have interacted with Chinese postdocs*. 90.5% of Chinese and 91.8% of non-Chinese scientists *have interacted with Chinese professors*. The majority also report meeting regularly, as 75.0% of Chinese and 84.4% of non-Chinese scientists report *at least monthly interactions with Chinese graduate students*. 53.6% of Chinese and 61.6% of non-Chinese scientists have *at least monthly interactions with Chinese postdocs*. 57.4% of Chinese and 68.9% of non-Chinese scientists have at least monthly interactions with Chinese professors.



Furthermore, over the past three years, 50.9% of Chinese and 35.6% of non-Chinese scientists *conducted international collaborative research that involves China.*

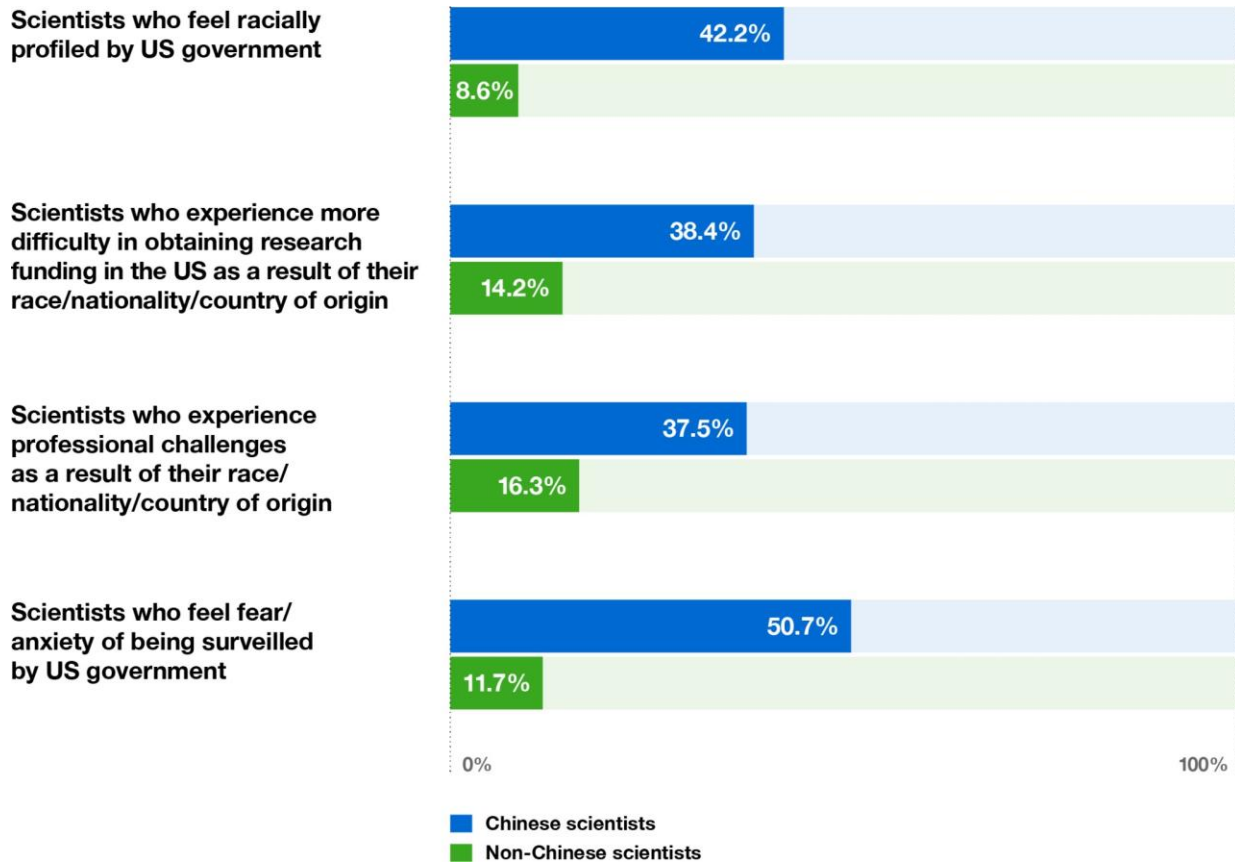
Scientists who conducted international collaborative research involving China, over the past 3 years



Patterns of Racial Profiling

Despite very positive perceptions of and high levels of interactions with Chinese scientists, results show a consistent pattern of racial profiling, as perceived by Chinese scientists.

42.2% of Chinese scientists *feel racially profiled by the U.S. government*, compared to 8.6% of non-Chinese scientists. 38.4% of Chinese scientists *experience difficulty in obtaining research funding in the U.S. as a result of their race/nationality/country of origin*, and this percentage is only 14.2% for non-Chinese scientists. Similarly, 37.5% of Chinese scientists *experience professional challenges (i.e., promotion, professional recognition) as a result of their race/nationality/country of origin*, compared to 16.3% of non-Chinese scientists. About half (50.7%) of Chinese scientists report *feeling considerable fear and/or anxiety that they are surveilled by the U.S. government*, compared to only 11.7% of non-Chinese scientists. Among Chinese scientists, those who are not U.S. citizens, particularly feel such fear (55.9% vs. 40.0%).



Scientists perceive that racial profiling takes place most at the federal level. In contrast, fewer Chinese and non-Chinese *feel racially profiled by their university* (12.2% and 6.5%, respectively) and *by their colleagues* (10.9% and 6.8%, respectively).

Other Asian scientists also reported perceptions of racial profiling.

27.1% of Asian scientists who are not Chinese *believe they are racially profiled by the U.S. government*. 26.3% *experience difficulty in obtaining research funding in the U.S. as a result of their race/nationality/country of origin*, 37.1% *experience professional challenges as a result of their race/nationality/country of origin*, and 25.6% *feel considerable fear and/or anxiety that they are surveilled by the U.S. government*. The percentages of these four items are considerably lower (4.7%, 11.2%, 10.9% and 8.8%, respectively) among non-Asian scientists.

Costs of Racial Profiling

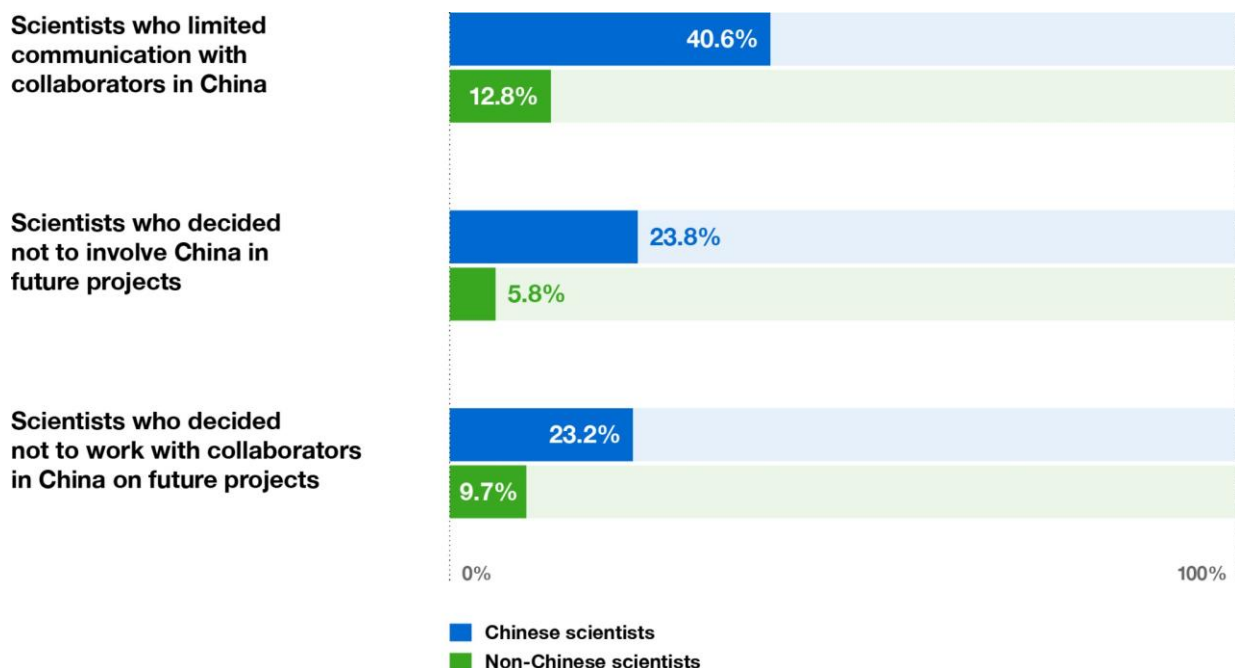
For all scientists in the sample, concerns about racial profiling and surveillance are significantly related to limiting research collaborations with China.

Specifically, *feeling racially profiled by the U.S. government* positively correlates with *limiting communication with collaborators in China over the past 3 years* ($r = 0.25$), *deciding not to involve China in future projects* ($r = 0.26$) and *deciding not to work with collaborators in China in future projects* ($r = 0.20$).

Similarly, *feeling considerable fear or anxiety of being surveilled by the U.S. government* is also positively correlated with *limiting communication with collaborators in China over the past 3 years* ($r = 0.22$), *deciding not to involve China in future projects* ($r = 0.21$) and *deciding not to work with collaborators in China in future projects* ($r = 0.21$).

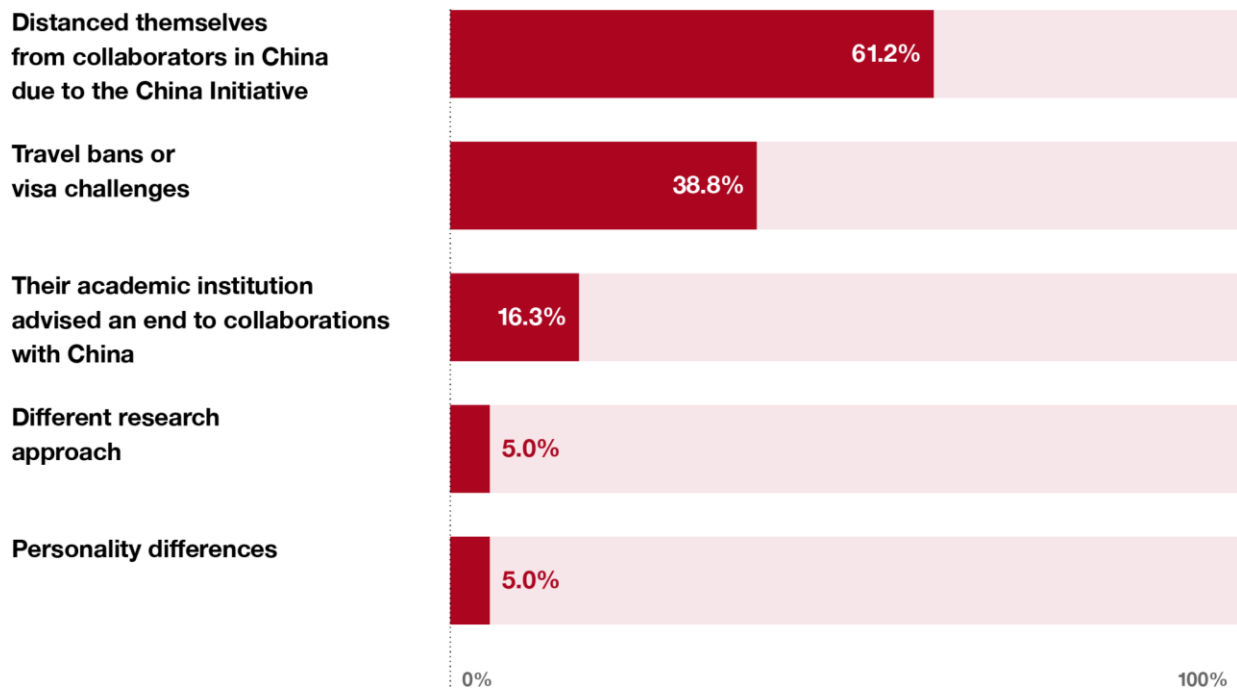
Further evidence indicates a reluctance, particularly among Chinese scientists, to work with scholars based in China to avoid being investigated.

Among those who had reported *conducting research that involves China over the past 3 years*, a higher percentage of Chinese over non-Chinese scientists also reported *limiting communication with collaborators in China* (40.6% vs. 12.8%), *deciding not to involve China in future projects* (23.8% vs. 5.8%), and *deciding not to work with collaborators in China in the future projects* (23.2% vs. 9.7%).



Over the past three years, a higher proportion of Chinese scientists *prematurely or unexpectedly ended/suspended research collaborations with scientists in China* as opposed to 11.9% of their non-Chinese counterparts (19.5% vs. 11.9%). We asked these scientists *who ended or suspended collaborations with China* about the reasons behind their decision. The overwhelming top reason was that scientists *wanted to distance themselves from collaborators in China due to the China Initiative* (61.2%), followed by *travel bans or visa challenges* (38.8%), *their academic institution advising to end collaborations with China* (16.3%), *different research approach* (5%) and *personality differences* (5%).

The comparison between Chinese and non-Chinese scientists was significantly different when it came to the leading reason for ending their China collaborations: *distancing due to the China Initiative* (78.5% vs. 27.3%). The results are especially pronounced for Chinese scientists as there are no significant differences between Asian (excluding Chinese) and non-Asian scientists regarding questions pertaining to their past experiences and future plans for collaborating with China.

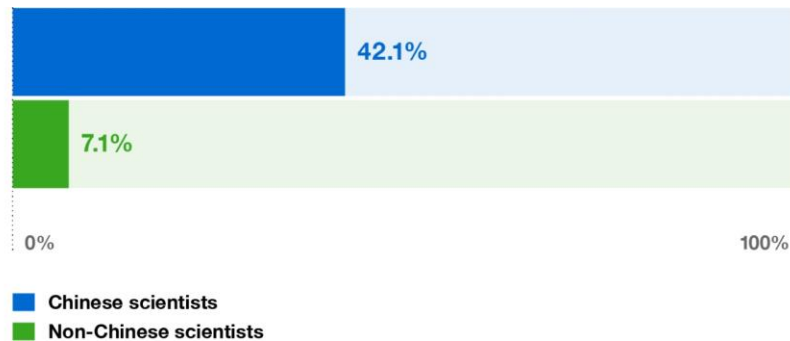


Messaging from the academic institution is also directly related to scientists limiting their collaboration with China. Scientists who believe that their *university has discouraged collaboration with China* also tended to *limit communication with collaborators in China over the past 3 years* ($r = 0.36$), *decide not to involve China in future projects* ($r = 0.30$), and *decide not to work with collaborators in China on the future projects* ($r = 0.28$) over the past three years. Despite the importance of institutional messages, they are not always well understood. 24.7% of Chinese and 20.2% of non-Chinese scientists point out that their *academic institution has not provided clear guidelines on how to report conflicts of interest*.

Talent loss is another potential consequence of racial profiling.

We asked foreign nationals about their intentions to stay in the U.S. Among these non-U.S. citizen scientists in the sample, 42.1% of the Chinese scientists indicate that the *FBI investigations and/or the China Initiative affected their plans to stay in the U.S.*, while only 7.1% of the non-Chinese scientists report so.

Scientists who report that the FBI investigations and/or the China Initiative affected their plans to stay in the U.S.



Racial profiling is significantly correlated with foreign citizens' intention of staying in the U.S. Non-U.S. citizens who *feel racially profiled by the U.S. government* or *feel considerable fear or anxiety that they are being surveilled by the U.S. government* are more likely to *consider leaving the U.S. due to FBI investigations or the China Initiative* ($r = 0.36$, $r = 0.41$). Among the non-U.S. citizens of Chinese descent alone, the correlations are still significant ($r = 0.32$, $r = 0.34$).

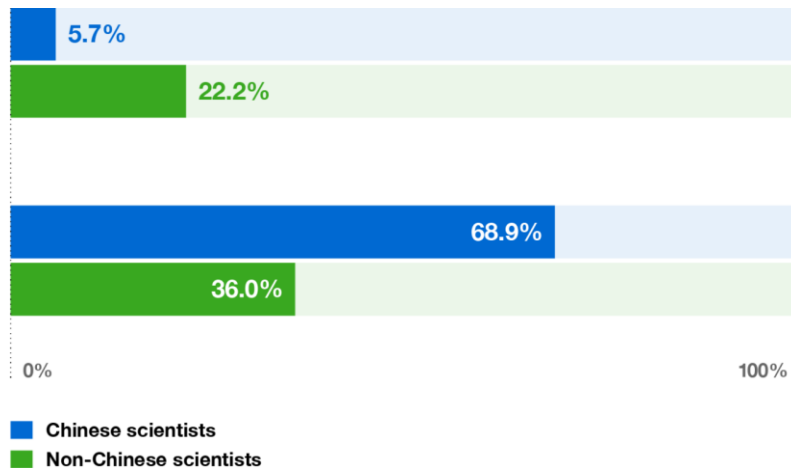
Opinions about China and the FBI

Non-Chinese scientists possess a more negative view about China and a more favorable view about the FBI compared to Chinese scientists.

Non-Chinese scientists are much more likely to agree that *China poses a threat to intellectual property*. 74.8% of non-Chinese scientists believe that *the U.S. should be tougher on China to prevent theft of intellectual property*, while 39.7% of Chinese scientists agree so. The percentages are lower when focusing on Chinese scientists in academia. 43.5% of non-Chinese scientists indicate that *academic espionage and intellectual theft in academia among Chinese scientists is a serious problem* as opposed to only 14.1% of Chinese scientists.

Only 5.7% of Chinese scientists *fully support all investigations from the FBI*, which is much lower than 22.2% among non-Chinese scientists. The majority (68.9%) of Chinese scientists indicate that *the scrutiny from the U.S. government is overblown*, while 36.0% of the non-Chinese scientists say so. The comparisons between non-Asian and other Asian (excluding Chinese) scientists on the above items are not significantly different.

Scientists who fully support all investigations from the FBI



Scientists who indicate that scrutiny from the US government is overblown

Related Comments from Scientists

Along with the questionnaire items addressed above, the survey also asked for comments to elaborate where possible. The responses were extensive, resulting in over 100 pages of cumulative text. While the quantitative results demonstrate the scale of the issues, the open-ended comments provide further depth to the statistical findings and humanize the results in scientists' own words. Additionally, the comments provide further explanations that were not captured in the survey questions.

Scientists of Chinese descent, including U.S. citizens, shared their fears about being wrongfully charged.

Such concerns help to explain their particular distancing, more than non-Chinese scientists, from China. Comments included:

The political environment in the U.S. is frightening; and as a result, I have purposely avoided interacting or collaborating with China. (Chinese Associate Professor, Chemistry)

[I] did not pursue collaboration due to fear of racially-motivated prosecution (which is already happening). (Chinese American² Associate Professor, Neuroscience)

What the U.S. government has done to the Chinese researcher community is shocking and outrageous. The "China Initiative" launched by the Dept. of Justice is clearly racial profiling and injustice. Yet such discriminatory policies that target a specific racial group are still in place even under the new administration. As a way to protect myself from the systematic political persecution of Chinese scientists, I do not plan to work with scientists in China before the end of such systematic discrimination. (Chinese American Professor, Applied Mathematics)

I do not want to live with fear when what I want is only to study nature and develop science. The hostility is evident from the specific agent targeting and charging a list of Chinese scientists and American scientists who collaborate with Chinese scientists. Essentially, the academic atmosphere will be shaped in a way that no one wants to get in trouble because of collaboration with Chinese, and thus most Chinese (even all East-Asian) scientists feel isolated. (Chinese Graduate Student, Biochemistry)

² For this section, "American" refers to a self-identified U.S. citizen (e.g., "Chinese American" refers to a U.S. citizen of Chinese descent/heritage; "Chinese" refers to a non-U.S. citizen of Chinese descent/heritage.)

Fears of being wrongfully charged also extends to those whose work is not considered sensitive. Even among this group, scientists expressed hesitancy that their interactions with those from China will be misconstrued. Others described limiting their work to data that is publicly available over original data collection.

Even though I do not work in a sensitive field nor do I deal with any privileged or proprietary information, I am increasingly hesitant to interact or collaborate with scientists from China for fear it may be misconstrued by overzealous authorities as a conflict of national interest. (Chinese American Associate Professor, Biophysics)

Generally speaking, I feel a bit unsafe to conduct my research in the U.S., even though all my research is based on data that are publicly available. (Chinese Graduate Student, Geological and Earth Sciences)

I have to limit my collaboration with Chinese scientists who are very important to my research. It also sets a horrifying environment as I worry that I am going to be punished just because I am a Chinese American and have been in collaboration with Chinese colleagues. This makes my daily life very hard even though I am only working on basic science. (Chinese American Professor, Geological and Earth Sciences)

Many indicated that any unforeseeable risks outweigh any potential scholarly benefits. While scholars from China may be of much value, interactions with them were perceived as jeopardous and not worth the added “hassle.” Professors reported no longer hosting visitors from China and avoiding collaboration, asking, “Who knows what will happen?” and that they would rather just not “bother” risking a potential investigation.

I used to host visiting scholars from China. They are hard workers and contribute greatly to my lab. With the recent geopolitical tension with China, I will not take visiting scholars from China, to minimize any potential risk that may impose on my lab. Who knows what will happen? (Chinese American Professor, Mathematics)

The atmosphere in the U.S. making collaboration with China complex and somewhat risky, so many U.S. based researchers now avoid it to avoid the hassle. (Non-Asian American Professor, Environmental Science)

Due to increasing intensity of warnings from our university administration, along the lines of FBI’s malicious intent comment, I stopped accepting any volunteer visitors from China to my group because I do not want to deal with any kind of investigations or issues in the future, in case I get unlucky. The relationship type makes a huge difference. I find my nationally and ethnically Chinese colleagues to be good colleagues and we work together on some projects when appropriate. I

have graduate students in my group through PhD or MS programs. I have no way of filtering malicious volunteer visitors out plus the university is making accepting international visitors increasingly more difficult so I choose to just not bother with it. (Non-Asian Professor, Engineering)

The aforementioned findings may have direct consequences for the U.S. scientific enterprise. The possible costs include a negative impact on scientists' research projects, a greater reluctance to pursue federal grants, and considerations to leave the U.S. Numerous individuals described a detriment to their research projects and productivity.

No clear rule about what kind of collaboration is allowed and not allowed. To be safe, I limited my connection with my Chinese collaborators. However, it impacts my research progress as funding and student support are very limited in the US. (Chinese Assistant Professor, Computer Science)

To avoid any potential administrative trouble, I have to minimize the collaboration, even though that hurts my project. (Chinese Assistant Professor, Biology)

[The] China Initiative has a significant impact on my research and personal life. I assume all my electronic communications are potentially monitored by the U.S. government. I decided not to collaborate with researchers in China and other foreign countries due to perceived conflict of interests. I even decline outside research consulting activities in the US. In summary, [the] China initiative has a great negative impact on my research productivity. (Chinese American Professor, Genetics)

[I] try to cut involvement of China as much as I can, even if this means the project will get hurt. (Chinese Professor, Microbiology and Immunology)

Some indicated a change in their research topics and plans towards those deemed less sensitive; focusing on “safer” research topics over “hot” research topics; avoiding sensitive research areas; and espousing less interest in doing “cutting edge research.” While scholars may maintain their productivity and publication output, the China Initiative may be changing the innovative nature of scientific research.

In consideration of personal safety and privacy, I plan to shorten my training in the U.S. I also try to avoid the “hot research topics” that might make me a target, and try to focus on safer research topics. (Chinese Postdoc, Engineering)

I avoided working on potentially sensitive topics and do not collaborate with groups from weapons lab in the U.S. (Chinese American Professor, Physics)

My interest in doing cutting edge research significantly decreased. (Chinese American Professor, Engineering)

Some scientists reported less interest in applying for federal grants, as the National Institutes of Health (NIH), for example, was repeatedly noted for over scrutinizing collaborations with China. Others wrote that they would only work in domestic teams. And others indicated limiting their work to open-source data.

I am funded by NIH and must be very careful not to violate rules regarding collaboration with Chinese scientists on NIH funded projects. I have avoided collaborations as they might threaten my NIH funding or create personal career risks even if the collaborations are not directly related to my NIH funded research and are funded by Chinese agencies such as the CAS (Chinese Academy of Sciences). (Non-Asian American Professor, Genetics)

Stop[ped] applying [for] funds from agencies that have policies scrutinizing China collaborations, because of fear of being targeted. (Chinese American Professor, Astronomy)

I am less willing to pursue and be involved in research funded by federal or state government agencies as such research may attract special and unjustified scrutiny by the government authorities. (Chinese Associate Professor, Environmental Science)

Many Chinese faculty members, including those who are U.S. citizens with longstanding careers in the country, questioned whether to stay in the U.S. in the future as a consequence of the China Initiative.

According to these and other respondents, the China Initiative and hostile racial climate have led many to question their sense of belonging and that being Chinese in the U.S. may stall their research careers. Many reported that they would be more valued and treated better elsewhere, including in China.

Seriously considering if staying in U.S. is a good choice for Chinese Americans in the long term (Chinese Associate Professor, Engineering)

I was born in China, and became a U.S. citizen. I would never do anything that betrays or harms the U.S.. I have been successful in my career because of the U.S., for which I am grateful. I want to build a bridge between the U.S. and China so that the two countries can collaborate in science and live in peace. But the “China Initiative” makes me think that I may not belong to the U.S., and motivates

me to move back to a position in China at some point. (I do have a lot of opportunities in China). (Chinese American Professor, Astronomy)

As a Chinese professor who is trained and has been working in the U.S. for nearly 20 years, these investigations and restrictions against Chinese scholars make me feel unwelcome and somewhat discriminated and I sometimes feel my Chinese identity may be the limiting factor for my career advancement in the U.S. In the past few years, I felt for the first time since I have been in the U.S. that Chinese scientists are not valued as much as before and politics is intervening academic freedom. This makes me seriously consider moving to China if the current trend continues or even worsens. (Chinese Associate Professor, Chemistry)

[The] China Initiative makes me rethink if the U.S. is the best place to do research. The most important reason for me to stay in the states is the freedom and friendly academic environment. With many Chinese researchers being unfairly/falsely charged by the FBI, the ideal research environment seems no longer there, at least for Chinese or Chinese Americans. I myself am scared to be investigated for no reason in the future even if I am following all the policies. (Chinese Assistant Professor, Chemistry)

I was very sure that I will enjoy a permanent academic career in the United States. However, recently I started to feel unwelcome in the U.S. as an Asian professor. If the political situation gets worse, I will likely leave the U.S.. (Chinese Associate Professor, Chemistry)

I had never thought about leaving the U.S. before the Trump administration. But I feel that the political climate becomes increasingly unfriendly to Chinese in the U.S., which makes me start considering relocating to other countries. (Chinese Associate Professor, Biology)

Others considered leaving academia altogether:

I think Chinese scientists are being targeted and are not trusted at least by the government. Just thinking of it frustrates me everyday and makes me wonder why I am still contributing to the scientific advancement of the U.S while being suspected. I may well quit academia to get better pay in industry. Would I get a better life? (Chinese Postdoc, Astronomy)

Numerous respondents also took an early retirement:

I took early retirement from my university in part because of the U.S. government policies against scientific collaborations with China. I received a warning from my

university that I should declare any and all activities related to scientific collaboration with China. I strongly believe this is an infringement on academic freedom. On examining the FBI cases against academics, it was clear that normal academic activities were being misconstrued in order to build cases against individuals. Since virtually all academic research is published in the open literature (indeed U.S. government funding depends on us publishing) there cannot be a case made of passing secrets or IP. I really felt that my academic freedom in scientific collaboration was compromised and I had (and still have) very real fears that I could be targeted by the FBI for investigation. (Non-Asian Professor, Field not revealed)

International Chinese graduate students and postdocs, who have long been a significant source of talent for U.S. science, technology, engineering and mathematics (STEM) departments, are less interested in staying in the U.S.

Chinese graduate students and postdocs reported that they were initially attracted to the U.S., but are changing their future plans as a result of the China Initiative and perceptions of an unwelcome environment in the U.S. Many shared plans to look outside the U.S. for future employment:

I became aware of the potential hostility from my colleagues and institution, and changed my behavior to avoid any conflicts...Finding a professor position in the U.S. has always been my career plan, but now I am more interested in institutions at other parts of the world. (Chinese Postdoc, Biology)

Before the China Initiative was established, I have always been wanting to stay in the U.S. for my career in academia. Now after seeing so many Chinese scientists being wrongfully targeted, with the added hatred towards China/Chinese people fueled by the COVID 19 pandemic and Donald Trump, I have decided not to pursue a long-term career in the United States. (Chinese Graduate Student, Geological and Earth Sciences)

I'm now quite concerned about my future career if I stay in the U.S. for years after my graduation. I'm considering moving to some European country which has less political issues and a more welcoming environment. (Chinese Graduate Student, Physics)

Faculty also expressed challenges in recruiting graduate students from abroad. A faculty member observed:

We decided to stop any possible collaboration with China. The international graduate applicants have also dramatically dropped, and the quality of our graduate

application pool has dropped a lot. It's hard for us to recruit excellent PhD students now. (Chinese Assistant Professor, Engineering)

Another scientist conveyed their concern about the consequences without Chinese internationals:

I feel that academia in the U.S. benefits from a ton of skilled labor from underpaid Chinese students and researchers, and I worry we will stunt our academic growth if we lose them. (Non-Asian American Postdoc, Neuroscience)

As presented in the quantitative results, a noticeably higher percentage of non-Chinese scientists poses a negative view of China and of Chinese scientists as potentially engaging in intellectual theft.

I would qualify China as a scientific polluter. Anyone that is familiar with what goes on in Chinese universities understands that data is often fabricated. As a result, the Chinese do great damage to the scientific enterprise. (Non-Asian American Professor, Engineering)

Setting aside the question of intellectual property theft: in my experience, in general, Chinese scientists have been the most likely of any nationality to use shoddy or unethical methods, including outright fabrication or falsification - far more so than the academic community at large, and in contrast with scientists of other East Asian nationalities (Korean, Japanese, Singaporean, etc.) Thus, collaboration with Chinese scientists presents a higher than normal risk that the integrity of my research will be corrupted. (Non-Asian American Graduate Student, Computer Science)

As long as I can remember we have been subject to visitors from abroad coming to universities to gather information. Eastern bloc countries, Middle Eastern countries, Japanese, and other Asian countries are sending students, and gathering information. This has gone on for more than one-half century. It is not a new idea or problem. What has changed today, is that some countries are better able to take advantage of the opportunities available. Spies are everywhere. China has been active simply because it was so far behind the rest of the world. At this point China is quite capable of "rowing its own boat." It will no longer rely on scraps of information. (Non-Asian American Professor, Engineering)

The U.S. Government's China Initiative has not gone nearly far enough to contain Chinese spying, theft of IP, and infiltration of the international scientific community. The corrupt culture of mainland Chinese institutions is now polluting the scientific discourse and the body of literature in my discipline. Recently I was forced to

submit a lengthy and unnecessary rebuttal of several photoshopped Chinese papers as a part of a DOE grant application. The papers still have not been retracted despite being egregious, and the fate of my own grant application is uncertain. (Non-Asian American Assistant Professor, Chemistry)

However, many others indicated sympathy and concern, as one expressed, “It makes me ashamed that the U.S. government has acted in ways so contrary to our national aspirations. This period will be looked back on as similar to the excesses of Japanese internment and the McCarthy era red scare.” (Non-Asian American Professor, Neuroscience)

A major criticism of the China Initiative, as conveyed by respondents, is the lack of clarity about what constitutes a criminal form of collaboration, and the lack of transparency on why certain individuals were being investigated.

Some of our colleagues were accused of ‘fraud’ - not sure what fraud. Our university is very careful and everything related to collaborating with China suddenly became so strict and complicated. Under these circumstances, I would rather not collaborate with Chinese colleagues to avoid any potential troubles in the future. (Chinese American Professor, Actuarial Science)

[The China Initiative] is not just a matter of overblown. The intent is to create this atmosphere of fear. (Chinese American Professor, Computer Science)

It causes pressure and fear, which absolutely affects my productivity. I fully support that no law should be violated, and people who violated the law should be punished. However, now the academia’s routine activities are misinterpreted, and the investigations are full of racial profiling. Instead of strengthening the U.S., [the] China Initiative undermines U.S.’ attractiveness and competence because of the unprofessional actions taken by the government. There is too much suspicion instead of evidence. (Chinese Associate Professor, Engineering)

There are no clear documents about what to do and what not to do. The rules seem to keep changing. There was one professor under arrest in our university. So, any connection, no matter what has been cut off just in case. (Chinese Graduate Student, Biochemistry)

We just could not collaborate with Chinese scientists on any project because the rules are so unclear. We cannot even collaborate on topics that are not sensitive (how would I know if the U.S. gov’t considers some topics sensitive or not). They are not informed by scientists. (Chinese Assistant Professor, Ecology)

We don't do anything wrong. Science has no borders. International collaborations should be encouraged. But under the DOJ China Initiative, who knows what will happen? (Chinese American Professor, Mathematics)

I have seen highly respected senior researchers in my field targeted for mistakes that are overblown. I believe many of the charges are not criminal in nature and should not be treated as such. I do believe some of the conducts are unethical, but would not be career-ending events if not for how politicized this topic has become. This has sent a chill through the academic community and my peers and I are all thinking "who is next?" (Asian American Associate Professor, Engineering)

The lack of institutional clarity and transparency has led some scientists to cutting collaboration entirely with China-based scientists.

Since the rules are so unclear, we choose to just cut any collaborations with Chinese-based scientists. We do not even know if co-authorship constitutes illegal actions, even though all the data are publicly available online, made by U.S. agencies. (Chinese Assistant Professor, Ecology)

The main issue is that many academic institutions almost make it a requirement for faculty to conduct international collaboration, did not provide any clear guideline in terms of reporting requirements and suddenly turned their back on the faculty who actually did the international collaboration. (Chinese American Professor, Engineering)

Due to the current unknown political environment, it is too risky to have any level [of] collaboration with China. First, it is still unclear from the policy or law level to define what is "legal" or "illegal" collaboration with China, why China? Why not other countries? Korea, Japan, Israel and Europe all have similar recruiting plans or collaboration projects. Do those countries matter? Second, as a professor, we do not have time or interest to examine and understand every detail in collaboration policy, what to do and what not to do. The best way is just simply not to involve any scientific collaboration with China. (Chinese American Professor, Field not revealed)

The U.S. government and universities need to provide clear guidance regarding what are and what are not allowed to collaborate with scientists in China. Targeting scientists of Chinese descent as a group is not the right way to solve political conflict between the two countries. Scientists of Chinese descent should not be used as scapegoats for political conflict. (Chinese American Associate Professor, Genetics)

Many scientists observed that their ability to address global concerns are being hampered.

Scientists wrote about how the value and impact of their research necessitates cooperating with scientists abroad, whether it be land management, space, or marine science, as mentioned here. In each of these and other examples, scientists shared how their contributions to these global areas may be compromised:

China is developing ambitious and novel approaches to national-scale environmental conservation and land management. These approaches are controversial as well, leading to the displacement of millions of people. As the global research community tries to grapple with mitigating the effects of climate change, an issue that will require international dialogue and coordination, we need to have an open dialogue about how different countries are changing their land management strategies to learn from each other and to provide accountability. This could be well- facilitated by strong research relationships, where scientific communication is often slightly less polarized than political communication, which to me is sounding increasingly belligerent. (Non-Asian American Professor, Ecology)

It has put a chill on collaborations with scientists. I work with a former visiting scholar from [name of Chinese university] and we recognize we have to be careful about what we talk about, when all we want to do is figure out how the [name of technology] works! I think with the Chinese space program taking off bigger than expected, we will be remiss if we don't keep open the profoundly important SCIENCE connections...we need to keep scientific collaborations as open as possible. (Non-Asian American Professor, Geological and Earth Sciences)

I greatly value my friendships with Chinese collaborators and while I understand the need for increased security in some fields related to defense and technology, there is no reason why it should apply to mine (marine and environmental science) where collaboration across borders is critical for problem solving. (Non-Asian American Professor, Marine/Aquatic Biology)

Conclusion

The U.S. and China are global leaders in scientific advancement, yet suspicions about the intentions of scientists of Chinese descent in the U.S. have made our national progress difficult. As previous [research](#) has confirmed, the U.S. and China collaborate more with one another than with any other country. Together, they have jointly sought to address pressing global concerns, such as [Covid-19](#). Past [research](#) has also demonstrated that U.S. scientific productivity is supported by the country's collaboration with China. In other words, the U.S. needs China more than vice versa in maintaining our national scientific output trend. As demonstrated early in the findings, scientists of Chinese descent and non-Chinese alike recognize the value of U.S.-China collaboration.

Finding a way to come together with China is necessary for the U.S. to advance in the 21st Century and beyond. The cultures of the world are bound together at this time so the sooner we realize this truth the better it will be for all people. Also, as we move into space exploration and understanding, working together with experts from China will accelerate the advancements to come. To not work together with China will greatly suppress the pace and impact of space initiatives. It will be a substantial setback. The 21st Century is, for the first time, a potentially united world in a broad sense. That is why connecting to China is so critical for all humanity. (Non-Asian American Professor, Engineering)

I believe science has no boundaries. The U.S. has been open to all research collaborations in the past, and this has been the reason the U.S. has maintained its leadership. Research collaboration has been most beneficial to the U.S. because of its superior education and research management system. The U.S. has no reason to fear the competition from China. Most importantly, like myself, we are loyal to the U.S. and strive to make it better. The government should trust its Chinese American researchers. (Chinese American Professor, Mathematics)

Within the U.S., the survey results also point to a consistent pattern of racial profiling, as perceived by Asian scientists: Chinese, Chinese American, and other Asian groups report far greater racial profiling from the U.S. government, difficulty in obtaining research funds, professional challenges, and fear and anxiety that they are being surveilled by the government, compared to non-Asians. In other words, this research confirms that a chilling effect is indeed taking place throughout the scientific community, particularly among those of Chinese descent, including U.S. citizens.

As a consequence of racial profiling and surveillance concerns, scientists are limiting their existing and future collaboration with China. Chinese scholars are especially reluctant to engage with China. Their top reason for ending or suspending projects voluntarily is to distance themselves from the China Initiative, despite the value of China collaboration.

Survey participants shared that they feel it would be safer to halt or change their research studies than to risk being the victim of an FBI investigation. As a Chinese American Applied Mathematics Professor expressed, “*I avoid collaboration with scientists in China now so that I don’t have to worry about being falsely accused of wrongdoing*”. Others remain afraid, as another wrote “*I am deeply concerned even though I do not actively collaborate with Chinese scientists or get funding from China. The chilling effect runs deeper than just these cases*” (Chinese Assistant Professor, Ecology).

The China Initiative is also producing a wave of fear among other groups that also engage with China. Those who do not identify as Asian also describe cutting ties with their overseas Chinese collaborators, no longer hiring postdocs from China, and limiting communication with Chinese scientists from abroad, even at the expense of their research projects. The chilling effect has even been felt by those who do not perceive their work as being sensitive or of any potential interest to China. Yet, the vast discrepancy between the perceptions and experiences of Chinese and non-Chinese groups indicates that the Chinese scientific community, and to some extent the broader Asian scientific community in the U.S. has been hit especially hard.

Scientific research, which has long been driven by intellectual curiosity, is being reshaped by fear, resulting in major consequences for U.S. innovation. Scientists are abandoning collaboration with China, pursuing non-federal--which in most cases means smaller in size--funding, downsizing their projects, pursuing less sensitive topics, and working in reduced domestic teams.

Already, the U.S. has been experiencing a significant [decline](#) in new international graduate students from China, thereby weakening the graduate student talent pool. Our results indicate that the U.S.’ ability to not just recruit but retain foreign talent is also uncertain. In our survey, current Chinese graduate students and employed postdocs in the U.S. repeatedly expressed shifting their intentions from pursuing a scientific career in the U.S. to relocating abroad. Even Chinese scientists, including U.S. citizens, have also started to consider leaving the U.S. and bringing their expertise to less racially hostile places in the world. With the possible loss of Chinese talent, the U.S. may ultimately lose out in competition with China.

Commentary and Recommendations

The main implication from these empirical findings is that the China Initiative will result in continued costs to the U.S. scientific enterprise and must therefore be terminated. Opposition to the China Initiative is [mounting](#), with increasing petitions from [universities](#) for the China Initiative to end. The recent acquittal of Hu Anming demonstrates how a scientist of Chinese descent can be wrongly charged and persecuted and also raises concern that such “witch-hunts” may be an [“abuse \[of\] the concept of national security”](#). By empirically demonstrating that the China Initiative is producing a chilling effect throughout the U.S. scientific community, this study adds to the growing criticism of the China Initiative, along with calls to end the program.

Terminating the China Initiative is not the only call to action. Scientists, including non-Chinese scientists, denounced other ongoing anti-China policies in the comments section at the end of our survey. For graduate students from China especially, this includes an end to [Proclamation 10043](#), which bans Chinese international students and researchers with ties to China’s “military-civil fusion strategy,” thereby negatively affecting [thousands every year](#). Graduate students have also expressed opposition to the [1-year visa limit](#) (formerly 5 years) for international graduate students from China studying aviation, robotics, and advanced manufacturing, citing bureaucratic hurdles in reapplication. Some scientists have also criticized the longstanding [Wolf Amendment](#), which prohibits NASA funding towards bilateral collaboration with China, pointing to its ineffectiveness and pro forma steps to add collaborators from other countries. The China Initiative, as well as these three policies are mentioned in our respondents’ comments as overly sweeping barriers that impede scientific progress and the U.S.’ ability to be globally competitive. While Proclamation 10043, the 1-year visa limit, and the Wolf Amendment were not part of the study focus, they should be further examined in future empirical research.

The findings of this research show ways that the China Initiative has increased suspicions around scientific collaboration with China and turned it into a potential crime. Yet what is “criminal” needs to be clarified. Greater transparency is needed, not just [from the FBI](#), but also from federal funding agencies and universities. For most scientists whose research has long been built and is oftentimes dependent on overseas expertise, the determining line where international collaboration becomes a security violation remains unclear. There also remains considerable confusion as to what, within the broad scope of conflict of interest, constitutes a national security concern that would warrant an FBI criminal investigation.

Furthermore, how institutions educate, monitor, and address issues related to disclosures and potential misconduct varies widely. Universities play a critical role in not just protecting intellectual property but also educating its community. Many respondents described some knowledge of a colleague who is being or has been investigated, but also

admitted to a lack of information as to exactly why an individual was under scrutiny. Consequently, scientists, especially Chinese scientists, veered towards restricting any association with China out of fear that they too would suddenly be arrested or demoted without reason or justification. Beyond policing, universities must move towards educating. Scientists obviously value their intellectual property and want to safeguard it. But there needs to be more training on how to do so without extreme, punitive measures.

The problem of racial profiling in the scientific community will not be eradicated with the elimination of particular federal policies or the clarification of procedures alone. More work is needed to combat the current wave of anti-Asian hate in the U.S. Universities should consider similar studies to examine the campus racial climate. As exemplified by some scientists' comments, anti-China sentiments within universities exist. Institutional studies might ask: How have the China Initiative, other anti-China policies, and anti- China rhetoric further fueled anti-Asian hate in academia and our university? How does anti-Asian racism negatively impact scientific discovery? How can decentralized institutional units, such as export control, internationalization, and faculty/student support, better align?

Greater advocacy and support for Asian scientists in the U.S. are especially needed in order for them to continue pursuing scientific inquiry across borders without fear of prejudice, profiling, or persecution. While intellectual security must remain a priority, so too must civil liberties be maintained. With that in mind, an enduring question for academic leaders, policymakers, and researchers remains: How can we maintain the spirit of international scientific collaboration while protecting intellectual property? While we continue to seek answers and propose better solutions, our attempts should carefully consider how we can uphold, rather than sacrifice, America's academic freedom and global leadership in science.

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Appendix

Methods

The survey questions were based on reviews of past literature, including media reports, and suggestions offered by a Committee of 100 academic advisory group, comprised of scholarly experts in the field. Questions covered opinions about U.S.-China collaborations, opinions about Chinese scientists, opinions about the FBI investigations of academics, China collaboration experiences, racial profiling experiences, future plans regarding China, and demographics. The survey was piloted for feedback before distribution.

Through web scraping, we first generated a full list (75,762) of STEM graduate students, postdocs, and faculty members in the top U.S. research universities, as measured by research impact. The criteria for university selection was based on being ranked in either a) the top 50 universities by the Times Higher Education (THE)'s "Research Score," b) THE's and "Citation Score" or c) Quacquarelli Symonds (QS)'s "Citations per Faculty" in 2021, resulting in a total of 83 universities. Then, we separated the list into two groups based on whether they have a Chinese last name. The Chinese name group has 14,247 people, and the non-Chinese name group has 61,515 people. In order to purposely oversample Chinese scientists for comparison, we sent the survey invitation through email to the entire Chinese name group, and an equivalent number of randomly selected scientists from the non-Chinese name group. Each initial invitation was followed by two reminders. We received 1,060 and 889 valid responses from the Chinese and non-Chinese name group respectively, resulting in a total sample size of 1,949, and an overall response rate of 6.8%. We then corrected for any discrepancies between name and identity: 71 survey respondents from the Chinese name group identified themselves as non-Chinese, and 15 people from the non-Chinese name group indicated that they were Chinese. Overall, based on scientists' self-reported answers, our sample contains 658 Chinese and 782 non-Chinese scientists, while 509 scientists didn't report their racial/ethnic background. The third group was excluded from the comparison analyses but included in the correlational and content analyses.

The study was conducted during the China Initiative, which likely limited the response rate and the extent of self-reported collaboration with China. Upon distribution of the survey, numerous individuals emailed Dr. Lee directly, asking for verification that the study was real. As survey researchers know, this is not common practice. Her Chinese colleagues shared that they completed the survey because they knew her directly and would otherwise have not participated in the survey, based on fears that the survey was an FBI setup to identify Chinese collaborators.

As shared by one survey respondent, *“I have made some changes on all checked items [asking about research collaborations with China], because of the China Initiative. Not because I had anything to hide, but because the China Initiative can clearly be used to entrap.”* Doubt about the intention behind some questions was also openly expressed, *“This question seems to be a trap by mandatorily relating U.S. funding to China through collaboration that does not involve money.”* Survey responses about U.S.-China experiences may have thus been self-censored, suggesting that the problems are much worse than reported.

Tables

Table 1. Comparisons between Chinese and non-Chinese scientists

	N	Chinese	Non-Chinese	Chi-square
<i>Racial profiling</i>				
Feel racially profiled by the U.S. government	1414	42.2% (272)	8.6% (66)	215.715**
Experience difficulty obtaining research funding in the U.S. as a result of their race/nationality/country of origin	1125	38.4% (208)	14.2% (83)	84.759**
Experience professional challenges as a result of their race/nationality/country of origin	1159	37.5% (209)	16.3% (98)	65.384**
Feel considerable fear and/or anxiety of being surveilled by the U.S. government	1408	50.7% (328)	11.7% (89)	253.297**
<i>Collaboration experiences & intentions</i>				
Conducted international collaborative research that involves China over the past 3 years	1439	50.9% (335)	35.6% (278)	33.639**
Limited communication with collaborators in China over the past 3 years[1]	581	40.6% (131)	12.8% (33)	53.222**

Decided not to involve China in future projects over the past 3 years[2]	581	23.8% (77)	5.8% (15)	33.627**
Decided not to work with collaborators in China in the future projects over the past 3 years[3]	581	23.2% (75)	9.7% (25)	17.489**
Had to prematurely or unexpectedly end/suspend research collaborations with scientists in China over the past 3 years[4]	611	19.5% (65)	11.9% (33)	6.027
Wanted to distance themselves from collaborators in China due to the China Initiative over the past 3 years[5]	98	78.5% (51)	27.3% (9)	22.05**

Mobility intention (foreign citizens only)

FBI investigations and/or the China Initiative affected their plans to stay in the U.S.[6]	592	42.1% (184)	7.1% (11)	61.908**
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Opinions about China and FBI

U.S. should be tougher on China to prevent theft of intellectual property	1421	39.7% (259)	74.8% (575)	177.331**
Academic espionage and intellectual theft in academia among Chinese scientists is a serious problem	1397	14.1% (91)	43.5% (326)	141.998**

Fully support all investigations from the FBI	1408	5.7% (37)	22.2% (169)	74.807**
The scrutiny from the U.S. government is overblown	1408	68.9% (446)	36.0% (274)	150.428**

Note: ** p < 0.001, * p < 0.01

Table 2. Comparisons between non-Chinese Asian and non-Asian scientists

	N	Non-Chinese Asian	Non-Asian	Chi-square
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Racial profiling

Feel racially profiled by the U.S. government	769	27.1% (36)	4.7% (30)	67.216**
Experience difficulty obtaining research funding in the U.S. as a result of my race/nationality/country of origin	584	26.3% (31)	11.2% (52)	16.42**
Experience professional challenges as a result of my race/nationality/country of origin	601	37.1% (46)	10.9% (52)	47.583**
Feel considerable fear and/or anxiety of being surveilled by the U.S. government	761	25.6% (34)	8.8% (55)	28.411**

Collaboration experiences & intentions

Conducted international collaborative research that involves China over the past 3 years	781	27.9% (38)	37.2% (240)	3.814
Limited communication with collaborators in China over the past 3 years[1]	258	13.9% (5)	12.6% (28)	0
Decided not to work with collaborators in China in the future projects over the past 3 years[3]	258	13.9% (5)	9.0% (20)	0.378
Had to prematurely or unexpectedly end/suspend research collaborations with scientists in China over the past 3 years[4]	278	13.2% (5)	11.7% (28)	0

Opinions about China and FBI

U.S. should be tougher on China to prevent theft of intellectual property	768	74.4% (99)	74.8% (476)	0
Academic espionage and intellectual theft in academia among Chinese scientists is a serious problem	750	51.5% (69)	41.7% (257)	3.888
Fully support all investigations from the FBI	761	27.8% (37)	21.0% (132)	2.558
The scrutiny from the U.S. government is overblown	761	30.1% (40)	37.3% (234)	2.158

Note: ** p < 0.001, * p < 0.01

Table 3. Pearson’s correlation coefficients among variables of racial profiling, institutional messaging, collaboration experiences, collaboration intentions and mobility intentions

	Limited communication with collaborators in China over the past 3 years	Decided not to involve China in future projects over the past 3 years	Decided not to work with collaborators in China in the future projects over the past 3 years	FBI investigations and/or the China Initiative affected my plans to stay in the US (foreign citizens only)
Feel racially profiled by the U.S. government	0.25**	0.26**	0.20**	0.36**

Feel considerable fear and/or anxiety of being surveilled by the U.S. government	0.22**	0.21**	0.21**	0.41**
Their university has discouraged collaboration with China	0.36**	0.30**	0.28**	0.24**

Note: ** p < 0.001, * p < 0.01

[1] Question was asked if participants indicated that they collaborated with China over the past 3 years.

[2] Question was asked if participants indicated that they collaborated with China over the past 3 years.

[3] Question was asked if participants indicated that they collaborated with China over the past 3 years.

[4] Question was asked if participants indicated that they collaborated with China over the past 3 years.

[5] Question was asked if participants indicated that they had to prematurely or unexpectedly end/suspend research collaborations with scientists in China over the past 3 years.

[6] Question was only asked among foreign citizens.

-END-

