



UNIVERSITY ENGAGEMENT WITH CHINA: AN MIT APPROACH

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EXECUTIVE SUMMARY

The subject of this report is MIT's future relationship with China. The question it addresses is how the Institute and other American research universities should engage with organizations and individuals in countries whose political leaders are pursuing policies that are irreconcilable with basic human rights and values and that pose security risks to the United States. While China is the focus of this report, some of the findings apply to MIT's relations with other countries, too. The outlook for the China relationship is increasingly uncertain because of the harsher political climate in China, the intensifying geopolitical and strategic rivalry between China and the United States, and concerns over attempts by Chinese interests to gain advantage over the United States by exploiting American university research.

MIT has flourished because it has been a magnet for the world's most talented students, scholars, and innovators, many of them from China. MIT faculty collaborate productively in research and education with colleagues in countries around the world, including China. Now, like the rest of American society, MIT and other research universities must prepare for a period of contentious and potentially confrontational relations between the United States and China. Because the U.S.-China rivalry focuses on competition in science and technology and its convergence with national security, economic security, and human rights concerns, pressures are building in both countries to erect higher barriers to academic research collaborations and educational exchange, especially in scientific fields.

“The challenge for MIT and other U.S. universities is how to manage these pressures while preserving open scientific research, open intellectual exchange, and the free flow of ideas and people — all of them essential for American universities to remain at the global forefront of research, education, and innovation.”

The challenge for MIT and other U.S. universities is how to manage these pressures while preserving open scientific research, open intellectual exchange, and the free flow of ideas and people — all of them essential for American universities to remain at the global forefront of research, education, and innovation.

This report charts a path for MIT's future relations with China. It recommends an approach that combines selective engagement with targeted risk assessment and management. This approach is designed to help MIT advance knowledge and the needs of the nation and the world — without damaging U.S. interests in national security or the economy, without endangering human rights, and in ways that are consistent with the core values of the Institute.

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Some observers will find it difficult to understand why there should be any engagement at all between American research universities and China in the current environment. The authors of this report take seriously the concern that the Chinese government — and other foreign governments — are targeting U.S. research and technology to gain advantage. We recognize too that when researchers at U.S. universities collaborate with individuals or institutions in countries with authoritarian or autocratic governments, the good intentions of their collaborators do not assure good outcomes. Yet even if the geopolitical rivalry between the U.S. and China intensifies further, MIT, other research universities, and the nation can benefit from continued academic relations with China. U.S. universities should be prepared for scenarios that would force the termination of these relations, but ending them today would weaken the foundations of American science, technology, and innovation.

Open scientific research — defined as research for publication — is the foundation of knowledge, education, and innovation in U.S. research universities. It is vital to turn back the erosion of support for open scientific research

among U.S. officials and the taxpayers who support much of our work before it is too late. At the same time, in the current environment, academic cooperation for its own sake is no longer sufficient, and in every case the likely benefits must be clearly identified and the risks managed effectively. For most U.S. universities this will entail developing new risk management capabilities. For all of them it will require a productive relationship with the federal government.

Most of our recommendations are directed toward MIT itself — the MIT administration and other members of the MIT community, especially the faculty, whose work shapes MIT's engagement with the world. There is also a need for changes in federal policy, though that is not the primary focus of this report. The absence of clear, coherent, consistent federal policy guidance regarding research and education interactions with China is disrupting academic decision-making and has harmed the U.S. scientific enterprise. An integrated government policy framework addressing immigration, research security, and research collaboration is urgently needed. The policy should be proportionate to the level of risk, and the solutions should not cause greater difficulties than the problems they are intended to solve.

“The absence of clear, coherent, consistent federal policy guidance regarding research and education interactions with China is disrupting academic decision-making and has harmed the U.S. scientific enterprise.”

But federal policy, no matter how well-crafted, cannot be a substitute for effective actions taken at the university level. MIT and other universities must draw on their more detailed knowledge of educational and research practices and principles to develop effective risk management processes of their own. These actions will complement U.S. policy and will help avoid the imposition of external restrictions that would further damage U.S. education, research, and innovation.

Recommendations to MIT

- The report affirms several principles and lines that should not be crossed in any of MIT's international engagements. These include not engaging in collaborative activities that could compromise the integrity or objectivity of our academic work; not engaging in research collaborations that might help foreign governments use advanced technologies against the United States; not accommodating attempts by prospective partners to exclude MIT people from participation in activities based on nationality, race, gender, or ethnicity; and not engaging in collaborations that might contribute to human rights abuses by foreign governments against their own citizens. The Institute's existing elevated-risk review process helps to ensure that these lines are not crossed in China-related engagements.¹ It also provides guidance on activities that would not violate those principles, but nonetheless require careful balancing of risks and benefits. An important aspect of this review process is to consider the risks of *not* undertaking proposed engagements, as well as the risks of doing so. There are important areas of research and education in which MIT, the academic community, the nation, and the world would be better off with more, rather than less, scientific collaboration with China.

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- Recommendations to strengthen MIT's risk management capabilities include:
 - Developing informational resources to help principal investigators (PIs) better understand the context in which proposed research collaborators in China are operating, including the ways in which organizations and individuals in China are connected to, and might have obligations to, the Chinese government or the Chinese Communist Party;
 - Providing training and other guidance at the individual school level to help PIs educate members of their research groups about the norms and expectations for sharing information, samples, or equipment outside the groups;

¹ MIT's elevated-risk review process, introduced in 2019, focuses on proposed academic engagements with certain countries, including China, that merit additional faculty and administrative review beyond the usual evaluations that all international projects receive.

- Strengthening and systematizing internal reporting systems for disclosures of conflict of interest, conflict of commitment, and current and pending support, and also for reviewing informal collaborations with colleagues in China and other countries posing significant security risks.
 - Circumstances that should disqualify a company from having a relationship with MIT include:
 - Any direct involvement in government intelligence activities or a direct relationship with the Chinese armed forces as a provider of systems, products, or services with military applications;
 - Credible evidence that the company's activities are contributing to the suppression of human rights in Xinjiang or elsewhere in China.
-

“Circumstances that should disqualify a company from having a relationship with MIT include any direct involvement in government intelligence activities or a direct relationship with the Chinese armed forces as a provider of systems, products, or services with military applications.”

- MIT should not engage in research collaborations with China's national defense universities, military research institutes, or national defense key laboratories at civilian universities.
- MIT executive and professional education programs should not enable or empower organizations that are contributing to the suppression of human rights or that have direct connections to Chinese military or intelligence activities.
- MIT's research is led by PIs, and their role in risk assessment and management is central. Recommendations to MIT PIs include the following:
 - Before embarking on collaborations involving China, PIs should develop assessments of the expected benefits of collaborating with the Chinese entity specifically, including broader benefits to MIT, the research community, and the country. The expectation of unique benefits is not a necessary condition for collaborations to take place, but it is relevant to the overall assessment of risks and benefits.

- PIs are responsible for ensuring that all members of their research groups understand the norms and expectations regarding the sharing of information outside the group and for continually reinforcing those norms.

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- Faculty may receive compensation at any level for their outside work, but they should take into account that high-pay compensation for consulting with foreign entities may be considered by the wider community as endorsement of that entity’s activities well beyond the specific service the faculty member provides. Faculty are advised to exercise extra caution before accepting compensation for outside activities from the Chinese government or from government-funded programs, and to disclose such activities fully in required disclosures of conflicts of interest and commitment and current and pending support. If faculty are considering entering into contractual relationships with Chinese entities as part of their outside work, they are encouraged to seek advice from MIT’s Office of General Counsel before doing so.
- Faculty should not participate in “talent recruitment” programs that are designed to transfer technology to China.
- Faculty should not hesitate to recommend their MIT students or postdocs or other students they know for positions in China, but they should avoid writing letters of recommendation for non-MIT students in programs in which they have been paid to teach. They should also avoid playing organizational or administrative roles, either with or without compensation, in programs that seek to channel graduates into jobs in China.
- MIT should not appoint as postdocs or visiting researchers individuals who are known by MIT to be currently employed by Chinese military and security institutions.
 - Responsibility for determining who is admitted or accepted from overseas by U.S. universities is shared with the federal government, through the exercise of the latter’s visa-granting authorities. Further clarification and stabilization of

federal visa and immigration policies governing admittance of students from China is urgently needed. We urge that federal policies restricting student visa eligibility be clearly specified and limited in scope. Our primary concern today is that the continuing uncertainty about federal visa and immigration policies is deterring outstanding Chinese students and scholars from applying to MIT and other universities and from staying in the U.S. once here. This situation has negative implications not only for MIT but more broadly for the strength of the U.S. science, technology, and innovation enterprise.

- MIT should expand the opportunities available to our students to become knowledgeable about China's history, society, culture, language, politics, economic development, and science, and to develop practical, hands-on knowledge of Chinese business practices and innovation capabilities. Other resources should be developed to help MIT faculty experts and their students gain a deeper understanding of Chinese scientific and technological capabilities and advances.
- Finally, we propose that a committee of MIT faculty and staff should be tasked with planning for the implementation of these recommendations and monitoring progress toward the goals we have identified in this report.

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I

INTRODUCTION



I. INTRODUCTION

MIT's relationships to China have been historically important to the Institute. Today many students, scholars, and faculty of Chinese origin are making valuable contributions to the life and work of the MIT community, and China continues its rise as a world leader in science, technology, and innovation.² These relationships are now under pressure due to the increasingly harsh political climate in China, the intensifying geopolitical rivalry between China and the United States, and concerns over attempts by Chinese interests to gain advantage over the United States by exploiting American university research.

The authors of this report were asked by MIT President L. Rafael Reif early in 2021 to advise on how MIT should approach engagement with China. The report examines whether and how MIT should engage with organizations and individuals in countries whose leaders are pursuing policies that are irreconcilable with basic human rights and values and that pose security risks to the United States. While the focus of the report is China, some of the findings apply to MIT's relations with other countries, too.

The report's authors are a group of senior faculty and administrators at MIT with knowledge and experience of U.S.-China relations in science and technology, security, economics, politics, and higher education. To prepare this report, our group met regularly between February 2021 and May 2022 and consulted extensively with members of the MIT community and outside experts.

Most of the findings and recommendations are directed toward the MIT community — the faculty, students, staff, administrators, and alumni whose work shapes MIT's engagement with China. There is also a need for changes in federal policy, but that is not the primary focus of this report. The absence of clear, coherent, consistent federal policy guidance regarding research and education interactions with China is disrupting academic decision-making and has harmed the U.S. scientific enterprise. An integrated government policy framework addressing immigration, research security, and research collaboration is urgently needed. But federal policy, no matter how well-crafted, cannot be a substitute for principled, effective actions taken at the university level. These actions can complement U.S. policy and help avoid the imposition of external restrictions that would further damage U.S. education, research, and innovation.

American universities must now prepare for a prolonged period of contentious and potentially confrontational relations between the United States and China. This rivalry centers on competition in science and technology and its convergence with national security, economic competitiveness, and human rights concerns. As the two countries compete for control over strategic technologies, as the boundary between civilian and military applications grows more

² During the 2021-2022 academic year there were 71 undergraduate students and 816 graduate students from China at MIT (1.5% of total undergraduate enrollment and 11.2% of total graduate student enrollment respectively). There were also 264 postdoctoral associates and fellows from China (19% of the total postdoc population). Finally, 49 members of the MIT faculty (a little under 5% of the total) are originally from China.

blurred, and as tensions in the bilateral relationship escalate, internal and external pressures to erect higher barriers to academic research and educational collaborations are building. The challenge for MIT and other American universities is how to manage these pressures while preserving open scientific research, open intellectual exchange, and the free flow of ideas and people — all of them essential for American universities to remain at the global forefront of research, education, and innovation.

To cut off all academic interactions with China would weaken the foundations of American science and technology and negatively affect U.S. economic development and national security. But engagement brings its own risks, and new approaches to managing these risks are needed. The U.S. government has a responsibility to prevent foreign governments from exploiting the openness of U.S. research universities to undermine national interests. For their part, universities need to develop more effective risk management processes of their own, particularly as they have a deeper understanding of the details of these interactions and the particular risks associated with each of them.

The response should be proportionate to the level of risk, and the solutions should not cause greater difficulties than the problems they are intended to solve. Certain actions taken by the U.S. government to address research security on university campuses have already caused great concern within the academic community and have harmed the U.S. scientific enterprise. The U.S. Department of Justice's "China Initiative," which was intended to focus on China's scientific espionage and technology theft on U.S. campuses, led to accusations that the government was criminalizing normal scientific and academic exchange, and it has convinced outstanding young Chinese scientists at U.S. universities to pursue their careers in other countries.

More generally, the lack of clear, coherent, consistent federal guidance regarding research and education interactions with China is disrupting academic decision-making, as researchers worry about how their activities will be perceived.

Policy approaches that conflict with the core mission and core values of U.S. research universities are unlikely to succeed. At MIT, our mission is to advance knowledge and educate students in ways that will best serve the nation and the world. Our values include maintaining a campus environment where anyone, regardless of background, can excel; preventing bias and discrimination based on nationality, race, ethnicity, gender, or other personal characteristics; and preserving the openness of academic research to people, knowledge, and ideas from around the world. We also seek to provide opportunities to our students to become knowledgeable about China's history, society, culture, language, politics, economic development, and science, and to develop practical, hands-on knowledge of Chinese business practices and innovation capabilities. The benefits of this knowledge to our students, and more broadly to the United States, will only grow in the coming years.

This report proposes a way to further these disparate objectives, so that academic exchange and collaboration with other countries, including China, can help advance knowledge and the

needs of the nation and the world without endangering U.S. interests in security, the economy, or human rights. We call here for an approach that combines selective engagement with China with targeted risk assessment and management.³

We are part of a university with a deep commitment to international engagement and collaboration in education and research. As MIT President Reif has observed, “MIT has flourished, like the United States itself, because it has been a magnet for the world’s finest talent.”⁴ And as a recent review of MIT’s global strategy noted, “[l]earning about the world, helping to solve the world’s greatest problems, and working with international collaborators who share our curiosity and commitment to rigorous scientific inquiry are core values for MIT.”⁵

MIT also has a long history of contributions to America’s national security and its scientific, technological, and economic development. MIT graduates have launched many new American industries and have helped to create millions of American jobs. MIT’s contributions to the nation’s defense date to the Institute’s founding. Today, MIT operates Lincoln Laboratory for the federal government, and other MIT laboratories are funded substantially by the government for the purpose of developing new technologies for national security. Together with other U.S. research universities, MIT is also a key part of the nation’s civilian innovation system, which is critical to advancing the nation’s well-being.

In these ways, MIT has successfully pursued its dual mission of service to the nation and to the world. With this report, we outline an approach that will enable the Institute to continue this dual mission during a period of intensifying global rivalry with China, when the academic community will face new challenges in finding a balance between open science and research security.

MIT has already put in place stronger processes to manage these risks and opportunities. More will be needed, and we believe it is important to map out these steps. MIT must continue to examine its policies and processes as the situation in China, the international outlook, and U.S. policies and regulations continue to evolve.

The remainder of this report is divided into the following sections:

- **Section II** discusses the benefits and risks of the U.S.-China academic relationship in broad terms.
- **Section III** outlines a China strategy for MIT. This includes lines we should not cross, as well as guidance for principal investigators and others in the MIT community.
- **Section IV** concludes.

3 The risks considered in this report are additional to those that may arise in any external engagement, whether domestic or international, that are routinely evaluated and managed by MIT’s research administration. Those reviews typically focus on risks to the integrity and objectivity of our academic work, and the possibility of pressure on researchers’ intellectual independence, attempts to restrict the publication of research results, conflicts of interest and commitment, misuse of intellectual property and data, and/or unwanted associations with unethical or illegal behavior by benefactors.

4 L. Rafael Reif, “Immigration is a kind of oxygen,” letter to the MIT community, June 25, 2019, <https://president.mit.edu/speeches-writing/immigration-kind-oxygen>

5 Richard K. Lester, “A Global Strategy for MIT,” May 2017, <http://web.mit.edu/globalstrategy/>



WHAT IS AT STAKE

THE BENEFITS AND RISKS OF
THE U.S.-CHINA ACADEMIC RELATIONSHIP



II. WHAT IS AT STAKE

The ill-judged arrest and failed prosecution of our MIT colleague, mechanical engineering professor Gang Chen, brought home to our community the dangers of overreach by U.S. government authorities as they try to respond to the risks to U.S. research security posed by the Chinese government. As Professor Chen noted after federal prosecutors dropped all charges against him:⁶

“My reputation is tarnished, my family suffered, my Institute lost the service of a professor and bore the financial burden of my legal defense, U.S. taxpayers’ money was wasted, the ability of the United States to attract talents from around the world has plummeted, and the scientific community is terrified.”

It is difficult to imagine a clearer illustration of how the government’s attempts to find solutions can be worse than the problem they are intended to solve.

Yet our group takes seriously the concern that foreign governments — especially the Chinese government — are targeting U.S. research and technology to gain advantage. We also take seriously the obstacles to mutually beneficial research collaborations caused by the policies and practices of the Chinese government, such as interventions and restrictions limiting academic autonomy on Chinese university campuses, the risk of seizure of intellectual property that is deemed to be in China’s national interest, and attempts to exert influence over Chinese students and scholars in the West.

When researchers at U.S. universities collaborate with individuals or institutions in a country with an authoritarian or autocratic government, the good intentions of their collaborators do not assure good outcomes.⁷ In the current environment, academic cooperation for its own sake is no longer sufficient; instead, U.S. universities must be deliberate about new cooperation initiatives. The likely benefits must be clearly identified, and the risks managed effectively. For most U.S. universities this will entail developing new capabilities. For all of them it will require a productive relationship with the federal government.

In Section III we recommend a strategy for MIT’s future academic interactions and collaborations with China. In the remainder of this section we discuss the broader significance of university relations with China for the nation and the world. Three aspects are highlighted:

⁶ [The Boston Globe, January 21, 2022.](#)

⁷ The authors of a thorough study of one Chinese AI research institute concluded that even if research institutes in China are following ethical standards and are not affiliated with the military or with public security organizations, the ultimate control exerted by the central government and the Communist Party over their activities means that the possibility of diversion of research results to problematic uses cannot ever be ruled out. (See Jeffrey Stoff and Glenn Tiffert, “Eyes Wide Open: Ethical Risks in Research Collaboration with China,” Hoover Institution, December 2021,

<https://www.hoover.org/press-releases/eyes-wide-open-ethical-risks-research-collaboration-china>)

- Open research on American university campuses
- Students from China at U.S. universities
- Research collaborations between U.S. and Chinese scientists

Open research on American university campuses

Open scientific research — defined as research for publication — is the foundation of knowledge, education, and innovation in U.S. research universities. This system is based on the principles of unhindered access to scientific publications and data, along with the unrestricted movement of ideas and information. Restricting scientific discourse stymies scientific progress because it prevents researchers from building on or challenging each other's work. Erecting barriers around academic research will deny the United States, as well as others, the benefits that result from scientific progress.

Our open research system does allow other nations to benefit from work in the United States. The Chinese government has taken advantage of this access to utilize U.S. universities systematically as sources of forefront academic research in areas in which China has lagged. Much of this knowledge has been acquired openly through normal academic activities in the classroom, as well as from scientific publications and scientific collaborations. In some instances, the knowledge has been acquired inappropriately or illegally.⁸ The small number of such cases involving universities that have come to light suggests that this has been a relatively minor channel of knowledge transfer up to now.⁹

The asymmetry between the U.S. system of open science and China's less open and more centrally directed system, with its tighter coupling between research and government, has introduced new risks for U.S. technological and economic competitiveness. But we believe that the United States has more to lose than gain if broad, sweeping restrictions on academic research are implemented that degrade or dismantle the U.S. system of open science.

8 Examples are cited by the FBI in its report "China: The Risk to Academia," <https://www.fbi.gov/file-repository/china-risk-to-academia-2019.pdf/view>. Neither the FBI nor other branches of the U.S. government have provided public estimates of the scale of the research security problem on U.S. university campuses. The Princeton University researcher Rory Truex recently concluded that "there is insufficient evidence that academic/economic espionage by Chinese nationals is a widespread problem at U.S. universities."

(R. Truex, "[Addressing the China Challenge for American Universities](#)," Johns Hopkins University Applied Physics Laboratory, November 2020.

9 FBI sources have recently noted that the bureau's focus is on foreign efforts to steal from the corporate sector, rather than academia. See Pete Williams, "FBI Director Wray says scale of Chinese spying in the U.S. 'blew me away'," NBC News, Feb. 1, 2022, <https://www.nbcnews.com/politics/politics-news/fbi-director-wray-says-scale-chinese-spying-us-blew-away-rcna14369>. See also "Joint Address by MI5 and FBI Heads," Security Service MI5, July 6, 2022, <https://www.mi5.gov.uk/news/speech-by-mi5-and-fbi>

Long-standing federal policy, formalized in 1985 by President Ronald Reagan in National Security Decision Directive 189 (or NSDD 189) at the height of U.S.-Soviet military competition and repeatedly reaffirmed since then, has been central to maintaining the system of open research. The policy calls for American university science to operate in “an environment in which the free exchange of ideas is a vital component.” It states that fundamental research should generally be open, and that in the relatively rare cases where security concerns must take precedence, research should be classified and conducted in closed facilities requiring security clearances (rather than regulated by creating other limiting categories).¹⁰ Closed laboratories conducting classified research do exist on some U.S. university campuses, while some other universities carry out classified research at off-campus facilities, but most government-funded research conducted on U.S. university campuses has remained unrestricted. (On the MIT campus, several laboratories conduct national security-related research sponsored by the federal government, but none of this research is classified. MIT carries out classified research for the federal government at the off-campus Lincoln Laboratory.)

Recently, some federal agencies have been seeking to impose more restrictions on research and publication and to blur the distinction between open and restricted research, for example by expanding the reach of the Controlled Unclassified Information program.¹¹ This trend, which would limit which individuals (especially foreign nationals) could conduct research on U.S. campuses, threatens innovations that advance the national interest and the global good. We urge continued adherence to the policy embodied in NSDD 189.¹²

We also urge federal agencies to abandon the practice of requiring universities to apply nationality or national origin criteria to determine who should be permitted to work on research projects. The government can and should vet which individuals are admitted to the United States, but once admitted they should be able to participate in any unclassified research project, except if participation would violate export controls. Universities should not be required to prevent certain groups of students, faculty, or staff from working in specific research fields or from studying particular academic subjects based on nationality (or any other category).

¹⁰ President Reagan and National Security Council, “NSDD 189 National Policy on Transfer of Scientific, Technical and Engineering Information,” National Archives, Sept. 21, 1985, <https://catalog.archives.gov/id/6879779>

¹¹ “Controlled Unclassified Information (CUI),” U.S. General Services Administration, <https://www.gsa.gov/reference/controlled-unclassified-information-cui>

¹² See also National Science Foundation, “Fundamental Research Security,” JASON Report JSR-19-21, December 2019, https://www.nsf.gov/news/special_reports/jasonsecurity/JSR-19-21FundamentalResearchSecurity_12062019FINAL.pdf

Students from China at U.S. universities

The ability of American universities to attract outstanding young scientists from around the world to study has been essential to America's global leadership in scientific research, technological innovation, and technology-based entrepreneurship. In 2019, 41% of all PhD graduates in STEM subjects were temporary visa holders from other countries, with China accounting for more of these graduates than the next nine foreign countries combined.¹³ The vast majority of students from many of these countries, including China, choose to remain in the United States after they graduate. In the competition with China, the openness of American universities is a source of strength. Unless we as a country decide otherwise, the United States will continue to attract some of the best of Chinese talent, while China will not be able to attract the best of ours. This is a key competitive advantage and a huge benefit to America, and it is one we must preserve.

New and often unpredictably implemented U.S. visa restrictions, growing U.S. government scrutiny, and perceptions of rising bias and discrimination are causing many Chinese students and scholars to feel unwelcome in the United States. Meanwhile, other Western countries, while sharing U.S. concerns over research security in universities, have been ramping up their efforts to attract and retain foreign talent, especially in STEM fields. We know of outstanding young Chinese scientists at MIT who have recently decided to pursue their careers in other countries they view as more welcoming. Previously, these graduates would very likely have chosen to stay in the United States. The annual volume of graduate applications from China to study at MIT has continued to rise in recent years, although at a slower rate than before.¹⁴ But some of MIT's science and engineering departments report that top-rated students at Chinese universities, students who in previous years would have applied to graduate school at MIT and other leading American universities, are instead choosing to stay in China to pursue their graduate studies.

Stabilizing and clarifying visa policies and addressing anti-Chinese and anti-Asian sentiments in the United States are critically important. Still, as salaries rise and professional opportunities multiply in China, more Chinese graduates may find it attractive to return to China from the West, while more Chinese undergraduates may choose to stay home to pursue their graduate studies at top Chinese universities, whose quality is rising. Chinese authorities can also be expected to work harder to keep their most talented students at home, as part of President Xi Jinping's drive to enhance national autonomy in science and education. This makes it even more important for U.S. policy to encourage, rather than discourage, outstanding Chinese students to come to the United States to study and to stay, including creating an expedited pathway to permanent residency for foreign PhD graduates.

¹³ See National Center for Science and Engineering Statistics, Data Tables, Tables 18 and 26, National Science Foundation, <https://nces.nsf.gov/pubs/nsf21308/data-tables>

¹⁴ In recent years, Chinese graduate applications to MIT have been growing at a slower rate than applications to MIT from the rest of the world.

Research collaborations between U.S. and Chinese scientists

The United States and China are the world's largest producers of scientific knowledge, and researchers in the two countries collaborate with each other more than any other international pairing.¹⁵ Although China has almost certainly been the greater beneficiary until now, U.S. science and innovation stands to benefit increasingly as China's investment in science and technology continues to grow. Curtailing those collaborations would be harmful to the scientific communities in both countries, and to all who benefit from their work in each country and throughout the world.

China is now the world's second-largest funder of R&D, behind the United States. Between 2009 and 2019 its gross domestic spending on research and development increased almost threefold, and by the end of that period had risen to 84% of U.S. R&D spending, up from 41% a decade earlier.¹⁶ China has a growing share of world-leading scientific instruments and facilities, and it is also investing heavily in its research universities. According to one recent ranking based on research output as measured by publications in leading journals, China accounts for 10 of the world's 20 leading young universities (i.e., those founded within the past 50 years).¹⁷

China is rapidly approaching the global forefront of many fields of scientific and engineering research, and Chinese accomplishments in important fields now match or exceed those of the United States.¹⁸ President Xi Jinping has made clear that achieving superiority in science and technology is central to his vision of Chinese state power. He recently called for China to achieve global leadership by 2035 in fields including artificial intelligence (AI), clean energy, advanced manufacturing, aerospace, quantum science and engineering, and genetic engineering. Continued high levels of investment in these and other areas of research and development can be expected.

15 For U.S. researchers, the number of joint publications in high-quality journals with Chinese co-authors was more than twice as large as with the next most important collaborator (the U.K.) during the 12 months ending in March 2021. See Nature Index, "2021 tables," Nature.com, <https://www.natureindex.com/annual-tables/2021>.

16 OECD Data, "Gross domestic spending on R&D," Organisation for Economic Co-operation and Development, <https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm>. According to the OECD, in 2019 China's gross domestic R&D expenditure was \$514.8 billion (in U.S. dollars, using purchasing power parity exchange rates with 2010 as base year), approaching the \$612.7 billion spent by the United States.

17 Nature Index, "Leading 150 young universities," Nature.com, <https://www.natureindex.com/supplements/nature-index-2021-young-universities/tables/overall>

18 Recent reports assessing the relative capabilities of the United States and China in different fields of science and technology include Autumn Toney and Melissa Flag, "Comparing the United States' and China's Leading Roles in the Landscape of Science," Center for Security and Emerging Technology, June 2021. See also: Eric Schmidt and Jared Cohen, "Asymmetric Competition: A Strategy for China and Technology," China Strategy Group, Fall 2020, <https://www.documentcloud.org/documents/20463382-final-memo-china-strategy-group-axios-1>. Our committee was also informed by an informal, unpublished 2018 survey of MIT faculty asking for their assessment of Chinese capabilities in their scientific fields.

Even if the strategic competition between the United States and China intensifies and the bilateral relationship continues to deteriorate, and even if the overall trend in economic relations between the two countries is toward less, rather than more, engagement, the United States can benefit from academic exchange and collaboration with China. There are opportunities in many fields of fundamental research, as well as in critically important fields related to climate change and in areas such as food safety and cancer research, where the two countries have common interests and complementary capabilities.

Collaborations can also benefit the United States by providing critical windows into Chinese research. At present, U.S. capabilities for evaluating the strengths and limitations of Chinese science and technology are underdeveloped relative to China's capabilities of this type.¹⁹

¹⁹ See Schmidt and Cohen, *op.cit.*

III

A CHINA STRATEGY FOR MIT

III. A CHINA STRATEGY FOR MIT

The U.S. policy framework for academic interactions with China is in flux. The Biden Administration has recently outlined the broad goals and parameters of U.S. policy toward China,²⁰ and the Administration is seeking to develop disclosure rules for academic researchers working with Chinese collaborators that are supposed to be clear and consistent across federal agencies.²¹ These are steps in the right direction, but universities remain uncertain about what is required, what is forbidden, and how to evaluate what is in between. In the meantime, Congress continues to consider new requirements and restrictions, and the Biden Administration continues to enforce the visa policy laid out in the Trump Administration's Presidential Proclamation 10043, which broadly bars the entry of students from entities associated with the "military-civil fusion strategy," without providing clarity on exactly which institutions in China are being targeted.

When clarity in federal requirements is lacking, faculty look to their home institutions for guidance. Moreover, even a fuller and better-calibrated government policy framework will not address all aspects of academic engagement with China, nor should it. The autonomy of American universities and the intellectual autonomy of their faculty are fundamental principles in our education system. MIT and other universities need to draw on their more direct and detailed knowledge of educational and research practices and principles to develop approaches of their own. By adopting their own regulatory frameworks, priorities, and goals for their China-related engagements, universities can also help avoid the imposition of external restrictions that could harm U.S. education, research, and innovation.

MIT has been strengthening its management and oversight of China-related activities for several years. These efforts are continuing as more experience is gained and as the external environment continues to evolve.

At MIT, oversight of China-related activities is distributed across multiple administrative and academic units, with the central administration responsible for overarching review. Acceptance of international students, postdoctoral researchers, and visiting scientists and faculty is managed by academic departments, laboratories, and research centers, and by central administrative units within the offices of the Vice Chancellor and the Vice President for Research. The security and integrity of research activities on the MIT campus is overseen

20 Anthony J. Blinken, "The Administration's Approach to the People's Republic of China," U.S. Department of State, May 26, 2022, <https://www.state.gov/the-administrations-approach-to-the-peoples-republic-of-china/>

21 Recent guidance from the White House calls on the research agencies to standardize their requirements for disclosure (see Office of Science and Technology Policy, "Guidance for Implementing National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government-Supported Research and Development," The White House, Jan. 4, 2022, <http://www.whitehouse.gov/ostp/nstc>)

by the Office of the Vice President for Research. The development of new international research and educational collaborations is undertaken by the faculty, often jointly with the administration.

MIT's research is led by principal investigators (PIs). They have the ideas that engage students and other researchers, they bring in the grants to help support their research, and they form the relationships with institutions outside MIT that may become partnerships. The centrality of PIs to the research enterprise places them most at risk of foreign interference or influence as well as U.S. government investigation, and their role in risk assessment and management is central.

Oversight of international collaborations is provided by the Office of the Provost, led by the Office of the Associate Provost for International Activities, together with the Office of the Vice President for Research and the Office of the General Counsel, as well as faculty review committees. International gifts are separately reviewed.

All of these units and individuals are involved in the development and implementation of MIT's strategy toward China. In the following sections we describe the current framework of goals, principles, and processes guiding MIT's engagement with China. We also suggest ways in which this framework can be further strengthened. The discussion is organized as follows:

- A. Interests, goals, and values**
- B. Lines we should not cross**
- C. Risk management: MIT's elevated risk review process**
- D. Guidance for MIT PIs**
- E. Other guidance for MIT faculty and staff**

A. Interests, goals, and values

Individual faculty members initiate and lead most of MIT's international activities in research, education, and service. These individuals and their home departments, labs, and centers are supported by MIT's administration which, as well as providing logistical, organizational, and financial assistance, is responsible both for safeguarding faculty members'

freedom to pursue these activities and for pursuing the goals and protecting the interests of the Institute. With respect to China, the most important of these institutional goals are:

- To help MIT remain at the global forefront of research, education, and innovation by continuing to attract the most talented Chinese students and scholars to our campus.
- To ensure that all members of the MIT community, including those of Chinese origin, can thrive and do their best work without fear of external interference, bias, or discrimination.
- To make it possible for our faculty, staff, and students to work with leading Chinese researchers and institutions on problems that are important to both countries and to the world.
- To educate our students about Chinese science, technology, innovation, business, history, culture, politics, and economics.
- To sustain and strengthen networks and lines of communication with MIT's Chinese alumni, including Chinese scientists.

The pursuit of these goals by the faculty and the administration is informed by the values that bind the MIT community together and apply to all its engagements, domestic and international. These include intellectual excellence, openness, encouragement of discovery and creative problem-solving, independence, fairness in the treatment of all individuals and groups, and freedom of expression, communication, and publication.²²

Another important MIT value concerns intellectual risk. A risk-averse approach to the pursuit of new knowledge is incompatible with the kind of institution MIT is and seeks to remain. Undue or excessive caution impedes the development of new ideas. Risks should be minimized, but MIT should neither seek nor expect to eliminate them entirely.

B. Lines we should not cross

Here we propose several principles to guide MIT's engagements with China and to ensure that these activities are consistent with our values. Most of these principles are applicable to other international engagements as well.

- MIT should not engage in collaborative activities that could compromise the integrity or objectivity of our academic work. Examples include pressure on the intellectual independence of the researcher and attempts to restrict the open publication of research results.

²² An MIT committee recently published a statement of values for the MIT community. See <https://web.mit.edu/about/values-statement/>

- MIT should not accommodate attempts by prospective collaborators, sponsors, or donors — whether domestic or international — to exclude certain MIT individuals from participation in the collaboration based on nationality, ethnicity, race, gender, or other personal characteristics; or by applying “loyalty tests;” or by intervening in internal academic affairs in other ways.
- MIT should not engage in research collaborations — whether with public or private partners — that might help the government of China, or other governments, use advanced technologies against the United States.
- MIT should not engage in research collaborations that might contribute to human rights abuses or other actions by the government of China (or other governments) against their own people. This could include working with biometric, genetic, or other datasets whose provenance or potential application is inconsistent with MIT ethical or informed consent standards.
- MIT must comply with all federal and state laws and regulations that pertain to engagements in and with China (and other countries), and should support the efforts of members of the MIT community to be in compliance when they are engaged in work as MIT employees. MIT should also work to ensure that the burden of compliance with government rules and regulations does not fall disproportionately on members of our community who are of Chinese origin (or any other ethnic group or nationality).
- MIT should be cautious about engaging in collaborations in which our engagement might legitimize or indirectly promote actions by the Chinese government (or other governments) that conflict with the core values of the MIT community. The ultimate decision on whether to engage in such collaborations will depend on the balance of that risk and the expected benefits, and should be taken in consultation with the PI.

The last of these demonstrates that situations will arise that do not clearly violate principles but nonetheless require making hard choices. While organizational goals and the values of the community are important to consider in such situations, they may not be sufficient as a guide to action. At MIT, as in other organizations, people prioritize the same goals and values differently, and some internal disagreement is inevitable. That is why it is essential to have well-designed processes that instill confidence that different points of view will be considered carefully in each case.

C. Risk management: The elevated risk review process

In 2019 MIT put in place a new process for proactive reviews of proposed international engagements that might pose elevated risks related to national security, economic security, and civil and human rights. Currently, this **elevated risk review process** considers all proposed engagements involving China, Russia, and Saudi Arabia, as well as certain other projects that may also pose special risks.²³

The elevated risk review process considers U.S. government policy and the national interest, as well as potential impacts on the MIT community, our core values, and our academic mission. These reviews augment the normal work of developing and administering all sponsored activities, which is handled by the Institute's sponsored programs staff.²⁴

Elevated risk reviews involve both faculty and administrative committees, each working with the PI. Inputs to these reviews come from MIT's Washington Office; from country and regional experts at MIT and elsewhere who are consulted for specialist advice; and occasionally from faculty committees that may be convened for advice on difficult issues. While compliance with federal laws and regulations is a necessary condition for proceeding with such engagements, it is frequently an insufficient basis for determining whether or not to proceed. Moreover, decisions on whether to proceed usually must be made on the basis of imperfect or partial information. Projects posing complex trade-offs or raising challenging policy issues are dealt with by the Senior Risk Group, a committee of three senior administrators.²⁵

A key aspect of the elevated-risk process is to raise PI awareness of risks and to work with the PIs to develop information and approaches that may be helpful for risk management. This includes risks to the nation, risks to the Institute, risks to individual researchers, and risks to the larger academic community. One question that is always asked is: "What are the risks of not undertaking this collaboration?"

As a result of this process, some proposed engagements have been rejected, many have been approved, and for others specific conditions have been applied or modifications required.²⁶

23 Informal collaborations between individual MIT researchers and their counterparts in these countries that do not involve formal work and sponsorship agreements are not subject to these reviews.

24 These routine reviews address potential risks to the integrity and objectivity of our academic work; the potential misuse of intellectual property, know-how, and data; the misuse of MIT's name; and the risk of unwanted associations with unethical or illegal behavior by benefactors.

25 For a full description of the elevated risk review process, including the role of the Senior Risk Group, see: <https://globalsupport.mit.edu/planning-agreements/elevated-risk-project-review-process/>

26 A separate committee, the **Gift Advisory Committee**, has been created to ensure careful review of philanthropic gifts to MIT, both domestic and international. For gifts from China, the work of this committee is coordinated with the elevated risk review process.

D. Guidance for Principal Investigators

An effective risk review process is essential to build confidence at MIT, and among our partners, that we are making decisions on rejecting or modifying activities thoughtfully and with adequate information.

It is at least as important to clarify for our research community — and especially for PIs — the range of activities that *can* be undertaken. Faculty who have previously collaborated fruitfully with colleagues in China have told us that they are now holding back from joint work, and in some cases from applying for federal funding — even if the research has little or nothing to do with national security or economic security.²⁷ One faculty member recently observed that “I’ve been a citizen for 20 years, but I’m not going to apply for federal grants. I have to be able to see my parents in China, and I can’t risk being flagged. I am always stopped at the border already.”

As noted previously, PIs are the engines of MIT research and are in many ways most at risk in the current environment. In this section we offer guidance in the following areas to help PIs mitigate concerns and identify productive opportunities for collaboration:

1. Assessing the benefits of a foreign engagement;
2. Disclosures surrounding foreign engagements, including disclosures of conflict of interest, conflict of commitment, and current and pending support;
3. Research group operations, including establishing norms and expectations concerning the sharing of information, and student-initiated collaborations;
4. Compensation for outside professional activities;
5. Participation in talent recruitment programs, including guidelines for writing letters of recommendation;
6. Informal collaborations.

²⁷ Recent surveys indicate that the U.S. government crackdown on suspected Chinese espionage on U.S. university campuses has hindered scientific collaborations with researchers in China, and that scientists of Chinese descent feel more strongly impacted by these government actions. See Nidhi Subbaraman, “Scientists’ fears of racial bias surge amid U.S. crackdown on China ties,” *Nature*, Oct. 29, 2021, <https://doi.org/10.1038/d41586-021-02976-8>. See also the results of a survey conducted by the American Physical Society of its members in September 2021. Among the findings, the U.S. government’s approach to research security is causing significant numbers of researchers to feel unwelcome in the United States. Nearly one in five physicists have withdrawn from opportunities to engage in international collaborations due to research security guidelines. “Research Security Policies & Their Impacts: Key Results of APS Member Survey,” American Physical Society, Oct. 12, 2021, <https://www.aps.org/policy/analysis/securitypolicy.cfm>

1. Assessing the benefits of a foreign engagement

PIs should engage in a structured examination of proposed collaborations by answering a simple set of questions at the outset (see below).

Importantly, PIs should develop *a priori* assessments of the expected benefits of proposed collaborations, including broader benefits to MIT, the research community, and the country, as well as the benefits of specifically collaborating with China. The expectation of unique benefits is not a necessary condition for collaborations to take place, but it is relevant to the overall assessment. PIs have the best understanding of the benefits of the proposed engagement for their own professional progress, for the research community, and for society, as well as the technical capabilities of their proposed partners.

Answering other questions will help to lower the risk of unwanted influence. For example:

- Is the engagement fundamental research — i.e., basic and applied research where the resulting information is ordinarily published and shared broadly within the scientific community? If not, what are the collaborating institution's policies around creating the engagement? For example, do these include attempts to restrict the open publication of research results?
- Are the terms of the engagement made clear in writing? Have all the participants and their affiliations been identified (in general, this will not be possible for students and postdocs as they are usually not added until after the project funding has been finalized)? Are all the senior participants known to the PI?
- Are all the participants' conflicts of interest and commitment documented? Are there any aspects of the engagement that are not to be disclosed to any of the participants? If so, what is the reason?
- Is there any aspect of the engagement that seems unusual, unnecessary, or poorly specified?
- Where do funding and other needed resources come from? Is it clear what each party is providing?
- Are all tangible assets of the engagement, existing or to be generated (e.g., data, metadata, profits, equipment, etc.) known? How will they be shared? Who decides how they are allocated? Who decides on the deciders?

- How does a participant end their engagement?
- Are visits in each direction part of the engagement? Are scholars expected to reside away from their home institutions? If so, how are they chosen for participation in the engagement?
- What are the reporting requirements back to home institutions or organizations?
- Who will control the dissemination of the resulting fundamental research?

PIs may have additional or different questions depending on their field, finances, and other factors, but an early, semi-formal self-examination of the proposed work will highlight most risks. (Additional questions are included in the later section on “Other Collaborations.”)

In addition, MIT administrative staff should help PIs better understand the context in which their collaborators are operating, including the ways different kinds of organizations are connected to, and might have obligations to, the Chinese government or the Chinese Communist Party. Where possible, this information should be made available early in the process of developing new collaborations.

2. Disclosures concerning foreign engagements

The requirements to disclose conflicts of interest, conflicts of commitment, and current and pending support remain confusing to many PIs. Information about federal agency reporting requirements is provided by MIT Research Administration Services.²⁸ The reporting systems at the MIT and federal levels continue to evolve.

Disclosures of conflicts of interest

Managing disclosures of financial conflicts of interest at MIT occurs when proposals are submitted through the **Kuali Coeus** system — a process that has been required for some time and is generally well understood by most PIs.

Disclosures of conflicts of interest also come up in the context of reporting on outside professional activities (OPA). MIT policies governing the annual OPA reporting process are described in MIT *Policies and Procedures*.

²⁸ Research Administration Services, “Federal Disclosure Requirements,” MIT Office of the Vice President for Research, <https://ras.mit.edu/grant-and-contract-administration/international-activities/federal-disclosure-requirements>

Disclosures of conflicts of commitment

For PIs, conflict of commitment has a particular meaning. It occurs when a PI's time, *or the time of a researcher supported by the PI*, becomes committed to two different activities or to the same activity that is funded by two different sources. The examples below serve to illustrate when conflicts of commitment can occur and how to manage them.

EXAMPLE 1

A PI takes summer salary for June and July from their National Science Foundation grant to work on the research proposed in that grant. In the same year, the PI receives salary support in June from an institution in a foreign country to give lectures on their area of research. The conflict of commitment occurs during June, when the PI receives pay for doing two different things simultaneously. The PI has at least three choices: turn down the lecture series, change the scope of the series so that it fits in the one-day-a-week consulting arrangement for faculty, or rearrange their commitments to receive three months of summer support (although this does not mean simply taking three months' summer salary, working and doing the lectures in July, and taking August off.)

EXAMPLE 2

A postdoc working for a PI constructs laboratory equipment from January through June as part of a National Institutes of Health grant. At the same time, an institution collaborating with the PI provides salary support to the PI for the same postdoc constructing the same equipment. The PI uses the support from the foreign institution for other purposes. The conflict occurs because two funding sources pay for the same work. The two institutions may share the laboratory equipment, but sharing does not make up for the conflict. In this case, the PI should support the postdoc with the NIH grant and discuss other uses for the funds with their collaborators, or vice versa.

EXAMPLE 3

A long experiment in a PI's lab requires four months of a graduate student's time, and the outcome will fulfill the research proposed by the PI's Department of Energy grant and research funded by the collaborating lab. The PI pays the grad student for two months from their DOE grant and two months from the funds from a collaborating lab, and no conflict occurs because the student's time has not been double-charged.

The monthly Certification of Effort that PIs fill out monitors and adjudicates conflicts of commitments. PIs should use this tool to prevent conflicts of commitment.

Disclosures of current and pending support

Almost all federal proposals submitted by a PI include disclosures of current and pending support.²⁹ Our guidance here is that current and pending support disclosures should conform to the guidelines and requirements of the government agency sponsoring the award, and that, if in doubt, PIs should include all forms of support explicitly provided to the PI for their research.

All forms of support includes grants and in-kind contributions made by foreign (and domestic) collaborators, foundation support, subcontracts, contracted research, and any other support that encumbers a PI's time or the time of their group members.

In principle, access to a shared shop, graduate or postdoctoral fellowships, discretionary funds, and the like should *not* be covered by the reporting requirement: Shared shop access does not entail a cost to the PI; fellowship support goes to the recipient (and the fellow does not have to work for the PI); and departments, labs, and centers hold discretionary funds, allowing the PI to expend them. However, if in doubt, PIs should work with MIT research administration staff to verify with the sponsoring agency that disclosure is not required.

If federal disclosure rules remain unclear, we suggest that current and pending support disclosures should include *all foreign support over \$5,000*, including receipt of honoraria for a lecture or travel support at the same level.

3. Research group operations

The research group, led by a PI, serves as the fundamental organizational unit of the research enterprise, and the PI has a great deal of autonomy. Research groups are shaped by the PIs and their fields, and their sizes, cultures, and norms vary greatly. Historically, MIT has not tried to establish norms for individual research groups; however, concerns over foreign influence necessitate some general guidance about the operation of these groups.

Establishing norms and expectations

Research groups succeed by shared goals, strong leadership, and an open sharing of ideas. In some fields, research groups have a tradition of sharing work early and broadly, while other fields engaged in competitive research with near-term commercial impact share early work less readily. The PIs have the best sense of how sharing should work for them and their field. Here, we suggest that PIs have a responsibility to ensure that all group members

²⁹ Section 223 of the FY2021 National Defense Authorization Act addresses disclosure of funding sources for applications for federal research and development awards.

See <https://www.aau.edu/key-issues/section-223-fy-2021-national-defense-authorization-act>

understand the norms and expectations of the group. PIs also have the responsibility for adhering to and enforcing norms and expectations, and should reinforce them during group meetings and at other times when the group gathers.

Establishing norms and expectations means that PIs should have a conversation with each group member as they join about sharing information, samples, or equipment outside the group. The conversation should explicitly cover the “what, when, how, who, and why” of sharing information outside the group, with a written document describing MIT’s and the PI’s policies in more detail.

National intelligence laws and PI support

Some countries, including China, have national intelligence laws requiring their citizens to cooperate with their intelligence and security services at any place and any time. The U.S. intelligence community understands these requirements to mean that any citizen of such a country can be turned into an intelligence-collecting agent in a foreign country — for example, if an intelligence agent serving as an instructor were to contact students working at MIT and ask them to obtain information about their research group or about the opinions or behavior of another member of the MIT community and convey it back to the intelligence agents. If the information requested seemed benign, or if the student had a strong loyalty to their home country or had concerns about their family at home, they might be inclined to comply. However, such behavior is unacceptable at MIT and should be subject to disciplinary action. Reporting on the behavior of another member of the MIT community to a foreign intelligence service is a fundamental violation of academic values. Passing on scientific information could lead to significant loss of intellectual property or first publication of a significant result, given the right timing.

While the establishment of norms surrounding the sharing of information could put foreign researchers in conflict with the laws of their home country, not establishing these norms puts the Institute and our PIs at risk. Ultimately, responsibility for creating such situations rests with the foreign government’s laws that compromise its citizens working abroad.

Written policies about norms and expectations between PIs and their research group members are needed, and conversations about them may become awkward at times. *We recommend that MIT develop training or guidance at the school level about the policies and how to have these conversations.*

For these conversations, PIs should also be aware of National Security Decisional Directive 189 (NSDD189) that defines “fundamental research” as work carried out with the intent of publication and dissemination. NSDD189 further specifies that fundamental research

applications may be classified if the application poses a national security threat, while the fundamental research itself remains unclassified. Further government policies discourage the use of an intermediate form of classification referred to as Controlled Unclassified Information (CUI), while other laws and policies — ITAR (International Traffic in Arms Regulations), HIPAA (Health Insurance Portability and Accountability Act), and FERPA (Family Education Rights and Privacy Act) — carry restricted access conditions that PIs whose work lies in these areas will have some familiarity with.

Student-initiated collaborations

When students attend conferences and engage in technical conversations with other members of their community, these conversations may sometimes go beyond sharing current information and turn into new publications and co-authorship. PIs should make clear to the students in their research groups that they should consult with the PI before initiating international collaborations of this type. If students considering such collaborations do not yet have a PI or thesis adviser, they are nonetheless still responsible for seeking guidance, in this case from their academic adviser or department head.

4. Compensation for outside professional activities

The *Rules and Regulations of the Faculty* limit the total number of days that MIT PIs can spend on outside activities, with strict compliance required for reporting on “Outside Activities, Compensated and Non-Compensated.” PIs are required to report on Outside Professional Activities (OPA) annually. The OPA form only asks for information on the time spent and whether the time was compensated, not the level of compensation.³⁰

Using caution when considering high-pay consulting

PIs may receive compensation at any level for their outside work, but they should take into account that high-pay compensation for consulting with foreign entities may be considered by the wider community as endorsement of that entity’s activities well beyond the specific service the PI provides.

Avoiding certain engagements

Faculty engaged in outside professional activities are responsible for complying with government laws and regulations. Even where permitted by law, we recommend against outside engagements with (a) institutions whose activities and/or products and services have been credibly identified as contributing to the suppression of human rights in Xinjiang

³⁰ See “Outside Professional Activities: Frequently Asked Questions (FAQs),” MIT, <https://opa.mit.edu/opahelp/FAQ.html>

or elsewhere in China; (b) Chinese institutions principally involved in defense research or production; and (c) Chinese institutions involved in government intelligence.

Faculty reporting outside professional activities with Chinese entities should be encouraged to review informational resources on potential risks, with the purpose of increasing general literacy about China.

We recommend that faculty exercise extra caution before accepting compensation for outside activities from the Chinese government or from Chinese government-funded programs. Faculty should fully disclose such activities in required disclosures of conflicts of interest and commitment and current and pending support, and they should consult with their department heads in advance of undertaking such activities.

If faculty are considering entering into contractual relationships with Chinese entities as part of their outside work, they are encouraged to seek legal advice from the MIT Office of General Counsel before doing so.

5. Participation in talent recruitment programs

China has developed many state-sponsored overseas talent recruitment programs as part of its efforts to facilitate the transfer of technology and build human capital in science and technology. These programs come in several different forms. Some may support reasonable collaborations among researchers, but those that have attracted the most attention pay foreign or expatriate scientists to conduct research or open labs in China. These are not collaborations, but rather are mechanisms for technology transfer. PIs should not participate in such programs.

Participation in foreign talent recruitment programs could affect the likelihood of being selected to participate in future U.S. government-sponsored research work and is specifically prohibited by certain U.S. government research agencies.

A new law, enacted in August 2022, prohibits federal research grants from going to any individual participating in a “malign foreign talent program.” Within two years, agencies will also require grant applicants to certify that they are not participating in such a program, but existing law already requires such participation to be disclosed to a granting agency.

The White House Office of Science and Technology Policy is to define “malign foreign talent program” by early 2023, but faculty should avoid programs from China that offer payment or in-kind assistance in return for providing information, or that create other conflicts of commitment. The law explicitly says that the prohibition is not intended to outlaw normal scholarly publications or presentations, or writing recommendations for a foreign student enrolled at a U.S. institution at the student’s request, or advising such students.

Guidelines for letters of recommendation and program participation

MIT faculty write letters of recommendation and advise on career options for their students and postdocs as part of their faculty obligations (and without accepting compensation). These are fundamental responsibilities of academic mentorship, and faculty should not hesitate to recommend their students or postdocs or other students they know for positions in China.

Any letter a faculty member writes for anyone should conform to MIT values and contain a truthful and complete accounting of how the faculty member knows the candidate, as well as an assessment of the candidate's abilities. Faculty should not write letters of recommendation for non-MIT students in programs in which they have been paid to teach with a *quid pro quo* that they write such letters.

In addition, faculty should not play an organizational or administrative role in programs that seek to channel graduates into jobs in China, either with or without compensation.

6. Informal collaborations

As part of their normal scholarly activities, MIT PIs engage in many informal collaborations and communications with colleagues around the world, including in countries like China that pose significant security risks to the United States. These include activities such as conversations, sharing of ideas, and sharing of data with researchers from other institutions where there is no written agreement, no required deliverables, and no funds exchanged between the participants to pay costs of the collaboration, and sometimes these activities may result in joint publications between MIT researchers and those of other institutions.

At MIT, as at other universities, the value of academic communication and cooperation with international colleagues is strongly understood. Administrative oversight of these activities would be widely regarded as undesirable and inconsonant with the idea of academic freedom. However, these activities may involve researchers at organizations that are on one or more government watch lists, and even informal collaborations need to follow export control and other laws. Moreover, certain collaborations could expose the investigators to risks that may be better known to specialized administrative staff than they are to the investigators themselves.

Therefore, faculty and staff who engage in these activities with colleagues in China and other countries posing significant security risks are encouraged to consult with **compliance staff** in the MIT research administration.

E. Other guidance for MIT faculty, staff, and administrators

1. Students, researchers, and visitors from China

Faculty and administrators across the Institute's departments, labs, and centers decide which international students, researchers, and visitors are invited to our campus. Admission of undergraduate students is determined by the central admissions office, while graduate student admissions and other invitations are generally handled by individual departments and laboratories. All such decisions are subject to the approval of the federal visa-granting authorities. They, not universities, are ultimately responsible for determining who is allowed to come.

The MIT community seeks to maintain an open campus, consistent with the principles of open science and academic exchange. However, we recommend that MIT not appoint as postdocs or visiting researchers individuals who are known to be members of China's armed forces or otherwise currently employed by Chinese military and security institutions.³¹ We also recommend that MIT not appoint as postdocs or visiting researchers individuals who are currently employed at China's national defense universities.³² The national defense universities are public research universities administered by the State Administration for Science, Technology and Industry for National Defense with the aim of advancing dual-use research for military applications and providing talent to China's state-owned defense sector.

Shorter-term visitors present different and sometimes higher risks to the Institute. They come to MIT under various auspices, including:

- those invited by PIs whom they may know personally or have been recommended by a colleague;
- those seeking invitations from members of the MIT administration;
- those sent from industrial affiliates.

Unlike students, faculty, and staff who join the MIT community, short-term international visitors coming to MIT for meetings or to observe do not pass through a formal admissions or appointment process, although of course they are subject to screening by U.S. visa authorities.³³ In general, PIs are free to invite their professional colleagues to visit the MIT campus and it is important to preserve this principle. However, we advise PIs and others at MIT not to issue invitations to visitors who are currently employed by Chinese military and security insti-

³¹ This includes PLA-administered military academies and research institutes.

³² China's national defense universities are also known as the "**Seven Sons of National Defense**." The recommendation in this paragraph concerning individuals at the 'Seven Sons' does not apply to current graduate students of these universities. The close relations between the Seven Sons of National Defense and China's defense state-owned enterprises are described in Ryan Fedasiuk and Emily Weinstein, "Universities and the Chinese Defense Technology Workforce," CSET Issue Brief, Center for Security and Emerging Technology, December 2020.

³³ Visitors coming to MIT to teach or conduct research do pass through a formal appointment process.

tutions, or who are employees of China's national defense universities, or who are working at national defense science and technology key laboratories at other civilian universities, unless they can clearly identify benefits that would warrant doing so.³⁴

It goes without saying that all applicants for positions at MIT have an obligation to disclose all their affiliations, either on their CVs or in other application materials.

2. Sponsored research collaborations and other sponsored activities

Collaborations to avoid

Certain circumstances should disqualify a company from having a relationship with MIT, including:

- Direct involvement in government intelligence activities or a direct relationship with the Chinese armed forces as a provider of systems, products, or services with military applications;
- Credible evidence that the activities, products, or services of a company are contributing to the suppression of human rights in Xinjiang or elsewhere in China.

In addition, MIT should not engage in research collaborations with China's national defense universities, or with national defense science and technology key laboratories at other civilian universities.³⁵

Other collaborations

For potential research collaborations with Chinese government agencies, companies, and universities other than those listed above, the following questions should be considered (these are in addition to the questions in the previous section on guidance for PIs):

- Is it a true collaboration? Is there relevant expertise on both sides? Are both sides contributing meaningfully to the research? Will both sides benefit intellectually?

³⁴ The [Australian Strategic Policy](#) Institute has published a list of 165 laboratories in civilian universities that were reportedly primarily established to work on defense science and technology. A more recent [report](#) published by a U.S. Department of Defense think tank discusses the different categories of defense-related research laboratories in China's laboratory system, including the Defense Science and Technology Key Laboratories at civilian universities. This latter report notes that China's civil-military fusion strategy, as well as the lack of rigor with which Chinese government research laboratories are labeled in public sources, has led to confusion over which labs should be included in which lists. A valuable survey of China's state key laboratories, a parallel system to the defense key laboratories, has been published by the [Center for Security and Emerging Technology](#). Questions about China's defense key laboratories should be directed to the [research compliance staff](#) in the Office of the Vice President for Research.

³⁵ See footnote 32.

- Will the results be publishable? What are the plans for publication?
- Are there proprietary restrictions on publishing (e.g., corporate designs)?
- Does the collaboration involve specific sponsors, research topics, or types of interaction that should be ruled out *a priori* (see the principles of engagement in Section III.B above)? For example, are there potential military applications, or applications with adverse human rights consequences?
- What are the collaborator’s sources of funding, both for the proposed research and for other research in related areas? (These should be transparent and public on both sides.)

Proposed collaborations with state-owned enterprises should be subject to a higher level of review, but should not be ruled out *ex ante*. There are also extensive connections between many private companies and the Chinese Communist Party (party branches are the norm within mid- and large-sized private companies).

Additional scrutiny is needed for sponsored activities other than research collaborations, in which both sides contribute expertise. These situations are especially likely to arise when a Chinese company is paying membership fees to an MIT unit such as the Industrial Liaison

Program, an arrangement which may provide the company with access to information or to MIT faculty researchers without a requirement to offer much in return. Membership of laboratory research consortia may raise similar issues, but can provide clearer opportunities for faculty to gain valuable insight into the technical practices, capabilities, and plans of consortium members.

3. Gifts from Chinese donors

All gifts from Chinese donors should comply with MIT’s general policies, principles, and processes for soliciting and accepting gifts, which have recently been reviewed by two *ad hoc* committees.³⁶

A Gift Advisory Committee (GAC) has been formed to consider gifts above a certain threshold. The GAC works with the Senior Risk Group when the gifts involve China (as well as other elevated-risk countries).

The same guidelines concerning research sponsors from China described in Section III.E.2 above (“Sponsored research collaborations and other sponsored activities”) should apply to potential Chinese donors as well.

³⁶ The [Ad Hoc Committee to Review MIT Gift Processes](#) and the [Ad Hoc Faculty Committee on Guidelines for Outside Engagements](#).

In addition, gifts from individuals from or in China will require review to determine whether they are intended to advance or legitimize government or CCP goals. Individuals may have close ties to the state, either as a member of the CCP or through their participation in United Front organizations and quasi-governmental organizations. However, membership in the CCP should not be a disqualifying factor in and of itself, as this does not necessarily signify support of the regime and its military.

Members of the MIT community, as well as potential donors, should be reminded that gifts cannot result in implicit and/or unwritten expectations or obligations. Gift agreements have no strings attached, and it is important to reiterate this principle as gift relationships and expectations vary across cultures and societies.

4. Technology licensing

The licensing of MIT-developed intellectual property to non-MIT entities must be fully compliant with applicable federal laws and regulations. These requirements are currently under active review by Congress and the executive branch. Our committee did not analyze these developments, but beyond the need for federal regulatory compliance we recommend that MIT licensing policies be reviewed for consistency with the principles discussed elsewhere in this report, especially those affecting particular types of technologies and collaborations.

5. Data protection

As always when working with foreign partners and data collected in other countries, MIT community members working with Chinese partners and/or utilizing data collected in China should observe the laws and regulations of China. Our committee did not undertake a review of laws and regulations that pertain to foreign scientific research and the collection of personal information outside of the United States, but we recommend that MIT conduct such a review and develop resources and guidelines to support the work of MIT community members. These include China's Personal Information Protection Law (PIPL), which mirrors Europe's General Data Protection Regulation (GDPR) in some aspects.

The PIPL governs the collection, use, and sharing of personal information of residents of China and is extraterritorial in scope, meaning it applies to organizations and persons outside China's borders. Like the GDPR, the PIPL applies only to "personally identifiable information," but its definition is broader and includes new categories of personal information, including financial information. Understanding the impact of PIPL on MIT operations will be essential, especially with respect to online courses or programs to individuals in China, human subjects research using data collected from Chinese residents (that is not completely anonymized), and collaborations with Chinese academic institutions or organizations.

6. Travel to China

All MIT norms and policies apply to work that MIT people do and actions that they take when traveling in China.³⁷ All MIT faculty, students, and employees traveling to China should be required to take a training video or otherwise review instructional materials on protection of electronic devices. MIT PIs should not take their primary computers and cellphones to China whether there on business or on personal travel, and they are advised not to take their personal phones or laptops, either. MIT should provide PIs with computers and cellphones for temporary use in China. Individuals who take electronic devices to China should assume they will be compromised.

Faculty, staff, and students traveling to China (and other countries) should also be **briefed** on the policies and practices of the U.S. Customs and Border Protection authorities and the travelers' rights during these interactions, as well as practical steps to reduce the likelihood of prolonged stoppages at the border.

7. Institution-building and capacity-building in China

MIT has historically played important roles in institution-building in developing countries that have little experience in building excellent research universities of their own. China now has excellent research universities, so there is no need for MIT to engage in such activities there.

MIT has also worked with existing research universities around the world on the joint development of new educational approaches and research capabilities. As long as these are genuine collaborations, with relevant expertise being contributed on both sides, MIT should be open to such institutional relationships in other countries, including China. All such relationships with Chinese research universities must be consistent with the principles of engagement described in Section III.B above.

8. Executive and professional education

In contrast to general undergraduate and graduate education programs, executive and professional education programs, especially when customized for particular organizations, have a direct impact on the capabilities and performance of those organizations. Giving lectures in such programs is considered a “service” to the hosting organization and the persons attending, and it is necessary to determine whether the organization or (if the lecture is not open to the public) the participating individuals are on any of the U.S. government’s prohibited lists.

³⁷ General information for members of the MIT community on travel and safety abroad is available at <https://globalsupport.mit.edu/>.

Executive and professional education programs are not designed to enhance research capabilities, so offerings to Chinese organizations generally do not raise the kind of concerns about problematic application of new technologies that might arise in research engagements. Knowledge and information provided in an educational setting, including classes and lectures that are open to a general audience, are not subject to U.S. export control restrictions.³⁸ Nevertheless, MIT faculty instructors in these programs who are working in potentially sensitive research areas should be careful to ensure that they only present information that is already in the public domain.

More generally, MIT executive and professional education programs should not enable or empower organizations with problematic conduct or with direct connections to Chinese military or intelligence activities. Closed or customized programs should not be offered to entities and organizations meeting the criteria described in Section III.E.2 (“Sponsored research collaborations and other sponsored activities”) above.³⁹

³⁸ The export control requirements for online education offerings differ from those delivered in person.

³⁹ A review process for international collaborations has been recently introduced by the MIT Sloan School of Management. There is overlap in the review criteria relative to those discussed in this document, and the process is presumably intended to apply to executive education programs as well as other activities. The Sloan process does not single out China or any other country for special review.

IV CONCLUSION

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Our purpose in this report has been to chart a path toward academic exchange and collaboration with other countries, including China, with the goals of advancing knowledge and the needs of our nation and the world without endangering U.S. interests in security, the economy, and human rights. Our hope is that by implementing effective internal policies and controls, MIT and other universities will also help avoid the imposition of federal restrictions that would be damaging to U.S. research and innovation.

The geopolitical relationship between the United States and China is becoming more strained and seems likely to deteriorate further. Although this inevitably means a narrowing of the possibilities for such activities, in most scenarios the space for productive collaboration and exchange will not close completely.

We believe that MIT has an important institutional responsibility to help preserve this space by protecting the freedom of individual MIT scholars to pursue opportunities and by helping to identify and support these opportunities where appropriate.

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Another important institutional responsibility is to work with researchers and educators to identify activities that pose unmanageable risks to individual members of our community, to the Institute, and to the nation. This report has outlined a set of recommendations that are intended to help discharge these responsibilities.

We conclude by emphasizing the importance of establishing a comprehensive and continuing dialogue between MIT and other U.S. universities and the federal government on this important subject, especially since new problems and new challenges will inevitably arise in this complicated and evolving environment.

