THE SELECT COMMITTEE ON THE CCP

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COMMITTEE ON EDUCATION AND THE WORKFORCE
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CCP ON THE QUAD:

How American Taxpayers and Universities Fund the CCP's Advanced Military and Technological Research

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EXECUTIVE SUMMARY

The Chinese Communist Party (CCP) exploits federally funded research and partnerships between U.S. universities and People's Republic of China (PRC) defense-linked universities to achieve technological breakthroughs, both in technologies with military applications and in critical and emerging technologies where the PRC lags behind the U.S. and its allies.

Our investigation found that due to a lack of legal guardrails around federally funded research, hundreds of millions of dollars in U.S. federal research funding over the last decade have contributed to the PRC's strategic goals by helping the PRC achieve advancements in dual use, critical, and emerging technologies like hypersonic weapons, artificial intelligence, fourth generation nuclear weapons technology, and semiconductor technology.

Specifically, we examined research publications that disclose funding from the Department of Defense (DOD) or the U.S. intelligence community (IC) and include a collaboration between a federally funded researcher(s) and a researcher(s) affiliated with PRC institutions, most frequently PRC universities. We focused on DOD- and IC-funded research because the purpose of that research funding is to generate advancements that will eventually become applied warfighting and intelligence capabilities to protect America against adversarial nations. **Yet the research funded by the DOD and the IC is providing back-door access to the very foreign adversary nation whose aggression these capabilities are necessary to protect against**. In short:

- We identified 8,800+ publications supported by DOD funding[a] published with coauthors affiliated with PRC institutions, and an additional 185 such publications supported by IC funding.
- The vast majority of these DOD-funded publications constitute advanced research related to dual-use, critical, and emerging technologies.
- These papers covered topics including hypersonics, directed energy, nuclear and high energy physics, and artificial intelligence and autonomy.
- More than 2,000 papers DOD-funded papers included PRC coauthors who were **directly affiliated with the PRC's defense research and industrial base**.

[a] We identified these publications by examining the sources of funding provided by the publications themselves. DOD funding is typically provided to researchers for specific research topics, then those DOD-funded researchers collaborate with others on aspects of that research project or on specific publications, as here. We call these "DOD-funded" throughout the paper.

- Some topics have **direct military applications** – such as high-performance explosives, tracking of targets, and drone operation networks – that the PLA would use against the U.S. military in the event of a conflict.

Additionally, in **six case studies**, we illustrate how the PRC's defense and security establishment benefits from technological advances developed by federally funded researchers. Those six researchers leveraged expertise, applied knowledge, and practical capabilities developed through and during years of receiving federal funding to the PRC's advantage, **helping the PRC achieve advancements in fourth generation nuclear weapons technology, artificial intelligence, advanced lasers, graphene semiconductors, and robotics**. In each case study, the advancement was made in conjunction or shared with entities that are deeply intertwined with the PRC's defense and security establishment.

We also illustrate the PRC's strategy to acquire U.S. technology and expertise through joint institutes between U.S. research universities and universities and other entities in the PRC. These institutes pair prestigious U.S. universities with PRC counterparts under the guise of academic cooperation, but in practice, they **conceal a sophisticated system for transferring critical U.S. technologies and expertise to the PRC, including to blacklisted entities linked to China's defense and security apparatus**. We illustrate this issue by examining three joint U.S.-PRC research institutes—Tsinghua-Berkeley Shenzhen Institute (TBSI), Georgia Tech Shenzhen Institute (GTSI), and Sichuan University-Pittsburgh Institute (SCUPI). These joint institutes facilitate the transfer of expertise, applied research, and technologies related to dual-use, critical, and emerging technologies to the PRC. Through these institutes, participating American academics, many of whom conduct U.S. federally funded research, travel to the PRC to collaborate on research, advise PRC scholars, teach and train PRC graduate students, and collaborate with PRC companies on their areas of expertise—frequently, critical and emerging technologies with national security implications. While doing so, academics typically maintain affiliations with their U.S. institutions, and many continue to lead U.S. federally funded R&D projects. This creates a direct pipeline for the transfer of the benefit of their research expertise to the PRC.

After months of productive engagement with the Committees in this investigation, Georgia Tech decided to terminate GTSI and curtail its partnership with Tianjin University. This is an important step for national security, and we encourage other universities to follow suit. In addition, shortly before the publication of this report, UC Berkeley informed the Committees that it "has started the process of relinquishing all ownership" in TBSI and is "in the early stages of unwinding the joint legal entity." This also represents a step in the right direction, and the Committees look forward to

continuing to engage with Berkeley regarding the unwinding of the joint institute and the national security risks identified below.

We uncovered significant failures in the reporting of foreign funding by UC Berkeley and Georgia Tech under section 117 of the Higher Education Act (HEA), despite section 117 being law for over 30 years. Enforcement of foreign gift and contract reporting requirements by the Biden-Harris Department of Education has been an abject failure. And the Biden-Harris Department of Education has failed to open a single enforcement action under Section 117 of the Higher Education Act in the last four years, despite widespread evidence of lack of reporting. These undisclosed foreign gifts—likely hundreds of millions, if not billions in total—give PRC entities troubling influence without transparency and contribute to building the research relationships that pose risks to U.S. national security.

American taxpayer-funded researchers are collaborating with PRC research and academic institutions involved in military and defense research and development on critical and emerging technologies. The case studies in this report illustrate this troubling pattern, facilitated by lack of guardrails and enforcement of existing law. Joint institutes facilitate expertise transfer and foster connections with blacklisted and other defense-tied institutions, to the PRC's strategic benefit. Universities underreport—and the government has failed to enforce reporting mandates on—foreign funding from the PRC. Stronger safeguards and more robust enforcement are urgently required.

The Committees therefore recommend:

- **Strengthening the guardrails** around research collaboration on dual-use, critical, and emerging technologies with foreign entities of concern.
- **Implementing post-award restrictions** on collaborations with blacklisted entities from a foreign country of concern.
- **Adopting the DETERRENT Act** to require enhanced transparency from universities and researchers of foreign gifts and contracts.
- **Strengthening oversight and enforcement** of postsecondary institutions' failure to disclose foreign gifts and contracts.

I. BACKGROUND

A. Investigation Scope and Method

The House Select Committee on the Strategic Competition between the United States and the Chinese Communist Party (Select Committee) was established at the outset of the 118th Congress to investigate and submit policy recommendations on the status of the Chinese Communist Party's economic, technological, and security progress and its competition with the United States. The Select Committee has scrutinized the multifaceted threats posed by the Chinese Communist Party (CCP) to America's national security and economic interests. This report addresses a critical aspect of this competition: the security and integrity of America's research enterprise in the face of systematic challenges from the People's Republic of China (PRC).

The House Committee on Education and the Workforce is authorized under Rule X of the Rules of the House of Representatives to conduct oversight of all matters involving "education… generally" to inform potential legislation.[1] The Education and the Workforce Committee oversight efforts below are relevant to its existing efforts in support of H.R. 5933 the Defending Education Transparency and Ending Rogue Regimes Engaging in Nefarious Transactions Act (DETERRENT) Act to protect national security and research through increasing transparency and accountability on foreign gift reporting.

Over the past year and a half, the Committees have investigated the links between U.S. universities, federally funded U.S. researchers, and entities in the PRC. During that investigation, the Committees have conducted open-source research, received expert briefings, and requested and obtained documents and information from the University of California – Berkeley (Berkeley) and Georgia Institute of Technology (Georgia Tech) regarding the links and collaborations between those two universities and universities and other entities in the PRC.

B. PRC Strategy to Exploit U.S. Academic Research to Achieve Technological Supremacy and Military Advancements

For decades, the United States has been the global leader in scientific research, fostering an environment of open collaboration that has driven groundbreaking discoveries. But this open system is under threat. The PRC, under the direction of the CCP, is aggressively seeking to use both lawful and unlawful means to surpass U.S. scientific and technological leadership in pursuit of becoming a "sci-tech superpower"[2] and to use its technological strength to achieve military dominance. This long-standing effort, which was formally elevated to a comprehensive national strategy under CCP Chairman Xi Jinping in 2012, involves the systematic exploitation of foreign technology through licit, illicit, and ambiguous means,

often leveraging the PRC's defense research and industrial base[b] to achieve these goals.[3]

The CCP has a sophisticated, evolving strategy to obtain advanced U.S. technology and knowledge by exploiting the open U.S. research ecosystem.[4] Since the 1980s, the PRC has encouraged Chinese scholars to study abroad and return with their acquired expertise to "serve the motherland" by advancing national defense-related technologies.[5] Xi prioritized this approach in 2013,[6] and by 2018, the CCP had established and implemented a wide-ranging strategy for "flexible talent recruitment"[7] to harness both domestic and international talent and innovation resources to build a "national innovation system."[c,8] This strategy is a core component of Beijing's efforts to cultivate a "deep pattern of military-civil fusion and create an integrated national strategic system and capabilities,"[d] mobilizing all available state and societal resources to enhance the PRC's national power, military capabilities, and strategic competitiveness.[9]

The CCP uses a wide range of tactics to acquire foreign expertise, which Xi has personally championed as essential for the PRC's technological and military dominance.[10] The PRC's "national technology transfer system" leverages student exchanges and academic partnerships.[11] It also uses hundreds of state-sponsored talent programs—CCP initiatives that leverage incentives and organized recruitment activity—to recruit international scientists, engineers, and entrepreneurs.[12] These initiatives are further supported by PRC-run start-up contests, state-backed venture capital, and strategic acquisitions in major U.S. tech hubs.

PRC Talent Programs

China's Thousand Talents Plan is well known, but it is just one of hundreds of talent programs developed by the PRC to acquire cutting-edge technology and knowledge from abroad. These state-driven initiatives span multiple administrative levels, often requiring participants to share sensitive research and lead Chinese R&D projects while maintaining their foreign positions. This system frequently results in intellectual property theft and grant fraud, bolstering the PRC's technological and military capabilities at the expense of other nations' innovation leadership and security interests.

Beijing sponsors promising PRC STEM students at non-PRC universities,[e] expecting their return to the PRC to fill critical knowledge gaps.[13] Through talent program, the PRC also targets U.S. academics,

[b] The PRC's defense industrial base includes the organs of the People's Liberation Army, State-Owned Enterprise defense/weapons conglomerates (and their subsidiaries), the Seven Sons of National Defense, the Seven Sons of Ordnance (Arms) Industry, national defense labs (key labs, MOE labs, S&T labs, disciplines), the State Administration for Science and Technology for National defense co-administered schools, and the public security apparatus (including the MPS and blacklisted companies like Huawei and Hikvision).

[c] 国家创新体系

[d] 一体化的国家战略体系和能力

[e] The CCP targets U.S. universities more aggressively, at least in part due to their technological and research strength.

requiring them to bring Chinese students into certain research environments. The PRC claims to have recruited over 60,000 overseas experts between 2008 to 2016, including scientists, entrepreneurs, and other professionals from various nationalities.[f,14]

Talent recruitment is also a critical ingredient of the CCP's Military-Civil Fusion strategy—a plan to redirect ostensibly civilian research into military applications. Military-Civil Fusion is a foundational component of Xi's ongoing effort to transform the People's Liberation Army (PLA) into a "world class military" by 2049.[15] It includes a strategy to aggressively acquire intellectual property, leverage research in cutting edge technology from private industry, and

Tiers of PRC Defense-Linked Universities

The CCP's Military-Civil Fusion strategy aims to integrate civilian and military sectors across various domains, including higher education. Although the PRC state could require all of the PRC 3,000 higher education institutions to participate in Military-Civil Fusion,[1] some universities are more deeply integrated with military and defense activities than others. The categories below aim to illustrate the spectrum of military involvement in China's university system.

Category 1: Military Universities: Institutions directly subordinate to the Central Military Commission, such as the Academy of Military Science, Air Force Command College and the National University of Defense Technology. These universities are fully integrated into the military structure.

Category 2: Seven Sons of National Defense: Leading universities with deep roots in military and defense industry, subordinate to the Ministry of Industry and Information Technology (MIIT). MIIT drives the Party's Military-Civil Fusion strategy and the integration of civilian industries and cutting-edge technologies into the PRC's military and security ecosystems.

These universities are "defense science, technology and industry work units" and play a crucial role in defense research and development. As many as half of the PhD graduates from the Seven Sons go on to work in the PRC's defense sector, and they spend about half of their research budgets on projects with clear military applications.[2]

Category 3: SASTIND Co-Supervised Universities: These universities are co-supervised by the State Administration for Science, Technology and Industry for National Defense (SASTIND), an arm of the Chinese government whose stated purposes include "strengthen[ing] military forces with additional personnel and more advanced equipment" and which seeks to leverage these universities for defense purposes. This category includes about 60 top national universities like Tsinghua and Peking University, as well as some provincial institutions.

Category 4: Universities with Defense Characteristics: Civilian universities with significant defense-related features such as defense laboratories, designated defense research areas, or security credentials for classified projects. Over 150 universities have received security credentials, indicating widespread involvement in defense-related work.

[f] This figure likely understates the total, as it may not account for participants in entrepreneurial contests or recruits from the proliferating subnational and local talent programs, particularly after 2016.

[1] *China has over 47 mln higher-education students in 2023*, XINHUA (Mar. 1, 2024), http://en.moe.gov.cn/news/media_highlights/202403/t20240304_1118146.html.
[2] RYAN FEDASIUK & EMILY WEINSTEIN, UNIVERSITIES AND THE CHINESE DEFENSE TECHNOLOGY WORKFORCE, (2020), https://cset.georgetown.edu/wp-content/uploads/CSET-Universities-and-the-Chinese-Defense-Technology-Workforce.pdf; Alex Joske, The China Defence Universities Tracker, AUSTL. STRATEGIC POL'Y INST. (Nov. 25, 2019), https://www.aspi.org.au/report/china-defence-universities-tracker.
[3] ALEX JOSKE, THE CHINA DEFENSE UNIVERSITIES TRACKER, AUST. STRATEGIC POL'Y INST. 9 (2019), https://s3-ap-southeast-2.amazonaws.com/ad-aspi/2019-11/The%20China%20Defence%20Universities%20Tracker.pdf.

systematically reorganize the PRC science and technology enterprise to advance military and other national strategic objectives.[16]

The Military-Civil Fusion strategy applies to every PRC institution with a research and development function. However, the degree of military engagement varies significantly (see "Tiers of PRC Defense-Linked Universities" box), with universities that are directly subordinate to the Central Military Commission forming the first tier of the PRC's academic defense research base. In a second tier are the "Seven Sons of National Defense," defense universities deeply intertwined with the defense industry and subordinate to the entity that oversees the PRC's defense industry.[17] Third and fourth tier universities are also routinely leveraged by the PRC state for defense research purposes.

The PRC also exploits America's cutting-edge research ecosystem by fostering collaborations between PRC universities and American research institutions to acquire dual-use, critical, and emerging technologies. Chinese officials have openly acknowledged that such partnerships give the PRC access to a "treasure trove of technological talent" ripe for its taking.[18]

China also uses a range of illegal and illicit tactics—such as cyberespionage and coerced technology transfer—to acquire U.S. technology and know-how. Recent cases illustrate the threat: U.S. authorities arrested a California resident for stealing proprietary missile detection technology,[19] charged a former Apple employee with taking autonomous vehicle secrets to a Chinese competitor,[20] and caught agents illegally exporting aerospace components.[21]

However, China's most insidious tactic may be its exploitation of legal academic collaborations. These partnerships, while ostensibly legitimate, often serve as Trojan horses for technology transfer. As the FBI warns, China's talent programs "incentivize [their] members to steal foreign technologies needed to advance China's national, military, and economic goals."[22]

Taken together, these efforts fuel China's development at the expense of U.S. technological leadership while reducing China's research costs and shielding the CCP from the openness that democracies rely on for innovation. The CCP presents these engagements as "mutually beneficial" and "win-win," but, in reality, China wins twice—both by gaining technology and using its own closed system to strictly control outflows of information. This imbalance stems from fundamental differences in our systems: while the U.S. fosters an open, collaborative research environment, China maintains strict control over information flow and access.

"The CCP presents these engagements as 'mutually beneficial' and 'win-win,' but, in reality, China wins twice—both by gaining technology and using its own closed system to strictly control outflows of information."

For example, PRC visiting scholars and students in the U.S. enjoy virtually unrestricted access to academic resources, libraries, and the open internet. In contrast, American researchers in China face significant barriers, including limited archive access, visa restrictions, government interference, and online censorship. A recent survey of over 500 foreign scholars in China found that 26 percent were denied access to archives, while nearly one in ten were subjected to questioning by PRC authorities.[23]

The failure of the U.S. policy of engagement with the PRC since the 1970s has become increasingly apparent. Rather than encouraging liberalization, this approach has bolstered the PRC's economic prowess, technological capabilities, and geopolitical ambitions, often at the expense of U.S. national and economic security. It is time to reevaluate and strengthen the safeguards placed around sensitive, federally funded research and certain forms of academic collaboration in critical and emerging technologies to better protect against the malign efforts of the Chinese Communist Party.

C. Reevaluating National Security Risks in Fundamental Research Collaborations

As laid out in detail in Section V below, the U.S. has traditionally placed few—if any—limitations on research collaborations provided that those collaborations are not classified and constitute "fundamental research"—research designed to produce results that will be published in an academic journal or similar widely-available publication. The theory is that if the results will be made public, the U.S. should not restrict the underlying research. Indeed, existing policy under National Security Decision Directive 189 provides that that U.S. will not restrict sharing or collaboration in fundamental research except in circumstances involving classified information.[24] For most research areas, this policy is appropriate and serves to advance general scientific and technological knowledge, which ultimately serves America's interests.

However, for dual-use, critical, and emerging technologies, the issue is not so simple. Even if the results of the fundamental research may eventually be published, the research process produces extensive applied knowledge and technological expertise that is not captured by resulting publications yet is enormously valuable. Indeed, this kind of practical know-how is frequently the basis for technological breakthroughs and other applications of the research to real-world problems. As illustrated by the case studies below, those technological breakthroughs and the application of the research findings can have significant implications for national security.

In addition, the U.S. places guardrails around the transfer of sensitive technologies using a variety of policies, including export controls. Export controls prohibit the transfer of certain technologies to foreign individuals and entities without a license, as well as creating special prohibitions on the transfer of technology to blacklisted entities identified by the Commerce Department. However, while it is illegal to transfer certain technologies to blacklisted entities, universities and research institutions are permitted to collaborate with those same entities to develop even more advanced technologies *using U.S. taxpayer dollars*, as laid out in Figure 1.

The Entity List's Restrictions vs. Dual-Use Fundamental Research

The Commerce Department uses the Entity List to restrict designated persons (including companies and research institutions) that raise national security concerns from accessing certain sensitive goods, services, and technologies without a license. Tianjin University is one such blacklisted institution. But U.S. researchers are still able to work with blacklisted PRC universities like Tianjin U., as well as designated entities like the NSCC, through an exception for fundamental research.

When U.S. researchers collaborate with designated PRC institutions on dual-use research, they undermine the intended effect of the Commerce Department's designation. U.S. academics who work with blacklisted PRC universities are not only legitimizing the blacklisted institution—they are helping that institution develop the sensitive technologies that the U.S. is trying to prevent China from obtaining.

Thus, when the U.S. government funds fundamental research in technologies that may impact U.S. national or economic security, it is investing in the creation of that applied knowledge and technological expertise by the researchers it is funding—not merely the published research results. Protecting that investment from being hijacked by the PRC for its own military or strategic purposes is critical to ensuring that the resulting breakthroughs provide the broad benefits that the research funding was intended to achieve and to protecting American national and economic security.

II. FEDERALLY FUNDED RESEARCHERS HELP CHINA ACQUIRE DUAL-USE, CRITICAL, AND EMERGING TECHNOLOGIES

Below, we illustrate how the PRC exploits federal research funding to acquire dual-use, critical, and emerging technologies.

A. PRC Benefits from DOD and Intelligence Community-Funded Research in Dual-Use, Critical, and Emerging Technologies

Over the last decade, there is extensive, troubling evidence that the PRC has been exploiting U.S. funded defense and intelligence research in dual-use, critical, and emerging technologies for its own benefit. Using open-source information, we identified 8,829 publications supported by DOD funding that were coauthored by individuals working for PRC entities,[g] and an additional 185 publications with the PRC supported by the IC. Thousands of these collaborations involved PRC authors affiliated with the PRC defense research and industrial base.

Each such collaboration is deeply troubling because the purpose of defense funded research is to build the technological capabilities that will ensure that the U.S. military remains the world's strongest and best-equipped fighting force. DOD funding is not just to advance scientific research—it also specifically aims to fund research that will eventually become applied warfighting capabilities and may become part of controlled, classified, or special access programs. As the Office of Naval Research explains, its mission in funding scientific research is to "maintain[] the future naval power, and preserv[e] national security," by "discovering, developing, and delivering new technology and capability" for the Navy and the Marines.[25]

"[DOD] specifically aims to fund research that will eventually become applied warfighting capabilities, and may become controlled, classified, or special access program technologies to enhance DOD's warfighting capabilities."

Likewise, IC research funding is designed to enhance current and future intelligence capabilities against America's adversaries, including the Chinese Communist Party. Yet the research that the DOD and the IC are funding is providing back-door access to the very foreign adversary nation whose aggression these capabilities are necessary to protect against.

We analyzed a small sample of the thousands of DOD-funded publications with PRC coauthors and identified numerous papers containing research with direct military applications that could be fueling the advancement of the PLA. The papers covered topics such as:

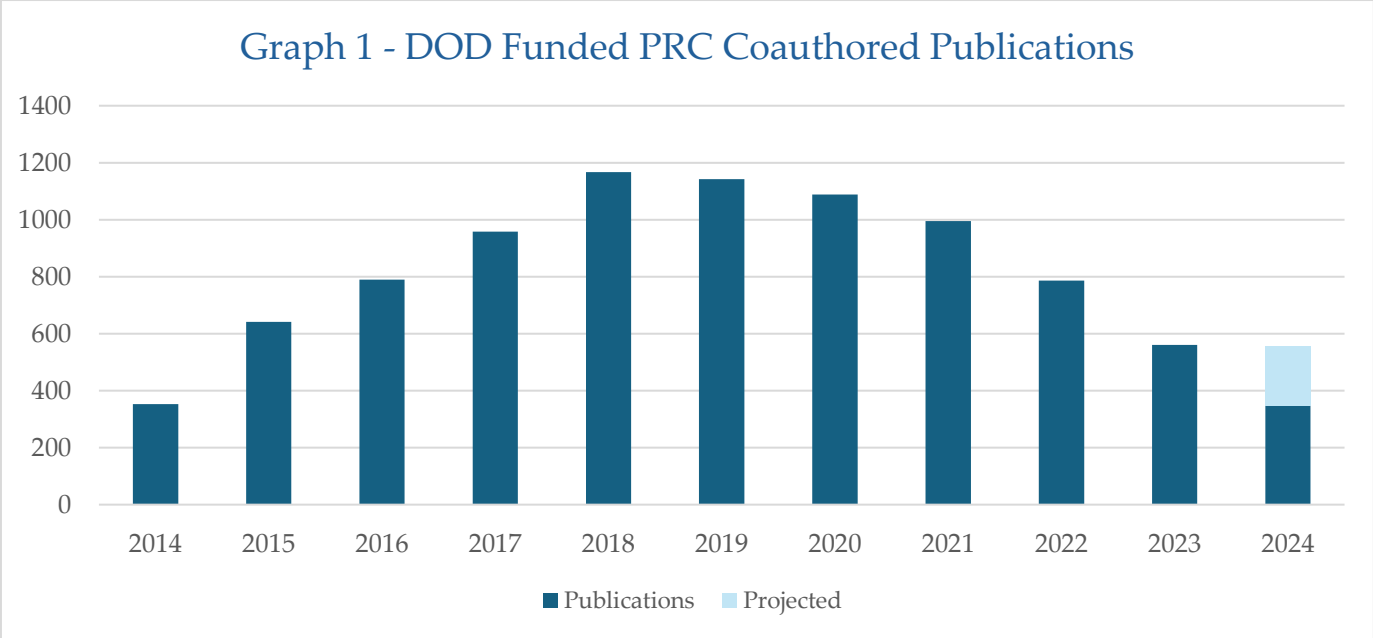
- **High-performance explosives and rocket fuels**[26]

[g] Typically, individuals at PRC universities, but some individuals were affiliated with PRC companies or other institutions.

- **Tracking of underwater targets**[27]
- **High-speed radar target detection**[28]
- **Network for coordinated drone operations**[29]

These are not innocuous technologies with civilian-only applications. Rather, they are cutting edge technologies, militarily useful in the western Pacific, that the PLA can and will use against U.S. servicemembers in the event of a conflict. The troubling conclusion then is that DOD funded research—intended to allow the U.S. military to maintain a technological edge over its adversaries—has likely been used to enable and strengthen the PLA.

Although the number of publications crediting DOD and IC funding has fallen from its peak in 2018, the numbers remain troublingly high, with more than 500 such publications expected this year based on current trends. These figures also only capture a fraction of the broader problem, as other U.S. government agencies—notably the National Science Foundation (NSF) and the Department of Energy—regularly invested in research to advance dual-use, critical, and emerging technologies as well. A similar search of NSF-funded, PRC coauthored publications turned up more than 30,000 papers over the same ten-year period.[30] In total, the U.S. government appears to have provided funding that contributed to more than 70,000 such publications in the same time frame.[31]

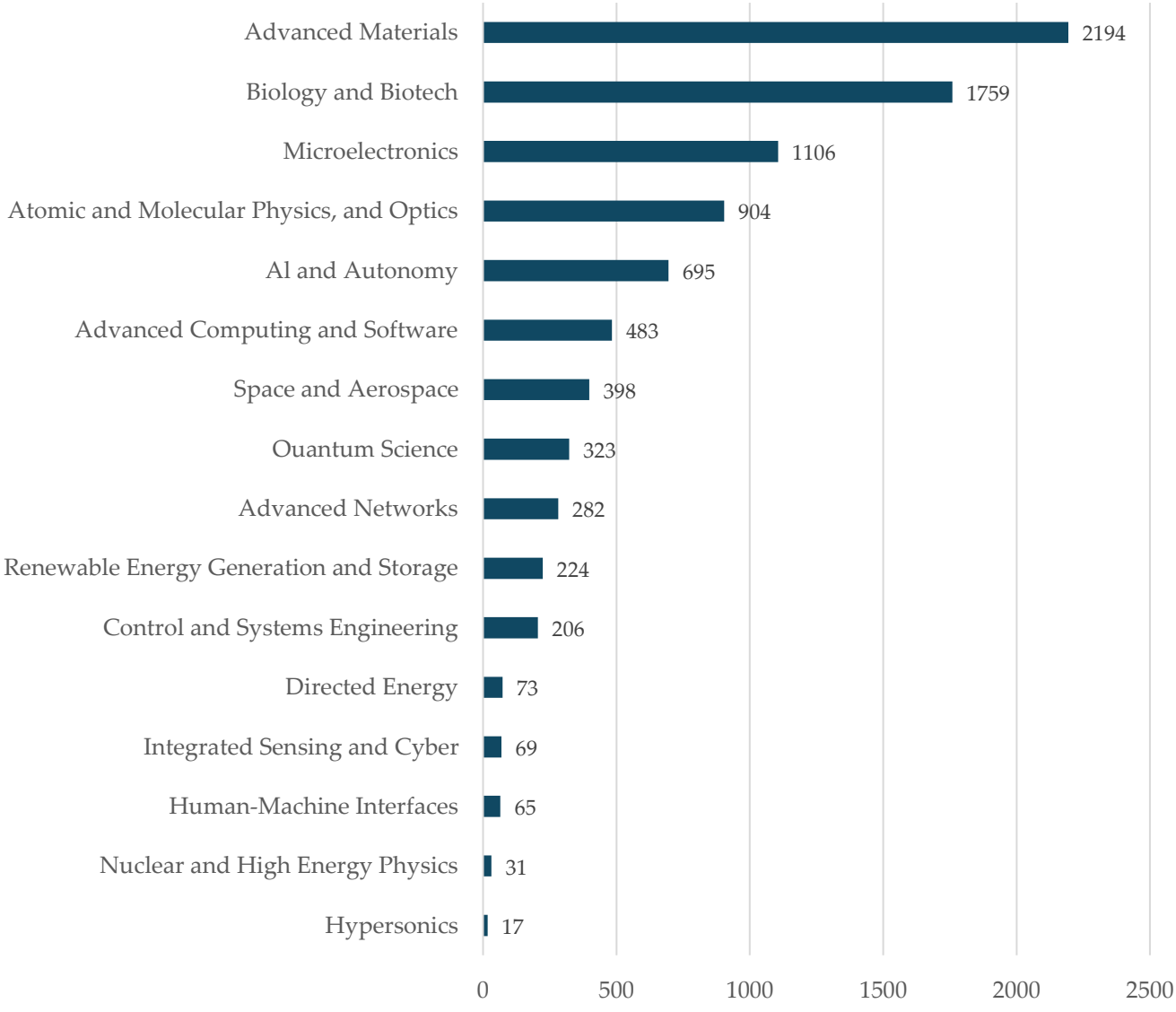


The vast majority of these DOD-funded publications constitute advanced research in dual-use, critical, and emerging technologies. Given the DOD's defense interests, this is not a surprise, but it is nevertheless deeply worrying. For example, we identified hundreds of DOD-funded papers co-authored with PRC individuals

and entities that focused on advanced materials that may be relevant to future weapons systems or other defense applications (2194) and artificial intelligence and autonomy (695 papers), as well as research on space and aerospace (398) and advanced networks and computing (765). We also found papers that appear to be directly relevant to applied weapons systems, such as 31 papers on nuclear and high energy physics, 17 on hypersonics, and 73 on directed energy.

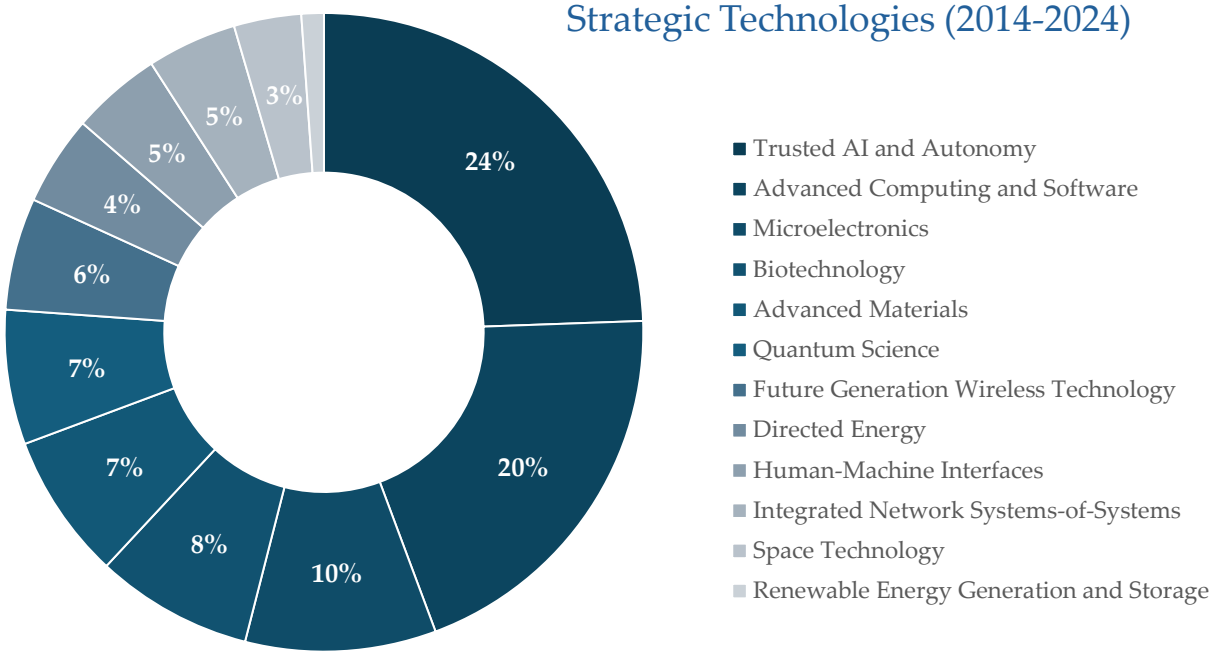
"We also found papers that appear to be directly relevant to applied weapons systems, such as 31 papers on nuclear and high energy physics, 17 on hypersonics, and 73 on directed energy."

Graph 2 - DOD Funded PRC Coauthored Publications on Strategic Technologies (2014-2024)



The IC-funded papers similarly focus on advanced, strategic technologies.

Graph 3 - IC Funded PRC Coauthored Publications On Strategic Technologies (2014-2024)



Equally troubling, a recent study by the Navy Criminal Investigative Service demonstrates that in thousands of cases, the benefit of these research collaborations is directly fueling the PRC's defense industrial base.[32] Surveying grants provided by the Office of Naval Research, Air Force Office of Scientific Research, and the Army Research Office between 2019-2024, the study found that of 5,000 DOD-funded publications with a PRC collaborator or affiliate, approximately half—more than 2,500—of the collaborators were directly with the PRC's defense research and industrial base.

"[O]f 5,000 DOD-funded publications with a PRC collaborator or affiliate, … more than 2,500 … were directly with the PRC's defense research and industrial base."

Among those collaborations, the study found 85 collaborations "with China's primary nuclear weapons development complex," 94 collaborations with the "Seven Sons of Ordnance Industry," 72 collaborations with known talent program participants, and hundreds of collaborations with the Seven Sons of National Defense.[33] A related study of U.S. Army research collaborations with PRC entities revealed that the U.S. Army-funded researchers have collaborated with the PLA's

"[T]he study found 85 collaborations "with China's primary nuclear weapons development complex."

National University of Defense Technology, the PRC's Ministry of Public Security, Seven Sons of National Defense and Ordnance Industry universities, national defense laboratories, CAEP (nuclear weapons research and development complex), Military-Civil Fusion research institutions, state-owned defense conglomerates, and high-risk entities (Huawei, Hikvision, Tencent).[34]

These studies found that the relevant collaborations covered a wide range of sensitive technologies crucial to national security, including cryptography, eavesdropping, hyperspectral imaging, lithium-ion batteries, aerodynamic angles of attack, electronic warfare, cyber-attack detection, high-density explosives, high entropy alloys, radar target detection, quadcopters, artificial intelligence, quantum technology, multi-target tracking, missile impact penetration, and surveillance technologies.[35]

"[C]ollaborations covered … eavesdropping, hyperspectral imaging, aerodynamic angles of attack, electronic warfare, high-density explosives, high entropy alloys, radar target detection, quadcopters, artificial intelligence, quantum technology, multi-target tracking, missile impact penetration, and surveillance technologies."

The NCIS study concluded that in some cases, the "PRC government has influenced [the] multi-generational lifecycle of US federally funded research," and that it often "targets scientists and engineers after they have developed expertise, gained access to federal funding," or demonstrated other metrics of value. The study also concluded that "[m]ost of the research collaboration goes unreported or misreported," in part because of inadequate reporting requirements.[36] Lack of penalties for improper reporting or failure to report undoubtedly also play a role. The case studies below illustrate how this technology transfer occurs in practice.

B. Case Studies

In the six case studies, we illustrate how the PRC has leveraged American federally funded research to gain expertise and applied knowledge and to develop practical capabilities to advance its strategic goals. In each case study, the federally funded researcher helped the PRC achieve significant advances in a dual-use, critical, or emerging technology, in collaboration with entities deeply intertwined with the PRC's defense and security establishment.

The stories follow a similar pattern: researcher(s) at an American university pursued cutting-edge research related to critical or emerging technologies, often with a clear military application. The researchers secured funding for fundamental research from U.S. government sources including DOD, National Science Foundation, Department of Energy, National Aeronautics and Space Administration (NASA), and National Institutes of Health and affiliated entities. In all, this funding likely exceeded one hundred million dollars. While benefiting from this taxpayer-funded support, these researchers cultivated ties

"While benefiting from this taxpayer-funded support, these researchers cultivated ties with entities … directly subordinate to [China's] military-industrial complex."

with entities directly subordinate to or closely aligned with the Chinese Communist Party's military-industrial complex.

While receiving federal funding, all six researchers obtained at least one senior position at an advanced PRC research institution. In at least three cases, the researchers held senior positions at the Chinese Academy of Sciences (CAS), the "backbone" of China's state-driven scientific development strategy and innovation system according to DOD, with "much of its work ultimately funding disciplines and contributing to products for military use." [h,37] It receives generous

Figure 1 –Tech Transfer Pipeline

budget allocations dedicated directly to defense and security research areas,[38] and reports directly to the State Council. A CAS affiliation creates a direct pipeline for researchers to advance China's military modernization efforts. Four of the researchers helped create advanced technological research institutes in the PRC and/or served in senior leadership roles at such an institute.

One researcher began collaborating with the blacklisted Chinese Academy of Engineering Physics (CAEP). CAEP is the PRC's nuclear warheads research, development and production entity,[39] responsible for nuclear warhead design, directed-energy weapons research, and conventional weapons technology.[i,40] The academy has been implicated in multiple espionage cases involving U.S. nuclear secrets and maintains strong ties to civilian universities through talent recruitment programs, running joint laboratories[j] and sponsoring postgraduate students.[41, 42] In 2015, CAEP had recruited 57 scholars through the Thousand Talents Plan, making it one of the largest recruiters in this program.[43] The U.S. government has added CAEP and multiple subsidiaries to the Entity List.[44]

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[h] CAS's staff of about 150,000 includes China's top scientists and engineers and graduate students across more than 100 research institutes.

[i] Its four main tasks are developing nuclear weapons, researching microwaves and lasers for nuclear fusion ignition and directed-energy weapons, studying technologies related to conventional weapons, and deepening military-civil fusion.

[j] It also hosting a portion of the Tianhe-2, one of the world's most powerful supercomputers. Wang Bin, *This Hunan "Special" Title has Claimed Six World Firsts [这个湖南"特"字号，勇夺六次世界第一]*, CHANGSHA EVENING NEWS (Feb. 28, 2019), https://web.archive.org/web/20190929221752/https://hn.rednet.cn/content/2019/02/28/5168529.html.

CAS and CAEP stand in stark contrast to the U.S. National Academy of Sciences and Engineering, which is an independent, non-governmental organization that provides objective scientific advice to the nation and is not subordinate to or working on behalf of the U.S. government or defense contractors. Both CAS and CAEP are purposefully and directly tied to the PRC's military research and development efforts.

The six researchers further deepened their engagement with the PRC's scientific and defense establishments through various government-led programs. At least five participated in one or more PRC talent programs (three participated in the Thousand Talents Plan; one participated in five different talent programs).[45] These programs offer lucrative benefits to incentivize experts to siphon off critical knowledge and expertise from overseas institutions to fuel the PRC's technological ascendancy and military ambitions. They are also deeply capitalized: in 2018 alone, talent programs and the PRC's National Key R&D programs invested over $60 billion in strategic sectors.[46]

Table 1 – PRC Exploitation of U.S. Government Funded Research

	R1	R2	R3	R4	R5	R6
Technology	4G Nuclear Weapons	Artificial Intelligence	Laser Technology	Nano-Technology	Graphene Chips	Robotics & Control Systems
US Fed'l $	> $8m	$30-40m	> $10.2m	$22m	> $5.6m	$12m
DoD $	Yes	Yes	Yes	Yes	Yes	Yes
PRC $	Yes	Yes	Yes	Yes		Yes
PRC Talent Programs	Yes	Yes	Yes	Yes		Yes
Tier 1 (CMC)	Yes					
Tier 2 (Seven Sons)	Yes	Yes				Yes
Tier 3 (SASTIND)	Yes	Yes (x2)	Yes	Yes	Yes	Yes
Collab. w/ Blacklisted Entities	Yes	Yes	Yes	Yes	Yes	Yes

Alarmingly, some of these researchers developed affiliations—including formal appointments, advisory roles, joint research projects and institutes, or other collaborative relationships—with institutions deeply embedded in the PRC's defense industrial base. Some engaged with the PRC's Seven Sons of National Defense universities. Others began to work with or at a second category of universities—including prestigious civilian universities like Tsinghua and Peking Universities—that are co-supervised by SASTIND and are leveraged by the PRC government for defense purposes.[47] Five of the researchers obtained positions at

universities in this category,[k] and the sixth began working at a PRC university with defense characteristics.[l] [48]

The technology transfers took various forms. Breakthrough advances in graphene semiconductor technology emerged from a PRC university lab established by a U.S. researcher who had been funded by federal dollars for decades. Laser semiconductor technology was refined through a joint partnership between U.C. Berkeley and Tsinghua University, then commercialized in the PRC by a company with more than a dozen PRC investors, including state-controlled entities. Advancements in military-use nanotechnology were achieved through direct collaboration between a U.S. federally funded researcher and Chinese military entities. An AI researcher who had received tens of millions in federal funding moved to China and is now running one of the PRC's leading efforts to develop artificial general intelligence (AGI).

And in every case study, the Chinese defense and military complex stands to benefit from the U.S. government's open and unrestricted funding of these breakthroughs in critical technologies. These examples illustrate how researchers who received millions (in some cases, tens of millions) in U.S. federal funding subsequently leveraged their expertise to help the PRC acquire innovative U.S. technology and develop high-tech capabilities for its pursuit of economic and military dominance.

1. Fourth Generation Nuclear Weapons Technology

Researcher 1, a leading materials scientist, led a team of PRC researchers and others in achieving a significant scientific breakthrough that helps to lay the groundwork for the PRC's development of fourth generation nuclear weapons. They achieved this breakthrough based on expertise he developed over years of receiving federal funding.

To achieve this breakthrough, Researcher 1 leveraged expertise he developed over years of receiving U.S. federal research funding.[49] Researcher 1 conducted groundbreaking research on materials under extreme conditions, such as high pressure and temperature. His work on the synthesis of metallic hydrogen, often called the "Holy Grail" of materials science, placed him at the forefront of energy and superconductivity research.[50] During this time, Researcher 1's research was funded by at least five different DOD components—including the Defense Advanced Research Projects Agency (DARPA), the Office of Naval Research, and the Army Research Organization—as well as the Department of Energy (DOE), multiple DOE National Laboratories, NSF and the National Nuclear Safety Administration.[51] Researcher 1 received at least $7.8 million in federal funding from NSF alone.[52] (While the overall total received in federal funding appears to be higher, there is unfortunately a lack of open source data on many of his funding

[k] Tianjin University, Tsinghua University, Peking University, Jilin University, Zhejiang University, Guilin University of Electronic Technology, and Shandong University.

[l] Northeastern University of China, which is part of a group of universities focused on developing military aircraft that is led by blacklisted PRC defense firm Aviation Corporation of China (AVIC).

sources.) Researcher 1 continued to benefit from federal funding while teaching and conducting sensitive research in the PRC.

Researcher 1 continues to benefit from federal funding.[53] As recently as August 2024, Researcher 1 was awarded a $1 million NSF grant as a co-investigator that will end in 2027.[54]

While benefiting from federal funding, Researcher 1's collaboration with Chinese institutions has critically advanced China's nuclear weapons program. Researcher 1 moved to the U.S. in the 1990s and worked at Lawrence Livermore National Laboratory in the early 2000s.[55] Following a return to U.S. research institution in 2005, he began collaborating closely with a number of PRC entities, and was invited to serve as a professor at the Chinese Academy of Science, Institute of Solid State Physics (CAS, ISSP), working there from 2011 to 2020. His expertise was quickly recognized, and in 2012, he was selected into China's prestigious 1000 Talents Program at CAS, ISSP.[56]

During his time at ISSP, Researcher 1 led a group of Chinese researchers in achieving a significant scientific breakthrough by successfully synthesizing metallic nitrogen. Chinese media have lauded this material as possessing energy "10 times that of TNT," a development with the potential to create "fourth-generation nuclear weapons" capable of replacing atomic bombs.[57] This achievement, which PRC media claims overcame "technical difficulties in the production of metal gases," marks a critical advancement in their nuclear capabilities—a direct result of the knowledge Researcher 1 brought with him.[58] In recognition of his "great" contributions to Chinese progress, Researcher 1 was awarded the "2015 People's Republic of China Friendship Award," the highest honor for foreign experts in China.[59]

Through China's 1000 Talents Program, Researcher 1 also began collaborating with entities that are part of the PRC's nuclear weapons complex. For example, he gave multiple presentations and collaborated on research with the Center for High Pressure Science and Technology Advanced Research[60] and the Beijing Computational Science Research Center,[61] which are both subordinate to the PRC's nuclear weapons research, development, and production entity, CAEP. Researcher 1's contributions at ISSP, supported by funding from the PRC's 973 Program, Talent Programs, and Military-Civil Fusion initiatives, have likely bolstered CAEP's ability to produce advanced materials for high-performance energetic applications, including nuclear weapons. And Researcher 1's connections to universities like Jilin, Zhejiang, and Guilin University of Electronic Technology, all affiliated with SASTIND, further enabled the transfer of critical research to China's defense sector.

Researcher 1's research institution informed the Committee that Researcher 1 has since terminated his collaborations with PRC institutions and has no current

collaborations with CAEP or with ISSP.[m] Researcher 1 continues to receive federal research funding today.

2. Artificial Intelligence

The potential military applications of cutting-edge artificial intelligence are legion, covering capabilities from autonomous weapons systems to reconnaissance, sensor, targeting, and manufacturing capabilities.

Over the course of three decades, Researcher 2 received at least $30 million in U.S. federal grants from agencies including the DOD, National Science Foundation, and Office of Naval Research.[62] Researcher 2 was a professor at UCLA from 2002 to 2020, and he directed UCLA's Center for Vision, Cognition, Learning and Autonomy (VCLA) from 2010 to 2020. VCLA works on advanced AI systems and robotics, including projects with clear military applications.[63] Researcher 2's DOD-funded work explored high-level robot autonomy and cognitive robot platforms for intelligence and surveillance.[64]

While receiving federal funding, Researcher 2 was recruited into multiple PRC talent programs,[n] built a PRC institute designed to transfer military technology to the PRC, and took on senior roles with problematic PRC entities, including a blacklisted defense university.[65] As early as 2004, he was actively collaborating with the CCP to develop next generation military technologies.[o,66] In 2013, Researcher 2 began serving as an overseas advisor to the Chinese Academy of Sciences.[67] And in 2020, after taking a formal leave of absence from UCLA in November, he began conducting research and training PhD students at the Beijing Institute of Technology, one of the Seven Sons which was blacklisted by the U.S. government the same year.[68]

"While receiving federal funding, Researcher 2 … built a PRC institute designed to transfer military technology to the PRC, and ***took on senior roles with*** *problematic Chinese entities, including* ***a blacklisted defense university****."*

In July 2017, Researcher 2 leveraged knowledge gained from a half million-dollar NSF grant[69] to found an AI startup in Los Angeles, but quickly moved the

[m] According to Researcher 1, he terminated these collaborations as of four years ago and his last interaction with a PRC institution was a talk he gave one and a half years ago at Hefei University of Technology, which "specializes in engineering and engages in growing levels of defence research, particularly in the field[] of advanced materials." *See* China Defence Universities Tracker, ASPI, *Hefei University of Technology* (last accessed Sept. 22, 2024), https://unitracker.aspi.org.au/universities/hefei-university-of-technology/.

[n] Researcher 2 participated in programs including the Thousand Talents Plan, Chang Jiang Scholar award, Dragon Star Program, 863 Program, and 973 Program.

[o] In 2004, Researcher 2 founded the Lotus Hill Institute near Wuhan, ostensibly for international academic exchange. Supported by local Communist Party officials, the institute launched a project under China's 863 Program in 2008, a state initiative aimed at developing advanced military technology. The LHI, which shared many students and visiting scholars with Researcher 2's UCLA research center, effectively became a platform for Chinese scholars to engage with AI technology for military applications, facilitating cross-institutional knowledge transfer. *See also* endnote 66.

startup to the PRC. By 2018, it was headquartered in the PRC and known as Dark Matter Artificial Intelligence (Dark Matter, 暗物智能).[70] The company, focusing on human-machine interaction research, rapidly grew to a team of over 200, many of whom were students and professors from UCLA, including former members of Researcher 2's research center.[71] Dark Matter immediately attracted significant investment, raking in more than $60 million from Chinese state-owned enterprises alone in the years following. It has rapidly expanded its technological footprint, filing over 100 patents since its inception.[72] Key innovations include a "wheel-foot switching robot system," "facial expression recognition" technology, and methods for "pedestrian re-identification across image and video modalities" and "abnormal event detection in monitoring scenarios."[73] The company's R&D efforts appear to be accelerating.[74]

By the fall of 2020, Researcher 2 had returned to China full-time.[p],[75] He was appointed as a Chair Professor at both Tsinghua University and Peking University, two of China's most prestigious institutions—both supervised by SASTIND and home to large defense-focused laboratories.[76] He also founded the Beijing Institute for General Artificial Intelligence (BIGAI), a Chinese-state backed entity working to build China's artificial general intelligence (AGI) capability.[q]

BIGAI has recruited more than 30 top scientists educated at leading U.S. and UK research universities, many of whom were members of Researcher 2's VCLA team or trained under U.S. government programs.[77] Those still at VCLA continue to coauthor with staff at BIGAI. [78]

BIGAI continues to benefit from federal funding in other ways as well. Another BIGAI researcher previously received DOD grants and coauthored several U.S. government-funded studies.[79] And a quick public records search reveals that BIGAI researchers have co-authored at least seven recent papers funded by DARPA and/or ONR.[80]

This continued collaboration across institutions—supported by the U.S. federal government—serves to transfer sensitive applied expertise and technological capabilities in precisely the areas in which the U.S. regulates the transfer of the technologies, like AI, that may result. In other words, the U.S. government is funding the PRC's efforts to leapfrog past the U.S. in critical and emerging technologies, raising significant national security concerns for the United States.

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[p] According to UCLA, Researcher 2 "currently has no external research funding from any source through UCLA and has not since November 2020," when he took a "formal leave of absence without pay from UCLA." He "formally retired from UCLA in October of 2022." He retains the title Professor Emeritus at UCLA. Documents on file with the Select Committee.

[q] Unlike western AGI focused companies, it focuses on "small data, big task (小数据, 大任务)" methodologies, emphasizing brain cognition and neuroscience.

Researcher 2 has framed BIGAI's mission in strategic national terms, likening it to China's "Two Bombs and One Satellite" (两弹一星)" program in defense importance.[81] In a March 2023 address to the Chinese People's Political Consultative Conference (CPCC), he stated, "If China can be the first to achieve a truly generally intelligent entity, it will become the 'ace in the hole' of international scientific and technological competition."[82] He called for AGI development to be elevated to a national priority, coordinated by the central government to "seize the commanding heights of global technology and industrial development."[83]

"Researcher 2 has framed BIGAI's mission in strategic national terms, likening it to China's "two bombs and one satellite" program."

This strategic positioning of BIGAI, combined with Researcher 2's extensive history of U.S. government-funded work and his ongoing connections to American research institutions, raises significant concerns about the potential transfer of sensitive technologies and knowledge.

3. Laser Technology

A core challenge in semiconductor manufacturing relates to the precise etching and patterning of microscopic circuits on silicon wafers. Semiconductor lasers are crucial in this process, providing the focused light needed for photolithography to create increasingly complex integrated circuits. These lasers are key to advancing computing power and miniaturization in microelectronics.

U.C. Berkeley's partnership with Tsinghua University, known as the Tsinghua Berkeley Shenzhen Institute (TBSI),[r] is expressly focused on commercializing research.[84] In practice, this means that through this partnership, U.S. expertise and technological capabilities developed by U.S. professors—many of whom have received or are receiving federal funding—are powering the PRC's technological advancements, including in dual-use areas.

In a particularly troubling example, Researcher 3, who was on leave from UC Berkeley starting in 2018 and resigned from the university in 2020, leveraged years of federally funded research to start a PRC-based company named Berxel that created breakthrough laser technology.[85] While receiving federal funding, Researcher 3 participated in Chinese talent programs like the Chang Jiang Scholars Program, and served as a Chair Professor at Tsinghua University.[86]

[r] This partnership is discussed in greater detail below in Section III.B.

Researcher 3 used support from a DOD National Security Science and Engineering Faculty Fellowship that ran through 2014—shortly before co-founding TBSI in 2015—to explore the technology now offered by Berxel for use in PRC data centers and AI computing.[87] Fellowship grantees receive up to $3 million in federal funding.[88] In 2017, a TBSI press release touted that Researcher 3's research team had achieved "new breakthroughs" in laser semiconductor technology.[s, 89] Researcher 3 established Berxel—which is focused on that same technology—the next year, in 2018.[90] Intellectual property filings shifted to Berxel as well—Researcher 3's teams' initial patents were filed through the University of California (2018-19);[91] numerous filings followed under Berxel between 2022 to 2024.[92]

"Researcher 3 used support from a DOD National Security … Fellowship … to explore the technology now offered by Berxel for use in PRC data centers and AI computing."

PRC media has since described Berxel's patented laser technology as a critical achievement which "broke the long-standing foreign technology monopoly" because it was the first of its kind "domestically developed and produced in China."[93]

Researcher 3's position at TBSI likely provided access to investors in the PRC, and in turn gave those investors access to the experience and technological capability Researcher 3 developed through federal research funding. Today, Berxel has over a dozen PRC-based investors,[t] including firms that have invested in PRC companies that support the Chinese defense apparatus.[94]

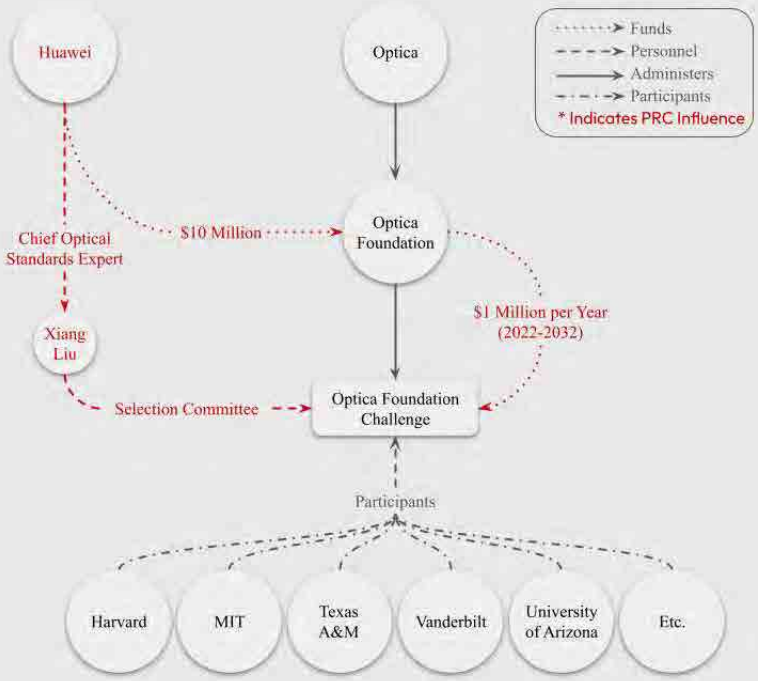
[s] This related to the development of Vertical-Cavity Surface-Emitting Lasers (VCSELs). VCSELs are a type of semiconductor laser that emits light vertically from its surface. It has become a dominant technology in datacenter optical communications, 3D sensing, and optical coherent tomography due to its efficiency and versatility.

[t] Berxel has attracted investments from 14 Chinese entities over three years (2019-2021). One investor, Montage Technology, is indirectly owned by the China Electronic Information Industry Group Co., Ltd. (CEC), which is on the U.S. Non-SDN Chinese Military-Industrial Complex Companies List. In addition, Berxel actively engages with Chinese academic institutions like SASTIND-directed Peking University, which also works with the Seven Sons of National Defense universities and contributes to the CCP's military modernization goals.

Huawei Secretly Funneled Money to American Researchers Through the Optica Foundation

In May 2024, leaked internal documents from professional photonics society Optica revealed that the blacklisted PRC telecommunications giant Huawei had been providing millions of dollars to Optica as the sole funder of an annual research award for early career researchers.[1] At Huawei's request, Optica hid Huawei's involvement—funding for ten researchers/year—including three U.S. researchers in 2022 and 2023. Huawei also played a role in the award selection process,[2] granting it secret, early access to research projects in advanced photonics.

This appears to have been designed, at least in part, to circumvent university policies curtailing ties with Huawei, which many universities had adopted in 2019 amidst concerns about losing federal funding.[3] Following a congressional probe earlier this year, Optica stated that it would sever ties with Huawei and return the company's donations. U.S. law does not prohibit such pass-through funding mechanisms, and given the opaque funding, pass-through funding mechanisms like this may not be detected by many universities' research security programs.



[1] Kate O'Keeffe, *Huawei Secretly Backs US Research, Awarding Millions in Prizes*, BLOOMBERG (May 2, 2024, 6:00 A.M.), https://www.bloomberg.com/news/articles/2024-05-02/huawei-secretly-backs-us-based-research-with-millions-in-prizes-through-dc-group?srnd=undefined.

[2] Letter, U.S. House of Reps. Comm. on Sci., Space, & Tech. to Elizabeth Rogan, Chief Exec. Officer, Optica (July 29, 2024), https://republicans-science.house.gov/_cache/files/5/d/5dae8bfb-04eb-42de-ab3d-ae94d1e14303/758BDC84E3032674A3AFA4092AFEFA93.2024.07.29-fl-and-zl-to-optica-pt2-fd-.pdf.

[3] Collin Binkley, *Correction: Huawei-Colleges Story*, ASSOCIATED PRESS (Apr. 5, 2019, 3:58 P.M.), https://apnews.com/article/784dda7f0622431ebfd3e4c74f7bd5bd; Robert Delaney, *Shutting the Gates of Academia: American Universities Cut Ties to Huawei and Confucius Institute*, S. CHINA MORNING POST (Mar. 19, 2019, 3:00 A.M.), https://www.scmp.com/news/china/diplomacy/article/3002218/shutting-gates-academia-universities-cut-ties-huawei-and.

Berxel's products also have potential military applications. In fact, TBSI researchers published a paper in collaboration with China's State Key Laboratory on High Power Semiconductor Lasers—a defense-oriented research institution—that emphasizes semiconductor lasers applications' in "military defense […] fields."[95]

Berxel focuses developing high-speed laser and 3D vision solutions for AI computing, cloud data centers, intelligent manufacturing, smart vehicles, robotics, and AIoT applications.[96] The company is also focused on LiDAR applications, which are used in autonomous vehicles and battlefield mapping.[98] In addition, the technology can be used for facial recognition, which the PRC has used to advance its human rights abuses.[99]

Since establishing Berxel, Researcher 3 has picked up affiliations with the Chinese Academy of Engineering and Peng Cheng Laboratory.[100] This provincial government-backed institution focuses on advanced technologies, including artificial intelligence, while maintaining extensive ties to China's defense-industrial complex.[101] This laboratory collaborates with numerous U.S.-sanctioned entities, including the China Aerospace Science and Technology Corporation and the China Electronics Corporation, as well as other blacklisted Chinese state-owned enterprises involved in defense technology development and implicated in China's human rights abuses.[102]

Researcher 3's concurrent role as president of Optica in 2021 raises further alarms, particularly in light of recent revelations about Huawei's covert funding of advanced photonics research at U.S. universities through this organization.[103] The blacklisted telecoms giant entered into an agreement with Optica to secretly fund cutting edge research in photonics at U.S. research universities—paving the way for Huawei to access early stage of advanced research in the United States.[u] This confluence of positions put Researcher 3 at the nexus of the PRC's sophisticated, state-backed system for acquiring cutting-edge U.S. technology.

This transfer of cutting-edge laser technology not only represents a threat to American national security and technological supremacy but also aids the PRC's aggressive military modernization and fuels its repressive surveillance state.

[u] Huawei's agreement with Optica is part of a broader pattern of evasive tactics employed by the company to bypass U.S. restrictions. Another notable example is its U.S.-based research arm Futurewei's attempts to create a false façade of separation from its parent company, illustrating Huawei's persistent efforts to maintain access to American technology and expertise through various channels. *See* Jane Lanhee Lee, *Exclusive: Huawei's U.S. research arm builds separate identity*, REUTERS (June 24, 2019), https://www.reuters.com/article/technology/exclusive-huaweis-us-research-arm-builds-separate-identity-idUSKCN1TP2DG/.

4. Nanotechnology

Piezotronics and nanogenerators are technologies that harness mechanical energy to control electronics or generate electricity, with nanogenerators specifically focused on powering wireless devices.[104] According to the U.S. Army, these technologies could be used to "power future generations of miniature autonomous systems and satellites" and improve the capabilities of weapons systems.[105]

Researcher 4 is a pioneer in piezotronics and nanogenerators, and he has built deep and extensive ties with institutions in the PRC, including those linked to the PLA.[106]

Over decades, Researcher 4 secured approximately $22 million in federal funding from various U.S. agencies, including the National Science Foundation, Department of Energy, DARPA, NASA, National Institutes of Health, and the U.S. Air Force.[107] He has published extensively with DOD-funded researchers.[108]

At the same time, Researcher 4 has participated in PRC talent programs designed to transfer technology to China, maintained a series of dual affiliations with problematic PRC entities, and conducted research alongside the PLA.

"Researcher 4 secured approximately $22 million in federal funding from various U.S. agencies, including … DARPA, … NASA, … and the U.S. Air Force. At the same time, Researcher 4 … conducted research alongside the PLA."

Researcher 4 has participated in PRC talent programs designed to transfer technology to China since at least 1992. These include the "Chunhui" plan, which requires Chinese academics to offer "new information or technology" to the PRC,[109] the Chang Jiang Scholar program,[110] and the Thousand Talents Plan, into which Researcher 4 was recruited in 2011.[111] From 1992 and 2010 alone, while researching nanotechnology at Georgia Tech, he frequently traveled to the PRC to collaborate with PRC scholars.[112]

Researcher 4 has held numerous positions within problematic Chinese institutions. For example, he has held numerous positions with the Chinese Academy of Sciences, including: a senior advisory role since 1998,[113] first overseas director of the National Center for Nanoscience and Technology since 2004,[114] and chief scientist at the Beijing Institute of Nanoenergy and Nanosystems since 2012.[115]

Researcher 4 also founded and directed the Department of Advanced Materials and Nanotechnology at Peking University. This PRC institution operates a micro/nano fabrication laboratory jointly with PLA-linked[116] Shanghai Jiao Tong University.[117] Both Peking University and Shanghai Jiao Tong University are institutions that, like Tianjin University, are supervised by the Chinese state with a goal of strengthening the PRC's military and technological prowess.[118]

Researcher 4 also unsuccessfully sought to establish a joint doctoral program between Georgia Tech and Peking University.[119]

Researcher 4's work has increasingly involved collaborations with PLA-affiliated institutions, focusing on self-powered technologies with significant defense implications, including advanced sensors, energy harvesting systems, and miniaturized power sources that could enhance military capabilities in aerospace, biomedical, and surveillance applications. While conducting research at the Beijing Institute of Nanoenergy and Nanosystems, Researcher 4 expanded his research collaborations with key PRC defense entities. He worked with researchers from the China Aerospace Science and Technology Corporation and its subsidiaries,[120] engaged with PLA-linked medical research institutes,[121] and partnered with several "Seven Sons of National Defense" universities, including Beihang University,[122] Harbin Institute of Technology,[123] Beijing Institute of Technology,[124] and the Nanjing University of Aeronautics and Astronautics.[125]

Furthermore, Researcher 4 has filed hundreds of patents in China between 2012 and 2024 through the Beijing Institute of Nanoenergy and Nanosystems.[126] These patents cover innovations in triboelectric nanogenerators, self-powered sensors, and energy harvesting systems, directly supporting the advancements mentioned in his PLA-affiliated research. Notable examples include a "friction nanometer power generator" and a "self-powered respiration monitoring device," which align closely with the military medical and sensing applications described previously.[127] These filings indicate a massive transfer of applied knowledge and capability to China that goes well beyond the limited nature of findings that are ordinarily shared via publication in academic articles. Many patents appear to directly leverage concepts developed during Researcher 4's U.S. tenure, suggesting the transfer to the PRC of expertise and applied capability likely funded by American taxpayers.

"Researcher 4's contributions were recognized [at an] award ceremony attended by Xi Jinping and representatives from the Central Military Commission."

In 2014, Researcher 4's contributions were recognized with China's International Science and Technology Cooperation Award. The award ceremony, attended by Xi Jinping and representatives from the Central Military Commission, China's top military decision making body, praised Researcher 4 for "actively promot[ing] the construction of cutting-edge scientific research centers and platform bases in China," highlighting the strategic importance of his work to the PRC.[128]

5. Graphene Semiconductor Technology

Semiconductors have traditionally been made with silicone, but for decades researchers have investigated whether graphene might offer a viable alternative to create more advanced and efficient semiconductors at lower cost. The U.S.

government, including the DOD, have invested heavily in graphene-based semiconductor research since the late 1990s.

Researcher 5 has been at the forefront of this research effort. Over decades, he received over $5 million in federal funding,[v,129] including millions in awards to explore graphene applications in hope of "revolutioniz[ing] the electronics industry" and "kick[ing]-off the long awaited 'age of graphene electronics.'"[130] He also received support from Georgia Tech's DOD-funded research institute,[131] which was selected and approved by the DOD to conduct research that advances the Department's national security priorities.[132] In 2014, he reported that a three-year DOD grant had allowed him to "accomplish[] several of the most important experimental results in graphene to date."[133]

Shortly after achieving this breakthrough, in 2015, Researcher 5 began working with a former post-doc of his to set up a special laboratory at Tianjin University in the PRC, the Tianjin International Center of Nanoparticle and Nanosystems (the Nano Center).[134] The two researchers established the Center[135] to advance the same technology that Researcher 5 developed using U.S. taxpayer dollars.[136] According to Tianjin University, the Nano Center was designed the advance the PRC's "national technological interests."[137] It began formal operations in 2018.

Tianjin University is a SASTIND co-supervised university that houses major defense laboratories, receives Chinese government funding for defense-related research, is credentialed to perform classified research for the Chinese government, and participates in PRC military projects.[138] Tianjin University was also involved in a scheme to steal technology with military applications from U.S. companies, activities for which it was placed on the U.S. Department of Commerce's Entity List in 2020.[139] Though not one of China's "Seven Sons of National Defense," Tianjin University holds a significant position among second tier strategic defense-affiliated research institutions while presenting itself as a civilian institution.

Researcher 5 continued to receive federal funding while setting up and leading the Nano Center at Tianjin University. Between 2013 and 2021, the National Science Foundation awarded him $1 million in research grants to advance understanding of nanoscale materials and their potential applications.[140] In 2015, the NSF provided a $400,000 grant over five years to investigate applications of graphene in advanced electronics.[141] This yielded a "major discovery" with "far reaching consequences" for quantum computing, among other applications. A

[v] Researcher 5 received funding from the same national security fellowship as Researcher 3, per above, the DOD National Security Science and Engineering Faculty Fellowship, which is now known as the Vannevar Bush Faculty Fellowship. Notably, Charles Lieber, the Harvard professor convicted of lying to federal agents and filing false tax claims related to his federal research grants and activities in the PRC, received this fellowship as well. *See 2009 Vannevar Bush Faculty Fellows*, DEP'T OF DEF., https://basicresearch.defense.gov/Programs/Vannevar-Bush-Faculty-Fellowship/2009-Vannevar-Bush-Fellows/ (last visited Sept. 20, 2024).

further 2022 breakthrough in graphene research from researchers at the Nano Center, including Researcher 5, also credited NSF funding.[142]

This federal support also attracted other researchers to the Nano Center, including another Georgia Tech researcher, who received an NSF grant in 2016 to perform research at the Nano Center under Researcher 5's supervision.[143] Notably, this grant was "jointly funded by the NSF and the Ministry of Science and Technology of China," facilitating international research collaboration through a project where "[the Nano Center] in Tianjin, China, [] act[ed] as a scientific exchange center between the Georgia Institute of Technology in the United States and Tianjin University," further intertwining international collaboration with U.S. taxpayer-funded research.[144]

The Center has also facilitated student exchanges, including doctoral, master's, and undergraduate students from both Georgia Tech and Tianjin University—oftentimes at the expense of the U.S. Government.[145]

"While Researcher 5 and his colleagues were using U.S. federal research dollars to pursue these advancements and concurrently working on similar research with the Nano Center, the Center was also ***building partnerships with PLA-affiliated entities across China****."*

While Researcher 5 and his colleagues were using U.S. federal research dollars to pursue these advancements and concurrently working on similar research with the Nano Center, the Center was also building partnerships with PLA-affiliated entities across China. For example, it established a joint lab with Beijing 718 Yousheng Electronics (718 Yousheng), "state-owned military-industrial […] enterprise" that focuses its R&D and production for PRC aerospace and defense industry.[146] 718 Yousheng has also received funding from the PRC government's semiconductor R&D investment fund,[147] which is designed to "reduce [PRC] reliance on other nations" and improve China's "chip sovereignty."[148] The company provides technology for use in aerospace, aviation, weapons, and ships, including for the PRC's Shenzhou spacecraft, Long March rockets, and Fengyun satellites. In 2019, the Center also opened a joint laboratory with China Bright Stone Innovation Group, whose subsidiaries are contractors for blacklisted Chinese military entities like the China Shipbuilding Industry Corporation.[149]

Researcher 5 and a GTRI-funded researcher under his supervision helped to advance and ultimately contribute to the breakthrough for which Researcher 5 is partly credited at the Nano Center. In collaboration with Tianjin University researchers, jointly succeeded in creating the world's first functional graphene semiconductor in 2024, a breakthrough described as a "paradigm shifting" technology that will help China overcome U.S. export controls on the PRC for foundational semiconductor technology.[150] The paper stated that "[m]ost of the work reported here was performed at [the Nano Center]" and credited Tianjin University, the PRC's Ministry of Education, and Georgia Tech's DoD-funded institute—GTRI—with having financially supported the project.[151] The technology

has potential applications in both quantum and high-performance computing, with implications for advanced military systems such as autonomous weapons systems, enhanced cyber activities, and other defense-related technologies.

In short, decades of U.S. federal funding helped an American researcher achieve a technological breakthrough in a core technology with military applications—but the breakthrough, the expertise, and the capability resulting from this research have been transferred to the PRC and developed in concert with entities linked to China's military and defense establishment.

6. Robotics and Control Systems

Advanced robotics and control systems have significant military applications, including in autonomous weapons, drone swarms, and precision-guided munitions. U.S. federal funding has long supported research in these areas due to their strategic importance.

Researcher 6, a professor at the University of Texas at Arlington, has received over $12 million in federal funding since 1982 from agencies including the National Science Foundation, Army Research Office, Office of Naval Research, and Air Force Office of Scientific Research.[152] His work focuses on control theory, neural networks, and robotics—all fields with clear dual-use potential.

While receiving federal funding, Researcher 6 built extensive ties with Chinese institutions, participating in the PRC's Thousand Talents Plan[153] as well as other PRC talent recruitment initiatives like the 111 Project[154] and the 985 Project at Northeastern University of China.[155] Through these programs, he has collaborated closely with Chinese universities supervised by the PRC's State Administration of Science, Technology and Industry for National Defense, including Shanghai Jiao Tong University, Beihang University, Harbin Engineering University, and the University of Electronic Science and Technology of China. [156]

He also taught at least seven courses and workshops at Chinese institutions between 2015-19, some funded by PRC government programs and others by U.S. federal grants.[157] For instance, in May 2016, he delivered a course on "Optimal Control Design" at Northeastern University of China, using materials that referenced U.S. Army Research Office funding.[158] He has also received recognition for his work, including the Liaoning Friendship Award, reflecting the extent of his involvement in Sino-U.S. academic exchanges in strategic technology fields.[159]

Lastly, Researcher 6 collaborated extensively with a professor from Beihang University, hosting him for a year and co-authoring multiple papers. The Beihang professor specializes in flight control systems, and he has direct affiliations with Chinese military and space programs, serving as Deputy Chief Designer for major Air Force projects and supervising the 'Beihang-4' near-space vehicle project.[160] Their joint research, funded by U.S. and Chinese sources, covered topics including drone swarm control, underwater drone coordination, satellite formation control, and advanced aircraft maneuvering techniques.[161]

According to UT Arlington, the university interviewed Researcher 6 during a 2019 review related to foreign influence to discuss his participation in the talent plan and broader activities with PRC entities. The university advised and encouraged him to discontinue such activities. The university stated that Researcher 6 thereafter cut ties with the talent program and discontinued his travel to the PRC and confirmed that he has not traveled to the PRC for several years.[162]

Following those measures, Researcher 6 has secured several recent Department of Defense grants. These include a $750,000 award from the U.S. Army (2020-2023) to study military team operations in complex networked environments,[163] an $815,019 grant from the U.S. Navy (2018-2022) aimed at developing performance guarantees for multi-agent systems like drone swarms,[164] and $30,000 from the Army (2019) to organize a workshop on reinforcement learning near the Army Research Laboratory.[165]

Jamestown Foundation Study Reveals U.S. Army-Funded Researcher Now Leading PRC Chipmaking

In an August 2024 report, Jamestown Foundation expert Sunny Cheung revealed that a scientist formerly funded by the U.S. Army was recently selected to lead a new, third generation semiconductor chip production line for the PRC.[1] The production line is part of the PRC's strategic effort to bypass U.S. export control restrictions on first-generation (silicon-based) semiconductors and leapfrog past the U.S. in semiconductor technology. The new production line aims to develop third-generation chips like Gallium Nitride (GaN) epitaxial wafers and the associated light emitting diode (LED) technology "essential for the advancement of third-generation semiconductor technologies."[2]

While at Boston University, the researcher had conducted photonics research with a particular focus on GaN and LED technologies. He worked on multiple U.S. Army grants related to these technologies during this time—grants that specifically acknowledged the use for critical defense applications.[3] He then went on to commercialize his research via a company called RayVio. RayVio went out of a business a few years later after a federal court in California ruled that RayVio had infringed on a competitor's patent.[4] The researcher now lends his expertise to the PRC's efforts to leap ahead of the U.S. in these technologies.

[1] Sunny Cheung, *Scientist at Forefront of US Army Research Selected to Lead PRC's Strategic Chip Production Line*, CHINA BRIEF: THE JAMESTOWN FOUND. (Aug. 8, 2024, 4:33 P.M.), https://jamestown.org/program/scientist-at-forefront-of-us-army-research-selected-to-lead-prcs-strategic-chip-production-line/.

III. U.S.-PRC JOINT EDUCATIONAL INSTITUTES FACILITATE CHINA'S MILITARY MODERNIZATION AND HUMAN RIGHTS ABUSES

Beginning in the early 2000s and accelerating over the last ten years, Chinese universities have increasingly sought partnerships with U.S. universities,

including the establishment of joint educational institutes between U.S. and PRC research universities.

These institutes pair prestigious U.S. universities with Chinese counterparts under the guise of academic cooperation, but in practice, they serve as sophisticated conduits for transferring critical U.S. technologies and expertise to the PRC, including to entities linked to China's defense and security apparatus. We illustrate this issue by examining three joint U.S.-PRC research institutes—Tsinghua-Berkeley Shenzhen Institute (TBSI), Georgia Tech Shenzhen Institute (GTSI), and Sichuan University-Pittsburgh Institute (SCUPI).

These joint institutes create a sophisticated mechanism for transferring sensitive research and technologies and the expertise that undergirds both to the PRC. Under a typical arrangement, participating American academics—some receiving DOD research funding—spend significant time (often at least eight weeks a year) at a joint institute in the PRC. There, they conduct research, advise PRC scholars, teach and train students, and collaborate with PRC companies on their areas of expertise—frequently, critical and emerging technologies with national security implications. While doing so, academics typically maintain their U.S. institutional affiliations, and many continue to lead U.S. federally funded R&D projects. This creates a direct pipeline for the transfer of sensitive research, applied knowledge, and technologies to the PRC.

As concerns over the security risks of these partnerships grow, universities like Georgia Tech and UC Berkeley have begun to reevaluate their involvement. In a significant move, Georgia Tech recently decided to terminate its relationship with Tianjin University, highlighting the increasing recognition of the dangers these collaborations pose to U.S. national security.[166] Berkeley also informed the Committees that it has begun the process of relinquishing all ownership in TBSI. This action serves as an example for other institutions to carefully assess their own joint ventures with PRC universities and consider the broader implications. The next section will outline how TBSI, GTSI, and SCUPI have served as prime examples of this concerning trend.

A. How the CCP Exercises Control Over Joint Educational Institutes

The PRC officially promotes joint institutes and programs between the PRC and foreign universities as a means to "introduce high-quality foreign educational resources" to the PRC.[167] But by law and in practice, they are designed to favor Beijing's interests. Beijing has established over 1,500 collaborations with more than 300 U.S. universities, among other entities.[w] Notably, 21 of these U.S.-PRC

[w] This sophisticated system, designed to advance the PRC's technological capabilities, encompasses three forms of Sino-foreign collaboration: (1) joint educational institutes with legal status (standalone joint universities), (2) joint educational institutes without legal status (secondary colleges within existing Chinese universities), and (3) joint educational projects (the most common type, involving joint

partnerships are joint institutes that are predominantly focused on STEM fields critical to military and economic superiority.[168]

Unlike American institutions, PRC universities operate subject to the control of the PRC government. All three of the PRC universities partnering in the joint institutes—Tsinghua University, Tianjin University, and Sichuan University—are jointly administered by the SASTIND and Ministry of Education, which, as noted above, is an arm of the Chinese government whose stated purposes include "strengthen[ing] military forces with additional personnel and more advanced equipment."[169] Both Tianjin University and Sichuan University are blacklisted by the Commerce Department, [170] and Tsinghua University has a documented history of serving the PRC's national security and defense apparatus, including involvement in defense research and alleged cyberattacks targeting various international entities.[171]

The CCP ensures its dominance by establishing control over the institutes' governance, academics and curriculum, and research agenda, and by leveraging its influence through financial contributions.[x]

Governance: Under Chinese law, these joint institutes are designed to ensure CCP control and to benefit PRC students.[172] Joint institutes must be controlled by boards or management committees with a Chinese majority.[y,173] This allows PRC representatives to outvote U.S. partners on key decisions, effectively ceding strategic control to Chinese interests. And by law, the partnerships must "target" Chinese citizens as the primary beneficiaries.[174] Local authorities retain the power to select foreign institutions for cooperation, effectively transforming these "collaborations" into conduits for advancing China's interests.[175]

Curriculum and Academics: PRC law also grants the government the ability to meticulously shape curriculum and the institute's research agenda to serve the Party's goals. Every aspect of foreign educational input, from textbooks to syllabi, must pass through the Party's ideological filter.[176] The PRC's Higher Education Law mandates that each institute establish a CCP cell, and that the Party committee "exercise unified leadership over the work of the institutions" and

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programs in specific fields). These are formally known as: Sino-foreign cooperative educational institutions with legal entity status (具有法人资格的中外合作办学机构), Sino-foreign cooperative educational institutions without legal entity status (不具有法人资格的中外合作办学机构), and Sino-foreign cooperative educational projects (中外合作办学项目).

[x] This comprehensive framework regulates the organization, content, and outputs of joint institutes, "strengthening the dominant position of Chinese educational institutions" and "resolutely implementing national education policies" while facilitating the transfer of knowledge and technology to support the PRC's economic and military goals. *Opinions of the Ministry of Education on Several Issues Concerning Chinese-Foreign Cooperation in Running Schools [教育部关于当前中外合作办学若干问题的意见]*, MINISTRY OF EDUC. FOREIGN AFFS. SUPERVISION INFO. NETWORK (Feb. 7, 2006), https://web.-archive.org/web/20240528034259/https://www.crs.jsj.edu.cn/news/index/1.

[y] TBSI's Governing Board consists of 7 PRC Members—four from Tsinghua University and three from the Shenzhen Municipal Government—and four from Berkeley. Similarly, GTSI's Joint Management Committee had eight members, with a 5-3 PRC majority: two Shenzhen government officials, and three Members each from Tianjin University and Georgia Tech. Documents on File with Select Committee.

prioritize "ideology and political performance" in faculty appointments and student evaluations.[z,177]

Research Agenda: Perhaps most alarmingly, many of these institutes—including those below—closely align their research focus areas with the CCP's strategic priorities in defense, critical, and emerging technologies. TBSI's portfolio includes smart grid technology, sensors for the Internet of Things, high-speed nano-lasers, LIDAR and 3D imaging systems, and novel photonic integrated chips.[178] GTSI concentrates on microelectronics, artificial intelligence, quantum information science, and advanced manufacturing.[179] These fields directly correspond to technologies crucial for the PRC's military and economic competitiveness, as outlined in the PRC's 13th and 14th Five-Year Plans.[180] By channeling research efforts into these strategic domains, these joint institutes function as de facto extensions of the PRC's own technological advancement program.

Financial Support: Financial control is exercised through government funding.[181] The PRC government provides substantial financial backing and policy incentives for universities involved in these joint institutes to attract talented overseas researchers.[aa,182] Furthermore, the Chinese government restricts how these funds can be used. For example, GTSI's agreement stipulates that its allotted funds "may not be used for anti-governmental activities against the People's Republic of China," a broad restriction on academic freedom to protect the Party's interests.

B. Tsinghua Berkeley Shenzhen Institute

In 2009, top officials from Tsinghua University stopped in at Berkeley with the express purpose of "recruit[ing] high-level overseas talents"—CCP speak for acquiring advanced technology expertise.[183] A few years later in 2015, Berkeley, the Shenzhen government, and Tsinghua University agreed to establish TBSI in Shenzhen. Tsinghua University and the Shenzhen government have since poured millions of dollars into the Institute. Tsinghua University, one of the PRC's most prestigious engineering universities, is deeply embedded in the PRC's Military-Civil Fusion system and maintains deep ties to the PRC's defense ecosystem and the broader security establishment.

In the years since, TBSI has brought dozens of Berkeley faculty to the PRC, where they work as "core principal investigators," conducting advanced research and training TBSI graduate students in critical and emerging technologies.[184]

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[z] GTSI's Party Committee is enshrined in the institute's Articles of Association. *See* GTSI Articles of Association, Article 23 (Dec. 11, 2019) (on file with Select Committee).

[aa] For GTSI, the Shenzhen Municipal Government committed a Special Purpose Fund in the amount of $7 million and an initial start-up fund of $1.6 million, with additional contributions of $1.54 million and $28,000 from Tianjin University and Georgia Tech, respectively. For TBSI, the Shenzhen government committed $52 million in 2014, scaled up to at least $220 million in 2018, with Tsinghua University contributing $19 million. *See* Documents on File with Select Committee. Note: 0.14 USD per 1 RMB.

TBSI's research areas align extremely closely with the PRC's science and technology development priorities outlined in the 13th Five Year Plan, including artificial intelligence, semiconductors, and cybersecurity.[185]

TBSI taps into advanced American technological knowledge and practical know-how—often developed with U.S. government and, specifically, U.S. military funding—and facilitates the transfer of that expertise and technological know-how to entities with deep links to the PRC's defense and security ecosystems. Many of TBSI's major collaborators and backers at Tsinghua University are either directly embedded in the PRC's system of civil-military fusion or supplying technology to the PLA. Given Tsinghua's own links to the PRC's defense and security ecosystems, this should be no surprise.

"We identified dozens of collaborations between TBSI or TBSI researchers and PRC entities blacklisted by the U.S. government and entities that are direct PRC military suppliers."

The Institute facilitates this transfer in part through institutional collaborations and individual research collaborations with entities linked to the PRC military and human rights abuses. As detailed below, we have identified dozens of collaborations between TBSI or TBSI researchers and PRC entities blacklisted by the U.S. government and entities that are direct PRC military suppliers. We also found hundreds of research collaborations between TBSI researchers and researchers at the PRC's military universities and defense universities, such as the Seven Sons of National Defense.

"We found hundreds of research collaborations between TBSI researchers and researchers at the PRC's military universities and the Seven Sons of National Defense."

Perhaps even more concerning, TBSI is dedicated to the "industrialization of scientific research results" and technology transfer.[186] The Institute's focus on dual use research, industrialization, and its robust relationship with the PRC's security and defense ecosystems raise serious concerns that the technologies developed at TBSI are actively facilitating China's military modernization and its human rights abuses.

In response to these alarming findings, the UC Berkely is "in the early stages of unwinding the joint legal entity." Specifically, UC Berkeley has told the Committee that it "has started the process of relinquishing all ownership in the separate legal Tsinghua Berkeley Shenzhen Institute," a step in the right direction.[187]

1. Research Collaborations with PRC Defense Entities

Chinese Companies Designated as National Security Threats: TBSI researchers have collaborated with Huawei, BGI, and ZTE—firms restricted by the

U.S. government for ties to the PRC's military-industrial complex and surveillance programs—with research occurring as recently as 2024.[bb]

Huawei is a U.S. government-designated Chinese military company with a track record of intellectual property theft and espionage.[cc] [188] TBSI researchers have worked with Huawei's Noah's Ark Lab, which is focused on artificial intelligence and data mining, as well as Huawei subsidiary HiSilicon.[189] Huawei and TBSI have conducted joint research dozens of times since 2018, with most research occurring after 2021.[190] TBSI has also worked with telecommunications company ZTE, which, like Huawei, cannot import or sell new equipment in the U.S. due to national security risks.[191]

"TBSI researchers have collaborated with U.S. government- designated CCP military companies including Huawei, BGI, and ZTE … as recently as 2024."

TBSI has also worked with researchers from BGI, including a director of blacklisted subsidiary BGI Research (and BGI Group more broadly) and previously served as director of China's National Gene Bank.[192] BGI reportedly collected the genetic data of millions of women who used their prenatal test—including some outside China itself—and uploaded it to the GeneBank.[193] BGI has also conducted research alongside the PLA. BGI subsidiaries, including BGI Research, are on the Commerce Department's Entity List because of their collection and analysis of genetic data, which "present a significant risk of diversion to China's military programs."[194]

PLA-Linked and Human Rights Abuser Tsinghua Tongfang Co. Ltd. (Tongfang): TBSI has also built a deep partnership with PLA supplier Tongfang and its subsidiaries. TBSI and its sister institute Tsinghua Shenzhen International Graduate School (TSIGS) signed a formal cooperation agreement with Tongfang and a PRC municipal government in 2018 focused on the industrialization of research.[195] TBSI also signed a sponsored research agreement worth $19 million with a Tongfang subsidiary that granted the company "priority conversion of intellectual property rights generated by" TBSI.[196] [197] Tongfang has also held significant sway over TBSI's influential industrial advisory board: Tongfang itself held a seat on the board[198] and the chairman of a subsidiary served as co-vice chairman of the board at the same time.[199]

[bb] Huawei is on the Non-SDN Chinese Military-Industrial Complex Companies List and Entity List. Certain BGI affiliates are on the Entity List due to genomic data collection concerns. ZTE was previously listed. All face severe U.S. export and investment restrictions under various laws and executive orders. See Exec. Order No. 13,959, 85 Fed. Reg. 73,185 (Nov. 12, 2020); 15 C.F.R. § 744 (2023); John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, § 889, 132 Stat. 1636, 1917 (2018). UC Berkeley stated that UC established a systemwide moratorium on Huawei projects and engagements in July 2019.

[cc] The company was added to the Commerce Department Entity List in 2020 and was designated a CCP military company by the DOD.

Tongfang connects Tsinghua University's research apparatus—including TBSI—to the Chinese military and is implicated in the CCP's human rights abuses.[200] Tongfang bid on a PLA project at least as recently as 2022, and its wholly owned subsidiaries are registered military suppliers with dozens of bids on military contracts.[201] Wholly-owned Tongfang subsidiaries have contracted with the PLA's Strategic Support Force, the PLA Navy, and the Armed Police Forces. Another majority owned subsidiary is a registered military supplier that was placed on the Commerce Department's Entity List for impeding "U.S. efforts to counter illicit international trafficking in nuclear and other radioactive materials."[202]

"Tongfang connects Tsinghua University's research apparatus—including TBSI—to the Chinese military and is implicated in the CCP's human rights abuses."

Tongfang is also tied to the CCP's human rights abuses. It is the majority owner of a company placed on the Commerce Department Entity List for its role in "human rights violations and abuses in the implementation of China's campaign of repression, mass detention, and high-technology surveillance against Uyghurs, Kazakhs, and other members of Muslim minority groups in the Xinjiang Uyghur Autonomous Region (XUAR)."[203]

China Electronics Technology Group and Pengcheng Laboratory: TBSI researchers have also worked alongside PLA-affiliated research institutes or laboratories, including the blacklisted China Electronics Technology Group Corporation and the Pengcheng Laboratory.[204] The Pengcheng Laboratory works with entities that conduct research or produce weapons for the PLA, including China Aerospace Science and Industry Corporation, China Aerospace Science and Technology Corporation, the National University of Defense Technology, and others.[205] The lab is focused on top PRC priorities including artificial intelligence (for example, the lab has developed large language models with Baidu and Huawei), cybersecurity, and telecommunications (6G).[206] TBSI researchers have published alongside the lab dozens of times, including on subjects such as defending against cyberattacks and underwater wireless sensor networks.[207] One TBSI professor who is also affiliated with the TBSI RIOS lab and Pengcheng has conducted research on AI that can recognize someone by their gait, research that can support surveillance and human rights abuses.[208]

Dual-Use Research with Sister Institute TSIGS: TBSI and TSIGS are closely interconnected institutions. TSIGS was established in 2018, "expanding on the foundation of the Shenzhen Graduate School and Tsinghua-Berkeley Shenzhen Institute."[209] The two entities have a formal research partnership[210] and share leadership: TBSI China's co-director also serves as a Vice President at TSIGS.[211] Their collaboration extends beyond formal ties, with shared professors and joint conferences on dual-use technologies and military-civil fusion. TSIGS is characterized as "an important part of Tsinghua University's global strategy," and was "established as an expansion based on the Shenzhen Graduate School and the Tsinghua-Berkeley Shenzhen Institute" that is committed to becoming an important force in building Shenzhen's international higher education system."[212]

TSIGS aggressively works to advance Military-Civil Fusion, budgeting for military-civil integration research projects. In 2023, TSIGS set aside 9.3 million RMB, or $1.3 million, for activities including "conducting research on military-civilian integration projects," "the research and development of aircraft ground support subsystems," projects related to robotics, and more.[213] TSIGS has also been credited by the CCP-controlled press with playing an "irreplaceable role" in helping the PRC overcome "chokepoint challenges in the arenas of research and development for military and defense" technologies.[214] Tsinghua University touted this report—but when TSIGS itself republished the report in English, it notably omitted the references to military and defense R&D, indicating a desire to obscure that military-focused role from TSIGS international audiences.[215]

TBSI and TSIGS have conducted dual use research together, openly acknowledging the military applications. For example, one joint project focused on high-speed underwater optical wireless communication. The authors tout the technology's "military usage," explaining that "established underwater communication system can support information transmission between submarines, ships and submarines, ships and frogmen."[216]

Commercialization Contract with PLA and Police Contractor Visbody Technology: TBSI's first contract after establishing its Technology Transfer Office was with Visbody Technology, which supports China's military and police forces and openly advertises its role in "the development of military-civil integration" in the PRC.[217] In a press release, TBSI touted that Visbody works on "research of human body 3D reconstruction technology and deep learning algorithms," from facial to body recognition.[218] According to Visbody's website, its "smart military camp soldier health monitoring solution" is sold to China's Armed Police Forces.[219] Visbody also runs a joint AI research institute with Xi'an University of Electronic Science and Technology,[220] which heavily engaged in defense research and hosts several major defense laboratories.[221] In addition, Visbody presented at an artificial intelligence conference alongside Chinese AI firms iFlyTek and SenseTime, both

of which are blacklisted by the U.S. government for their role in the Uyghur genocide and other human rights abuses.[222]

TBSI Hosts the PRC's AI-Driven Talent Acquisition Platform

TSBI and Tsinghua SIGS are playing an instrumental role in building and maintaining a large, PRC government-funded AI-based intelligence platform known as "Supermind" to track millions of researchers and scientists around the world and recruit individuals with advanced technical expertise for the PRC. Operating from TBSI's Shenzhen facility, the International Science and Technology Information Center (ITIC) runs the "Supermind" platform in coordination with Tsinghua SIGS, with $280 million investment mostly from the Shenzhen government.[1] ITIC boasts the use of AI models to analyze major global academic databases to identify the cutting edge technological development trends in eight key areas: "synthetic biology, blockchain, cells and genetics, aerospace, brain science and brain-inspired intelligence, deep earth and deep sea, visible light communications and optical computing, and quantum information," and openly touts its ability to conduct deep intelligence analysis.[2] A research security expert has pointed out that the word "intelligence" suggests "'information of use to the state' between classified intelligence and open source."[3]

The platform is designed to help the PRC identify and recruit top scientists and technologists, especially in PRC government-defined "chokepoint technologies,"[4] and may be used to target foreign laboratories to gain access to specific technology or know-how.[5] The fact that a platform designed to advance the PRC's malign talent recruitment activities is housed at a Berkeley facility is deeply troubling.

[1] *Company Profile,* INT'L SCI. & TECH. INFO. CTR., https://vip.itic-sci.com/talent/index/aboutus (last visited Sept. 4, 2024); Didi Kirsten Tatlow, *China's New AI 'Supermind' Deepens Challenge to U.S.*, NEWSWEEK, https://www.newsweek.com/china-us-conflict-artificial-intelligence-espionage-struggle-ai-computer-science-1873990 (Feb. 29, 2024, 5:14 A.M.)
[2] INTERNATIONAL SCIENCE AND TECHNOLOGY INFORMATION CENTER: INTRODUCTION TO THE CENTER, https://cset.georgetown.edu/wp-content/uploads/t0590_ITIC_intro_EN.pdf (translated Apr. 3, 2024).
[3] Tatlow, *supra* note 1.
[4] *Government*, INT'L SCI. & TECH. INFO. CTR., https://archive.ph/fGV3a (last visited Sept. 12, 2024).
[5] *See* Tatlow, *supra* note 1.

2. TBSI Researchers Advance Dual-Use and Military Technologies with PRC Defense-Linked Entities

Hundreds of Research Collaborations with PRC Defense Universities: TBSI researchers have also published hundreds of research papers with the PRC defense universities, especially the Seven Sons of National Defense, universities that spend a significant portion of their budget on defense research.[223] In addition, TBSI researchers have also conducted research directly with PLA universities.

TBSI faculty and students have collaborated with counterparts from the PRC's top defense universities on hundreds of research efforts, including sensitive research with potential military applications.

Several collaborations between TBSI and the Seven Sons of National Defense universities have clear, openly acknowledged military applications. (Many other projects may have less obvious defense applications.) For example, in February 2023, a TBSI student collaborated with aerospace researchers from a top PLA defense university on infrared target detection.[224] The research featured three individuals from the blacklisted Harbin Institute of Technology's Department of Aerospace Engineering and its Institute of Space Science and Applied Technology.

"TBSI faculty and students have collaborated with … the PRC's top defense universities on hundreds of research efforts, including sensitive research with potential military applications."

In another example, several TBSI researchers worked with researchers from Harbin on technology related to an underwater wireless sensor network. The first sentence of the introduction states that "underwater wireless sensor networks are widely studied in various military and commercial fields."[225]

Table 2 – TBSI-Seven Sons Research Collaborations

University[xxxvi]	**# of TBSI Publications**
Beihang University	81
Beijing Institute of Technology	42
Harbin Engineering University	18
Harbin Institute of Technology	107
Nanjing University of Aeronautics & Astronautics	17
Nanjing University of Science & Technology	25
Northwestern Polytechnical University in Xi'an	27

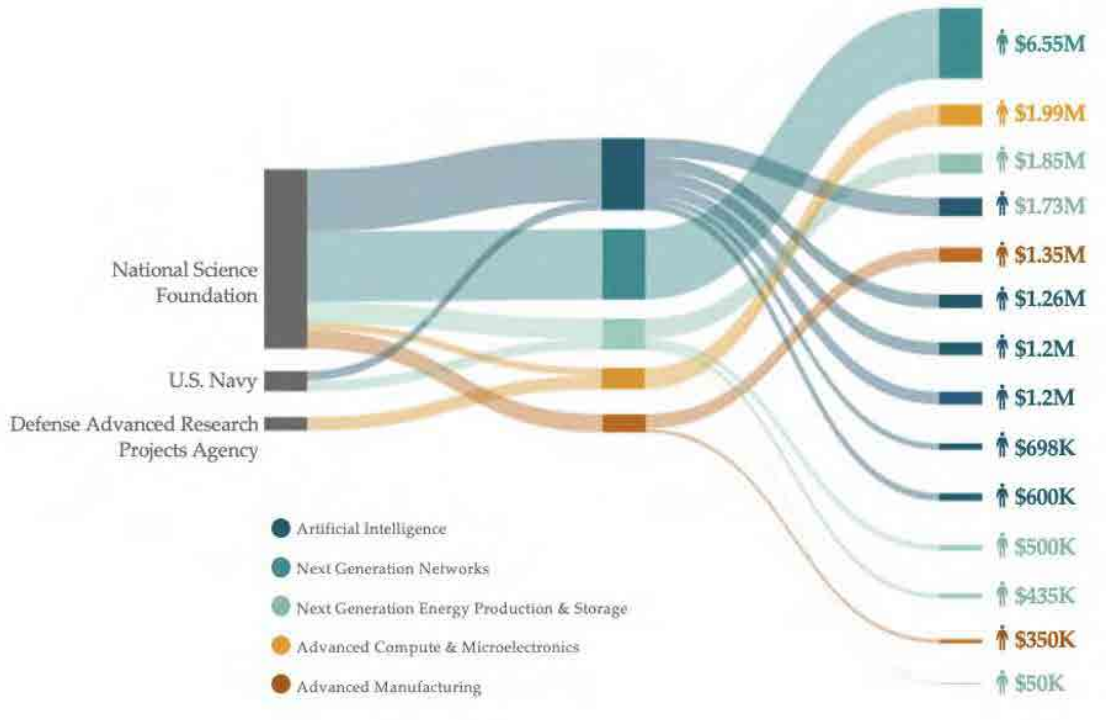
TBSI researchers have collaborated with researchers from the PLA's top research university, the National University of Defense Technology (NUDT). NUDT is directly subordinate to the Central Military Commission, meaning it falls under the first tier of institutions critical to the PRC's defense industrial research base.[226] Some research products involving TBSI scholars received funding from NUDT or the PRC's National Defense Basic Scientific Research Program.[227] Further, TBSI researchers have worked directly alongside the PLA on medical research, including neurological research.[228]

Federally Funded Berkeley Faculty Transfer Expertise to TBSI: These collaborations are particularly concerning because many of the Berkeley faculty who teach at TBSI have received extensive federal funding to support their advanced technology research. For example, a review of publicly available sources shows that fourteen Berkeley faculty who taught at TBSI collectively worked on federal research grants worth more than $18.5 million while they were actively

teaching and working at TBSI. This funding came from the National Science Foundation, the U.S. Navy, and the DOD's Defense Advanced Research Projects Agency. The federal research grants focused on sensitive, emerging technologies including artificial intelligence, robotics, semiconductors, and advanced computing.

Chart 4 – Federal Funding to Berkeley Faculty While Working at TBSI, by Research Area

To illustrate the issue in greater detail: one of the professors TBSI recruited from Berkeley specializes in artificial intelligence and has received extensive funding from DOD. Since joining TBSI, the professor has simultaneously conducted research with the Tencent AI lab,[229] one of the PRC's major AI development centers, and Cloudminds,[230] which was blacklisted over its ties to the PLA in 2020.



The Berkeley researcher's placement at TBSI is especially disconcerting because of Tsinghua University's focus on the military applications of AI.[231] For example, the university planned to build a laboratory specifically for military AI, in addition to a laboratory focused on emerging technologies and military-civil fusion.[232] TBSI's leveraging U.S. professors to conduct AI research in the PRC is likewise concerning because it runs directly counter to steps the U.S. government has taken to curb U.S. contributions to the PRC's AI advancements, such as through export controls and investment restrictions.

Another professor who received millions in federal funding while teaching at TBSI—including $1.2 million in DARPA funding—collaborated with researchers at PRC defense universities on insect-scale fast moving robots, a technology with

clear military applications. The TBSI professor's research partners included a professor at Seven Sons university Beihang (who also conducted research with a subcommittee of the Central Military Commission[233]) and a graduate researcher who is now at the DOD-blacklisted University of Electronic Science and Technology.[234]

Those TBSI professors are not alone. A review of publicly available information revealed that TBSI professors and students are actively engaged in the conduct of research with military and defense-related applications, including research on cyberattacks,[235] the space-air-ground integrated network,[236] infrared technology, [237] semiconductor lasers, [238] sensors for skin-mounted electronics, drone navigation,[239] and attacks on internet of things-based systems.[240]

TBSI Leverages a Blacklisted, PLA-Linked Supercomputing Center

It appears that TBSI leverages a blacklisted, PLA-linked supercomputing center for advanced AI research. According to public reporting, TBSI appears to have contracted with the National Supercomputing Center (NSCC) Guangzhou for multiple research projects.[1] As TBSI itself acknowledges, NSCC's claim to fame is the Tianhe-2 supercomputer, which was developed by a blacklisted PLA university and is used for nuclear explosive activities.[2] NSCC has been on a U.S. blacklist that prohibits exports or in-country transfers since 2015. TBSI sought contracts with NSCC in 2017, 2019, and 2020.

[1] *See Public Notice on Soliciting Opinions on Single-Source Procurement of Large-Scale Cluster Computer Services and Corresponding System Software and Hardware Technology Services*, TSINGHUA-BERKELEY SHENZHEN INST. (Mar. 25, 2020), https://www.tbsi.edu.cn/2020/0325/c4757a27295/page.htm.
[2] Addition of Certain Persons to the Entity List; and removal of Person From the Entity List Based on a Removal Request, 80 Fed. Reg. 32 (Feb. 18, 2015).

In addition, TBSI researchers have worked repeatedly with Tencent on AI research, even as the U.S. government has sought to restrict U.S. contributions to the PRC's AI development.[241] The PRC views AI as a technology critical to the coming era of "intelligentized" warfare. In addition to publishing dozens of research products together, TBSI hosted a month-long seminar series with Tencent AI lab that aimed to bring scientists and researchers to the PRC to explore cutting-edge AI issues.[242]

3. TBSI's Influential Industrial Advisory Board Includes Numerous Blacklisted Chinese Companies

TBSI's Industrial Advisory Board (IAB or the Board), which helps the Institute set its research agenda and strengthen ties with Chinese industry, is led by Chinese companies that are today blacklisted by the U.S. government for their role in China's military modernization or human rights abuses. [243] The presence of blacklisted entities on TBSI's industrial advisory board is especially concerning because of TBSI's focus on commercializing research. The composition of the IAB,

along with the fact that TBSI scholars have repeatedly worked alongside blacklisted IAB members on research, further suggest that the Institute is facilitating commercialization of technologies for these PLA-linked entities.

According to the most recent publicly available information about the Board, it includes representatives from blacklisted companies Huawei, DJI, and ZTE, as well as other Chinese companies linked to the PLA or to China's surveillance state. Like Huawei, Chinese telecommunications company ZTE has been blacklisted for its role in the PRC surveillance state and is barred from U.S. government networks because it is a security threat.[244] DJI, another Chinese military company, has provided drones to the Xinjiang Public Security Bureau used in repressing the Uyghur minority.[245]

Board members also include an offshoot of blacklisted PLA defense conglomerate AVIC (which is developing China's 6th generation stealth fighter),[246] with whom TBSI reportedly entered into a strategic cooperation agreement to establish a class in control engineering. Other members include Tsinghua Unigroup (which owns U.S. government designated Chinese military company YMTC),[247] and another Tsinghua University research institute that explicitly promotes Military-Civil Fusion and founded a joint research center with blacklisted Chinese military aerospace company COMAC.[248] Tencent, a leading PRC AI company, is also a board member. Another board member, Lens Technology International, has been linked to Uyghur forced labor.[249]

4. TBSI Hosts Conferences with PLA-Affiliated Entities on Sensitive Technologies

TBSI hosts conferences on sensitive technologies that convene PLA-linked entities, further solidifying the Institute's role in the PRC's system of military-civil fusion. For example, TBSI has held graphene forums every year that feature PLA-linked companies and universities. Coverage of the 2018 forum on TBSI's website notes that the city of Shenzhen, which is "guided by Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era," has deeply prioritized graphene research and industrialization. TBSI organized the forum alongside Tsinghua's graduate school, a Shenzhen graphene research center, and the Chinese Academy of Sciences' Institute of Metal Research, which has described itself as a "development platform for military-civilian integration."[250]

That conference, like those before it, featured attendees from PRC defense-focused universities, the Chinese Academy of Sciences, and graphene companies that explicitly tout their role in military-civil fusion. For example, a sponsor of the 2018 forum helped establish the "Beijing-Tianjin-Hebei Military-Civil Integration Graphene Industry Development Alliance." That sponsor, known as Tangshan Jianhua Industrial Group, also signed an agreement establishing a "defense aerospace materials research institute" with another company.[251] Tangshan Jianhua and another forum sponsor, Hongna New Material Technology, both participated in a 2016 "matchmaking in the military industry" event alongside top PLA agencies and universities. PRC media described the event as "of great

significance to increasing the application of graphene materials in the field of national defense."[252]

Numerous other forum attendees also have PLA ties, including several representatives from graphene companies that are devoted to Military-Civil Fusion and attendees from the PRC's top defense universities such as Beihang University and the Harbin Institute of Technology.[253]

In addition to graphene conferences, TBSI helped host and is involved in a nanotechnology society that features PLA-linked companies and universities.[254] One of the group leaders is a representative from the Institute of Advanced Technology at the Chinese Academy of Sciences, which has hosted Military-Civil Fusion competitions and has signed multiple Military-Civil Fusion agreements.[255] That institute partnered with a PRC shipbuilding institute to stand up the Shenzhen Military-Civilian Integration Research Institute.[256] Another group leader—PRC chipmaker Shenzhen Guowei Electronics—holds the PRC equivalent of a security clearance and sells chips to a host of PLA suppliers including a U.S.-government designated Chinese Communist Military Company.[257] Still another group leader is the dean of the School of Mechanical and Electrical Engineering and Automation at Harbin Institute of Technology, a Seven Sons institution.

C. Georgia Tech Shenzhen Institute

Evolving from a 2009 summer program, Georgia Tech and Tianjin University launched a joint graduate program in electrical and computer engineering in Shenzhen in 2014,[258] followed two years later by a memorandum of understanding to establish a joint institute, signed by Shenzhen's mayor and the Presidents of Tianjin University and Georgia Tech.[259]

GTSI has played a strategic role in Shenzhen's vision for "world-class universities" and international collaboration in cutting-edge fields like electrical engineering and signal processing, ultimately advancing the PRC's national goals by building "collaborative innovation models" that bridge "military and civilian science and technology."[260] The institute and degree program were envisioned as a critical platform for the PRC's Military-Civil Fusion strategy, where GTSI would facilitate "[r]esearch, technology transfer and business incubation activities." Through partnerships with Tianjin University and PLA-linked talent programs,[261] GTSI has contributed to the PRC's strategic goals by facilitating advanced training in fields such as signal processing and advanced communications relevant to both civilian and military technologies, collaborations and information sharing related to dual-use technologies, and partnerships with concerning entities, raising concerns about the transfer of sensitive knowledge from the United States to a strategic competitor.[262]

Recognizing the national security threat posed by GTSI's activities and degree programs, Georgia Tech made the decision to end its partnership with Tianjin University.[263] This move reflects a necessary response to the broader concerns about how dual-use research, particularly in fields like signal processing and

advanced communications, could be exploited by foreign adversaries. Georgia Tech's action underscores the importance of protecting U.S. research from being leveraged for military advancements by strategic competitors, and should be emulated by other universities.

The following examples illustrate just how critical this decision was. GTSI had served as a direct conduit for transferring advanced technological knowledge and practical know-how—developed through U.S. government and military funding—to Tianjin University, a blacklisted institution with known ties to the PRC's defense apparatus. Given these circumstances, this development is not surprising because such transfer is the goal of the Shenzhen government.

1. Federally Funded Georgia Tech Researchers Train GTSI Students on Dual Use Technologies

Through GTSI, dozens of professors who have tapped federal funding to pursue advanced technological expertise have taught and trained PRC researchers in the same areas for which they have received federal funding. Many of these professors have received research funding from DOD components, including the Navy, the Air Force, and DARPA, among other federal entities.

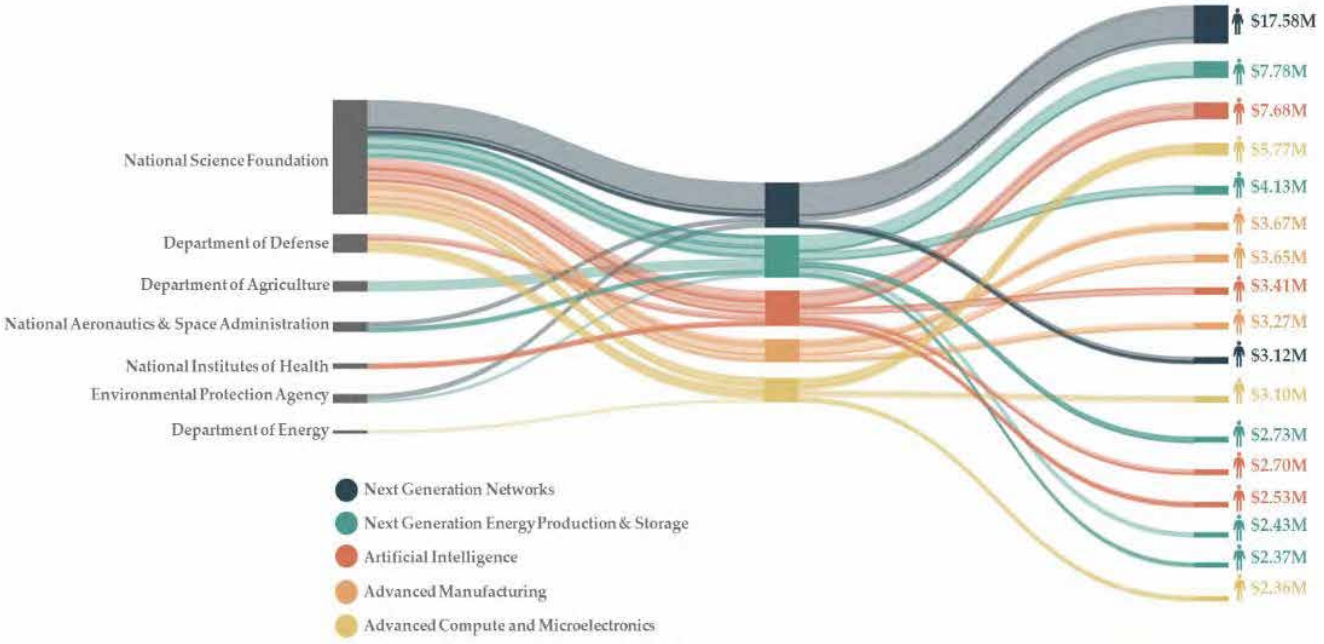
"At least nine prominent Georgia Tech faculty members who taught at GTSI between 2018-2024 collectively managed over 140 federal grants."

To illustrate the scope: nine prominent Georgia Tech faculty members who taught at GTSI between 2018-2024 collectively managed over 140 federal grants. These grants, spanning from 2005 to 2027, cover a range of sensitive technologies that have potential military applications. Notably, at least 65 of these grants were active while the faculty member taught at GTSI. GTSI therefore has acted as a pipeline for knowledge transfer from federally funded researchers to an institution at a blacklisted Chinese university.[264]

Consider the following examples: One Georgia Tech professor instructed GTSI graduate students on signal analysis and integrated optics—while holding 36 U.S. federal grants, including grants from multiple defense agencies.[265] These techniques are crucial for processing signals and light, enabling technologies like high-speed internet and military surveillance systems. A second professor trained PRC students in technologies crucial for autonomous weapons, while holding 35 grants from NSF and the Office of Naval Research.[266] A third instructed PRC students on cutting-edge electro-optics and nanophotonics, technologies with the potential to advance China's directed energy weapons capabilities. He holds nine grants from NSF and the Office of Naval Research.[267]

"A second professor trained PRC students in technologies crucial for autonomous weapons, while holding 35 grants from NSF and the Office of Naval Research."

Chart 5 – Federal Funding to Georgia Tech Faculty While Collaborating with GTSI or Georgia Tech-Shenzhen, by Research Area



Another Air Force-funded professor taught signal processing—used in everything from cell phones to radar systems—at GTSI in 2018, while he was completing his Air Force-funded research on the same subject.[268] A professor who taught satellite communications and navigation systems in 2022 and 2023 received Air Force funding in the years prior to joining GTSI to conduct research on the same subject.[269]

These examples are merely illustrative; dozens of additional, federally funded Georgia Tech professors trained GTSI graduate student researchers on advanced technologies that have potential to help the PRC achieve military advancements and dominate critical technology chokepoints.[dd,270]

2. Georgia Tech and GTSI Hosted Conferences that Advanced the PRC's Defense Objectives

GTSI has also served to advance Military-Civil Fusion through institute-level events, including high-profile conferences. For example, in late 2019, Georgia Tech and its Shenzhen campus hosted two high-profile conferences that served as thinly

[dd] At least six additional Georgia Tech professors who have trained GTSI students on the same technologies and topics for which they have received federal funding, providing instruction in areas including signal processing, machine learning, environmental engineering, and simulation. These fields are crucial for advances ranging from telecommunications and data analysis to secure communications and defense systems.

veiled platforms for advancing Beijing's strategic, defense objectives by emphasizing the integration of civilian research into defense applications.

CACRE 2019: Most troublingly, Georgia Tech, through GTSI, hosted the 4th International Conference on Automation, Control and Robotics Engineering (CACRE) in 2019 that emphasized specific technological domains with clear military implications, attracting broad participation from the PLA, the Sevens Sons of National Defense, and civilian entities that are deeply integrated into the PRC's military civil fusion efforts. The event was co-organized by Georgia Tech and the Hong Kong Society of Mechanical Engineers.

At the helm of CACRE 2019 was an academic who went on to lead the PRC efforts to align Hong Kong's research capabilities and capital with the Party's military modernization goals.[ee] [271] Zhang spearheaded efforts to integrate the formerly independent top university in Hong Kong into the broader PRC ecosystem by building collaborations with blacklisted entities like China Mobile, supporting the Belt and Road Initiative, and aligning the Hong Kong university's research capabilities with China's technological ambitions, among other initiatives.[ff,272]

"[The U.S.-blacklisted] Beijing Institute of Technology presented improvements in strapdown seeker technology for missile guidance[.]"

The conference attracted dozens of PRC military participants.[273] The Rocket Force University of Engineering presented research on intelligent military systems and hypersonic weapons,[274] while the PLA Strategic Support Force Information Engineering University showcased work on protecting AI systems from adversarial attacks.[275] The PRC's National University of Defense Technology contributed studies on critical infrastructure network security,[276] UAV formation control,[277] collision avoidance for fixed-wing UAVs,[278] and vibration analysis for logistics systems.[279] The PLA's Naval Engineering University researchers presented analysis on remote semi-active laser-guided projectiles.[280] Additionally, personnel from local PLA branches also collaborated with academia and industry. An Army Equipment Department researcher from Qiqihar partnered with Nanjing University of Science and Technology and PLA contractor Shanxi Limin Industries to optimize an ammunition supply truck's design using specialized software.[281] Another from Nanjing's Army Equipment Department worked with the same university to improve the efficiency of weapon recoil systems using artificial intelligence.[282]

[ee] The academic's subsequent career trajectory, including his move to Hong Kong University of Science and Technology (HKUST) and involvement in various cross-border collaborations, underscores his role in aligning Hong Kong's research capabilities with China's technological ambitions. Upon moving to HKUST in 2023, he moderated China Mobile's "Belt and Road" conference, accepted unmanned vessel donations, lectured at Chinese defense-linked universities, and hosted companies that are part of the Military-Civil Fusion enterprise. He led a Thai delegation on unmanned driving regulations, signed agreements with mainland institutions, and participated in high-level meetings with Chinese state-owned enterprises.

[ff] His activities exemplify a broader trend of mainland influence permeating Hong Kong's academic institutions, subtly reshaping their priorities and connections.

"[At the conference, China's] Rocket Force University of Engineering presented research on intelligent military systems and hypersonic weapons[.]"

The conference also drew broad participation from five of the Seven Sons defense universities, which are all blacklisted by the U.S. government. Nanjing University of Science and Technology presented on weapon systems design, fuze testing, and projectile transfer systems.[283] Beijing Institute of Technology presented improvements in strapdown seeker technology for missile guidance,[284] and Beihang University researchers showcased advancements in industrial robot calibration.[285] Harbin Engineering University contributed work on multi-target tracking algorithms for unmanned surface vehicles,[286] and Harbin Institute of Technology offered studies on ultrasonic gesture recognition and fault diagnosis for rotating machinery.[287]

Ostensibly civilian PRC research institutions also focused on military applications of the technologies examined, particularly those affiliated with the Chinese Academy of Sciences (CAS) and the Chinese Academy of Engineering (CAE). The CAS State Key Laboratory of Robotics at the Shenyang Institute of Automation presented six studies on advanced underwater and aerial robotic systems, including research on swarm behavior for underwater drones and coordinated movement of multiple underwater vehicles.[288] Notably, only two of these studies appeared in the public-facing document, with the others, including an award-winning presentation by Zhier Chen, withheld from publication, suggesting the sensitivity of the research to PRC leaders.[289] Other CAS institutes also made contributions on industrial and lunar robots, advanced sensors, UAV-mounted radar systems, and missile guidance enhancements. The Institute of Electronic Engineering, subordinate to the CAE, also presented methods for controlling unmanned surface vessels.[290]

Top Paper Advances PRC Maritime Robotics and Surveillance Capabilities

At the conference, a researcher at the Chinese Academy of Sciences won an award for his paper on a flying fish-inspired underwater glider. His design features flexible wings and can be launched from aircraft, allowing for efficient underwater gliding. This technology has clear military applications, particularly in underwater surveillance, and represents a significant advancement in China's marine robotics capabilities.

Zhier Chen, HONG KONG SOC'Y OF MECH. ENG'RS (2019), https://web.archive.org/web/20240723120000/https://www.smehk.org/PhotoGaller/html/?428.html.

This concentration of restricted entities and express military research at what was billed as a civilian academic conference underscores the PRC's systematic effort to leverage international collaborations for military advantage. It raises alarming concerns about the unintended transfer of sensitive technological expertise that could significantly enhance the PRC's military capabilities.

Sino-US Symposium on Emerging Engineering Education: Likewise, the Sino-US Symposium on Emerging Engineering Education convened key figures from institutions deeply involved in the PRC's defense-related research and

development. The symposium's centerpiece—the establishment of the "International Alliance for New Engineering Education"—brought together high-ranking officials from China's Ministry of Education and Georgia Tech, signaling a coordinated effort to reshape global engineering education. The PRC was placed in the leading role, with Tianjin University serving as the alliance's first rotating chair and secretary.[291]

The conference assembled senior academics who are deeply embedded in the PRC's defense industrial complex and Military-Civil Fusion enterprise. A keynote address was presented by a professor from Huazhong University of Science and Technology, which hosts six defense-oriented laboratories and collaborates directly with the PLA.[292] Another notable speaker from Tianjin University was a principal architect of the PRC's "New Engineering Education" initiative, a plan to integrate civilian research with strategic defense needs.[293]

Representatives from the Seven Sons universities and other defense-oriented establishments brought military and dual-use expertise to the table—ranging from insights in aerospace research to weapons systems to long-range missiles. Beihang University researchers presented cutting-edge aerospace research with clear military applications.[294] The Vice President of Beijing Institute of Technology shared insights based on decades of weapons systems expertise.[295] The President of Shenzhen MSU-BIT University offered lessons from Sino-Russian collaboration on high-tech engineering projects.[296] The blacklisted Harbin Institute of Technology sent experts in spacecraft control,[297] while Shanghai Jiao Tong University's Vice Provost shared knowledge in propellant management that is critical for long-range missiles.[298]

These conferences thus served to better align civilian research with the PRC's defense objectives, fostered close collaboration between military and defense researchers and professors at the forefront of technological development, and helped to advance the PRC's application of critical and emerging technologies in its military and surveillance ecosystems.

"'Seven Sons' universities and other defense-oriented establishments brought military and dual-use expertise to the table—ranging from insights in aerospace research to weapons systems to long-range missiles."

3. GTSI Links to PRC Problematic Companies and Advanced Technology Sector

Internship Programs. GTSI's internship program has established connections with a network of PRC companies, many of which harbor concerning ties to the country's defense and security apparatus. While studying at GTSI, students have participated in internships with these companies, and in at least 40 documented cases, students have received academic credit for these placements. This direct involvement raises significant concerns about the nature of the work students may be exposed to and the potential for knowledge transfer.

Alibaba and SF Express, prominent placement sites for GTSI interns, have concerning ties to the PRC's defense apparatus. Alibaba partners with the Zhejiang

Lab, which collaborates with numerous U.S.-sanctioned military institutions like the PLA's Information Engineering University and National University of Defense Technology on advanced research in quantum computing, AI, and autonomous systems.[299] The company has also developed mobile propaganda applications and provides surveillance technology in Xinjiang,[300] including facial recognition for ethnic minority detection.[301]

SF Express, which has hosted at least 50 GTSI students since 2017,[302] contracts with the PLA Air Force, participates in live military exercises, and has developed military-grade drones like the "Star Shadow" and "AT-200."[303] Additionally, SF Holding—the parent company of SF Express—signed a school-enterprise cooperation agreement with Georgia Tech, where, according to the agreement, "both parties will give full play to their respective professional advantages and scenario resources in the fields of artificial intelligence, big data, machine learning, supply chain, etc., focus on cooperation in the fields of technology and education, and establish a long-term, stable, mutually beneficial and win-win cooperation relationship."[304] This close relationship with both academia and the military underscores concerns about GTSI's involvement, especially given that SF Express' drones are now being used by the PLA in military exercises.

In the financial sector, Guosen Securities, another internship provider, actively invests in Military-Civil Fusion funds, directly supporting the PRC's defense initiatives.[305] Beijing Kuaishou Technology Co., Ltd., also part of GTSI's internship network, is owned in part by an entity that also has an ownership stake in sanctioned entities like China National Nuclear Corporation, linking it to China's nuclear weapons program.[306]

GTSI interns have also worked for PRC companies implicated in human rights abuses and in the PRC's bid to dominate the U.S. in AI. Tuzhan Intelligent Technology, another key player in GTSI's internship network, exemplifies the PRC's push to rival U.S. dominance in AI. The company's Open-Sora project, a collaboration with Peking University Shenzhen Graduate School, aims to replicate OpenAI's advanced text-to-video capabilities.[307]

Similarly, Intellifusion, co-founded by Georgia Tech alumni Chen Ning and Tian Dihong, produces AI software, neural network chips, and big data analytics solutions sold to public security bureaus across China for AI-enhanced police work.[308] Intellifusion is blacklisted by the U.S. Commerce Department for its role in human rights abuses in Xinjiang.[309] Since moving back to China, Chen Ning and Tian Dihong have taken "special care" to maintain close ties with their *alma mater*, not only by organizing "on-site observation[s]" and "exchange seminars" for Georgia Tech students in Shenzhen, but also by providing internship and employment opportunities for many Georgia Tech students.[310] Both alumni also serve on the board of the Shenzhen Georgia Institute of Technology Education Foundation, with Chen Ning as vice chairman.[311] This case exemplifies a broader trend where U.S.-educated alumni, particularly those who worked on government-funded research, return to the PRC and are now actively funneling sensitive technologies and expertise to the PRC's defense and intelligence

apparatus and maintaining ongoing recruiting and other links with their alma maters.

China Resources Angde Biotech Pharma Co., Ltd., another internship site, has links to industrial zones in Xinjiang associated with forced labor.[312] Shandong Hi-Speed Holdings Group Limited, also part of the internship program, owns significant interests in wind power subsidiaries in Xinjiang, a region where forced labor is so pervasive that its operations are likely tainted in some form by these human rights abuses.[313]

Funding. GTSI's connections to entities of concern extend beyond internships to significant financial relationships. These monetary ties further deepen the institute's integration with the PRC's academic and corporate sectors, particularly in sensitive technology fields.

Between 2017-2019, SF Express, engaged in multiple contracts with Georgia Tech, totaling over $7.8 million.[314] This substantial financial commitment coincided with the formalization of GTSI's internship program and deepened ties between the institute and a company, as mentioned before, known to have significant military connections.

Other significant PRC partners have provided substantial funding to GTSI. Tsinghua University, a leading technical institution with known military research connections, provided contracts worth $545,000 in 2016.[315] China Mobile Communication Co Ltd, a state-owned enterprise, contributed a $295,000 contract in 2014.[316]

These financial relationships underscore GTSI's deep engagement with the PRC's advanced technology sector and illustrate how problematic entities may exercise potential influence on GTSI's academic programs, and overall strategic direction. Combined with the internship program, these funding ties create a complex web of relationships between GTSI and entities linked to the PRC's defense and security apparatus, further blurring the lines between academic pursuits, corporate interests, and national security concerns.

D. Sichuan University – Pittsburgh Institute

SCUPI is a joint institute between Sichuan University and Pittsburgh University. The program brings U.S. academics from across the country to the PRC to train Sichuan University undergrads. U.S. professors at SCUPI conduct dual use research, including with PLA-affiliated entities. Their students do the same. For example, researchers focus on material science, especially resilience of certain materials under heat or pressure, and advanced ceramics, which are used as sensors and in hypersonic weapons applications.[317]

This is especially disconcerting because Sichuan University hosts major defense laboratories and is on the U.S. Commerce Department's Entity List and the DOD's list of higher education institutions that pose a risk to U.S. national security.[318]

Further, at least one U.S. SCUPI professor participates in a PRC talent program that the FBI has explained "works to recruit experts from prestigious universities … who can assist with the PRC government's technological and economic development needs."[319] This signals that SCUPI serves as a talent recruitment mechanism for the PRC.[320] Indeed, SCUPI is structured to facilitate knowledge transfer: the institute hosts U.S. researchers as they work alongside Sichuan University researchers and other PRC scholars on sensitive subjects that they had previously spent years exploring, often with the help of federal funding.

For example, a professor of mechanical engineering and co-director of nanotechnology at Union College has received federal funding for work on nanomaterials, some of which has implications for quantum computing.[321] At SCUPI, that same individual performs research on ultrathin materials and devices alongside researchers from Sichuan University.[322] This dual affiliation creates the risk for knowledge transfer to a PLA-affiliated university and other entities in the PRC that work to advance Military-Civil Fusion.

1. Research Collaborations with PRC Defense Entities

Numerous SCUPI professors who have dual affiliations with U.S. universities have engaged in sensitive research with PLA-affiliated entities since joining SCUPI, which serves as the conduit for potential knowledge transfer to these entities.

The SCUPI dean, who is also in a leadership position at Pitt's Swanson School of Engineering, has engaged extensively in dual use research with PLA-affiliated entities. In the U.S., he has received federal funding for his research on cooling techniques for gas turbines using 3D printing technology—a fact that SCUPI touts on its website.[323] His research with PLA-affiliated entities has likewise focused on cooling and heating technologies. For example, he has worked on thermal power conversion for hypersonic vehicles with the Chengdu Aircraft Design and Research Institute, a subsidiary of Chinese defense aviation conglomerate Aviation Industry Corporation of China (AVIC).[gg] [324] He has also worked on heat transfer research with the National University of Defense Technology's Science and Technology on Scramjet Laboratory, and separately with the Aero Engine Corporation of China, both of which are blacklisted entities.[325]

He also appears to serve as deputy director on the faculty committee of Sichuan University's School of Aeronautics and Astronautics.[326] The school has partnerships with the PLA and many of its contractors.[327]

Another U.S. scholar joined one of the Seven Sons universities after serving at SCUPI. While serving as a SCUPI professor from February 2017 to January 2021, he also conducted graphene research alongside an academic from the China

[gg] The Chengdu Aircraft Design and Research Institute is subordinate to AVIC, which was added to the Non-SDN Chinese Military-Industrial Complex Companies List on June 9, 2021, pursuant to E.O. 13959.

Academy of Space Technology[hh] and a group of researchers from UESTC.[328,329] He then went on to serve as vice director of UESTC's Graphene Innovation and Engineering Research Center, and is now a professor at another PRC joint institute.[330]

Other SCUPI researchers also maintain PLA-linked affiliations, further underscoring the Institute's military ties. For example, multiple professors are affiliated with Sichuan University's School of Aeronautics and Astronautics, which has an array of PLA partnerships.[331] One such SCUPI professor has won funding from a PLA contractor for his research.[332] He teaches a required course at Sichuan's aeronautics school focused on national defense and so-called "chokepoint" technologies[ii] in aerospace manufacturing.[333]

SCUPI students likewise engage in research with PLA affiliated entities.[334] For example, one student conducted military research with entities including the Huludao Military-Civil Fusion and New Materials Industry Development Center and Bohai Shipbuilding Heavy Industry Co.[335] The research focused mainly on ship manufacturing.

2. Research collaborations with the PLA and companies implicated in forced labor

Like TBSI, SCUPI appears to have a focus on commercialization of research. The Institute regularly conducts research with companies, many of which have affiliations with the PLA or forced labor.

For example, SCUPI's dean and another SCUPI professor worked with EPlus 3D Tech, a metal 3D printing company that partners with China Aerospace Science and Technology Corporation (CASC), Aviation Industry Corporation of China (AVIC), China Aerospace Science and Industry Corporation (CASIC), Commercial Aircraft Corporation of China (COMAC), and others.[336] Another SCUPI researcher worked on high-entropy alloys, which have significant defense implications, alongside a representative from a gearbox company that lists military industry as a use case on its website.[337]

SCUPI has also partnered with companies implicated in forced labor, including Kelun Pharmaceutical, which owns a Xinjiang-based biopharmaceutical subsidiary and biotechnology subsidiary, and Tongwei Solar.[338] The institute has also hosted representatives from SenseTime, which is on two U.S. red flag lists over its role in human rights abuses against Uyghurs.[339]

3. SCUPI Serves the PRC's strategic, defense objectives

SCUPI maintains a robust CCP branch and trains its students on the importance of PRC national security, both of which indicate that the institute is

[hh] The China Academy of Space Technology is subordinate to the China Aerospace Science and Technology Corporation, which was added to the Non-SDN Chinese Military-Industrial Complex Companies List on June 9, 2021, pursuant to E.O. 13959.

[ii] The PRC uses the concept of "chokepoint" technologies to refer to technologies in which Western entities are dominant and the PRC seeks to remove its reliance on that Western technology.

focused on advancing the PRC's strategic interests first and foremost. While such programs are common throughout China—and, indeed, are part of the standard college curriculum—SCUPI's participation in such programs raises concerns because it is a partnership with a U.S. university.

Students partake annually in a "National Security Education Day" where they are taught about the PRC's national defense forces and efforts. A press release covering the event states that the students "realized that national security is closely related to everyone, and every citizen has the responsibility and obligation to safeguard national security." It includes photos of SCUPI students examining photos of weapons systems.[340]

SCUPI also appears to partake in annual military training.[341] Similar trainings occur at other Sichuan University departments—again, common PRC university program.[342] For example, at Sichuan University's School of Textiles and Food, military training is a required course that aims to "improve students' national defense awareness."[343] SCUPI's participation in the PRC national defense programming, however, raises concerns.

IV. LACK OF COMPLIANCE WITH FOREIGN FUNDING REPORTING REQUIREMENTS

It is unsurprising that the CCP recognizes the high value of American education and scientific research. For example, through large donations, lucrative academic "partnerships," and complex legal arrangements, foreign actors have gained an outsized influence on American universities. Chinese universities and institutes have exploited these collaborative relationships with American universities for the benefit of the CCP. Hidden and obfuscated financial ties entice institutions to hire additional faculty, form on-campus "cultural" centers, and facilitate campus exchange programs under the guise of academic collaboration.[344]

We also uncovered the Department of Education's failure to open a single investigation under section 117 of the *Higher Education Act* (HEA)—the single biggest enforcement tool to protect against the threats posed by foreign adversaries.[345] The Biden-Harris administration's blatant crippling of enforcement efforts as well as institutions' refusal to adhere to the law have resulted in billions of dollars in foreign funds infiltrating our country undetected. As a result, postsecondary education in America has been compromised. Malignant foreign entities, like the CCP, have taken root at colleges and universities by simply flashing their checkbooks and opening the floodgates to an endless stream of cash.

Time and accuracy are of the essence for transparency. The requirements of section 117 of the Higher Education Act are designed to promote public transparency regarding gifts and contracts that equal or exceed $250,000, individually or in the aggregate, during a calendar year.[346] Reporting contracts and gifts years after they have occurred violates section 117 and enables dangerous partnerships to fester out of sight.

The Department has issued guidance to address scenarios in which foreign gifts and contracts should be reported and urges institutions to conduct "due diligence" in their reporting of foreign contracts and gifts under section 117.[347] Some of the scenarios include the following:

- Institutions' campuses outside of the United States;
- Intermediaries operating under the auspices of, or on behalf of, an institution;
- Organizations outside of an institution's direct control that benefit the institution; and
- Sources that may be determined to be a foreign source.

The structure, nature, and designated monetary value of the contracts and payments received by colleges and universities from the CCP or those it directly or indirectly controls should have created vigilance at postsecondary institutions to comply with section 117 disclosures. Instead, institutions have either acted negligently or have intentionally misled the Department and the public about the existence of these troubling foreign ties. This lack of full compliance, in turn, raises serious questions about institutions' section 117 processes.

A. Current Requirements of the HEA

To combat the danger of foreign influence in postsecondary education, section 117 of the HEA requires institutions of higher education (IHEs) that receive federal financial assistance to disclose semiannually to the U.S. Department of Education (ED or Department) any gifts from, or contracts with, a foreign source that alone, or in the aggregate, are valued at $250,000 or more in a calendar year.

Section 117 was added to the HEA by the *Higher Education Amendments of 1986*.[348] The then-section 1207 (now section 117) became a part of the HEA in response to large gifts from foreign governments, particularly gifts from Arab governments to Georgetown University for the purpose of creating a Center for Contemporary Arab Studies.[349] Section 117 requires the Secretary of Education to provide the public access to the disclosed gift or contract information.[350]

Under section 117, each reported gift or contract must include the aggregate dollar amount and the country of origin.[351] The statute also requires institutions owned or controlled by a foreign entity to report additional information.[352]

If a postsecondary institution fails to disclose properly a foreign gift or contract, the Attorney General may initiate a civil action to compel compliance.[353] Institutions that knowingly or willfully fail to comply with the law may be held liable for the full costs of obtaining compliance, including the costs of investigation and enforcement.[354] In addition, under the Department's November 2020 notice of interpretation, a failure to comply with section 117 could constitute a violation of

an institution's program participation agreement, risking an institution's access to taxpayer dollars.[355]

B. University of California, Berkeley

UC Berkeley failed to properly disclose TBSI-related gifts or contracts from the PRC government throughout the eight years that it has been partnering with Tsinghua University and the Shenzhen government at TBSI.[356] Berkeley contends that TBSI is a separate legal entity from the university and that any foreign gifts or contracts to TBSI did not and do not fall within the section 117 reporting requirements.[357] However, the structure and function of TBSI is that of an intermediary[358]—an entity working under the auspices of, or on behalf of, UC Berkeley.[359,jj] Further, an intermediary under section 117 "may be a legal entity other than an institution that receives a gift originating from or enters into a contract with a foreign source, and then passes to an institution part or all of the benefit of the gift from or contract with the foreign source."[360] As an intermediary, TBSI is a legal entity other than an HEA "institution of higher education,"[361] such as UC Berkeley, which should have triggered UC Berkeley's reporting requirement.[362] TBSI has received gifts originating from Chinese-affiliated entities or has otherwise entered into contracts with foreign sources and passed on to UC Berkeley part or all of the benefits of the gifts or contracts.[363] This has occurred through joint research and education, faculty and student exchanges, and the design of new multidisciplinary research programs, novel graduate curricula, and education programs in science and technology. Both Tsinghua University and UC Berkeley hold equal interests in TBSI, and each have a 50 percent interest in all revenue generated by inventions owned by TBSI and all other assets generated or created by TBSI.[364]

As the name Tsinghua-Berkeley implies, UC Berkeley was directly involved with the creation of TBSI and remains engaged in its management.[365] The president of UC Berkeley serves as co-chair of TBSI, along with the president of Tsinghua University and the mayor of Shenzhen.[366] UC Berkeley maintains a direct link to TBSI on TBSI's website. No other American universities are listed or involved in the leadership, creating the appearance of a specific and exclusive partnership between UC Berkeley and TBSI. The existence of the Tsinghua-Berkeley Center at Berkeley, California, the Berkeley-Tsinghua Center at Tsinghua, China, the use of UC Berkeley's name in each of the Centers' names,[367] and the various related UC Berkeley agreements[368] further demonstrate UC Berkeley's intimate involvement with, and benefit from, gifts and contracts with TBSI.[369]

Notably, UC Berkeley received nearly $22 million from Tsinghua University's U.S.-based entity, the Tsinghua Education Foundation North America (TEFNA)[370] to assist with TBSI.[371] This includes two $1.5 million gifts received in 2015 and 2016

[jj] As demonstrated above, the partnership also serves the broader strategic goals of the PRC.

and a subsequent $19 million sponsored research agreement.[372] In UC Berkeley's October 6, 2023, oversight response to the House Committee on Education and the Workforce, UC Berkeley admitted that it did not report to the Department the section 117 gifts from, or contracts with, TEFNA in a timely manner because UC Berkeley "did not initially recognize TEFNA as a foreign source due to its status as a US entity."[373] Yet, Department guidance clearly provides that "[w]hen evaluating whether a subsidiary or affiliate is an agent of a foreign source with respect to the transaction at issue, institutions may not simply assume that all transactions with U.S.-based counterparties fall outside the scope of Section 117."[374] UC Berkeley acknowledged it has "since improved" its reporting process for gifts and contracts.[375] However, the lack of *timely* reporting prevented the public and the Department from becoming aware of TEFNA as a foreign source of gifts, as well as contracts, until several years after the fact.

Additionally, the Department also recommends colleges and universities demonstrate increased due diligence "the first time an institution or intermediary enters into a large transaction."[376] Despite TEFNA's two gifts of $1.5 million each equaling more than five times the section 117 threshold of $250,000, there is no indication UC Berkeley carefully scrutinized whether TEFNA might constitute a "foreign source."[377]

Millions in foreign funds flowed through TBSI and TEFNA to the benefit of UC Berkeley. The structures of these contributions were similar to compliance scenarios provided by the Department, yet UC Berkeley still failed to report properly and timely the gifts and contracts as required by section 117.

C. Georgia Institute of Technology

Not dissimilar from UC Berkeley, Georgia Tech and Tianjin University entered into a 20-year enabling agreement in 2016 to create the Georgia Tech Tianjin University Shenzhen Institute (GTSI).[378] As the name suggests, GTSI expressly includes Georgia Tech, through the university's agents, as part of its founding, leadership, and decision-making.[379] Under the agreement and the Articles of Association, the Board of Regents of the University of Georgia System, by and on behalf of Georgia Tech, recommends three of the eight members to the Joint Management Committee[380] (the "ultimate decision-making body of GTSI").[381] Of the remaining five members, the Shenzhen Municipal People's Government recommends two and Tianjin University recommends three.[382] Additionally, the Regents, by and on behalf of Georgia Tech, select not less than one third of the faculty of GTSI and determine, along with Tianjin University, the educational models and course structures.[383] Though the enabling agreement includes the foregoing faculty selection process, the Articles of Association are more general, stating:

> GTSI shall have a faculty body that is of high caliber, international, and competitive at the global stage. TJU [Tianjin

> University] and GT [Georgia Tech] shall send their outstanding faculty members to work at GTSI; the remaining faculty members shall be recruited globally [based on] high academic achievements or potential. The ratio and size of full time faculty body shall meet GTSI's educational needs and satisfy relevant regulations.[384]

The Regents also determine graduation and degree requirements for those GTSI students awarded a Georgia Tech degree certificate.[385]

Although GTSI has been in existence for over seven years, Georgia Tech failed to disclose gifts and contracts in a timely manner.[386] Similar to UC Berkeley, Georgia Tech argued GTSI is not an intermediary to Georgia Tech, but instead is a separate legal entity that does not meet the definition of an "intermediary."[387] This is false. If GTSI conveys "part or all of the benefit of the gift from or contract with the foreign source" to Georgia Tech, then GTSI would be classified as an intermediary.[388] Some of the benefits Georgia Tech receives or may receive from its association with GTSI include: (1) at least $17 million in section 117 gifts and contracts from GTSI or other foreign sources in China; (2) a leadership role in decision-making on the Joint Management Committee of GTSI; (3) the potential for development of GTSI research centers with co-directors from Georgia Tech and Tianjin University; (4) collaborative research activities; (5) faculty and student exchanges; and (6) collaborative graduate degree programs offered at GTSI, including a Master of Science in Electrical and Computer Engineering.[389]

Finally, the degrees offered by Georgia Tech through the campus of GTSI are Master of Science degrees in Analytics, Computer Science, Electrical and Computer Engineering, and Environmental Engineering; and a Master of Industrial Design.[390] Of relevance, Georgia Tech's statements of milestone events and promotional information state, "At GTSI, [Georgia Tech] students will earn the same Georgia Tech diplomas as that [sic] issued in Atlanta."[391]

Yet, Georgia Tech contends GTSI is neither an "additional location" nor "branch campus" of Georgia Tech under the HEA.[392] Georgia Tech asserts, instead, that "Georgia Tech – Shenzhen" is the "additional location" of Georgia Tech and the holder of the corresponding Department's Office of Postsecondary Education Identification number.[393] Georgia Tech further contends that GTSI is simply an "administrative entity" of the "joint initiative between Georgia Tech, Tianjin University, and the Shenzhen Municipal People's Government," and that it is an "off-campus instructional site for Georgia Tech students to pursue a master's degree."[394] Given GTSI carries out many of the functional duties of an "additional location" or "branch campus," it certainly appears to have a much closer affiliation with Georgia Tech than a mere "administrative entity."

Bottom line, Georgia Tech failed to comply with section 117 in a timely manner. Georgia Tech's General Counsel began a review of the university's section 117 reporting practices in 2022. During that review, Georgia Tech determined there was a "contract" of $17 million "between" GTSI and Georgia Tech that originated

in 2016, the year Georgia Tech signed a three-way agreement to develop a joint institute.[395] Georgia Tech stated this amount came from reimbursements given to Georgia Tech from GTSI funding, projected out over the life of the contract.[396]

The $17 million was finally disclosed in Georgia Tech's report to the Department in January 2024—eight years after inception. Georgia Tech contended the $17 million should have been reported earlier but was "unintentionally omitted."[397] As with UC Berkeley, the failure of Georgia Tech to report the $17 million initially, and the lack of sufficient attention to section 117's compliance obligations, are disturbing. The *Defending Education Transparency and Ending Rogue Regimes Engaging in Nefarious Transactions* (DETERRENT) Act, as discussed below, will remedy such omissions and delayed reporting.

V. POLICY RECCOMMENDATIONS

A. Existing Research Security Guardrails

Despite the PRC's unprecedented challenges to America's open research ecosystem, there are very few guardrails in U.S. law to protect the exploitation by foreign adversary countries of U.S. government-funded, unclassified research in dual-use, critical, or emerging technologies. Although Congress and the Executive Branch are slowly waking up to the problem, more action urgently needs to be taken.

Congress has recently enacted helpful but incomplete guardrails around certain federally funded R&D activities. For example:

Confucius Institutes: In the FY2021 NDAA, Congress prohibited DOD from providing research funding to institutions that host Confucius Institutes, which frequently function as arms of the PRC government, absent a waiver.[398] In response, most U.S. universities have shut down their Confucius Institutes.[kk]

Talent Programs: In the CHIPS and Science Act, Congress required federal agencies to prohibit research award grantees from participating in "malign foreign talent recruitment program[s]" and to disclose participation in foreign talent programs while receiving federal grant funding.[399] This is an important improvement, but it only addresses a part of the problem for a few reasons.

1. The DOD-published list of malign talent program is wildly underinclusive.[ll] The PRC runs hundreds of talent programs that are designed to facilitate technology and expertise transfer, especially in

[kk] There is some evidence that the PRC is seeking to reestablish Confucius Institutes under new names—this will require ongoing monitoring by universities to ensure that the PRC does not succeed in its attempts to flout U.S. law.

[ll] The statutory definition of foreign malign talent programs extends beyond merely the programs listed by DOD, but in practice, DOD's list of programs is commonly used as the list against which affiliations are screened because DOD has determined that those programs meet the relevant criteria (and has not done so for other programs).

dual-use, critical, and emerging technologies. To date, DOD has only identified **five** malign talent programs on its list of malign foreign talent programs, including **only three PRC talent programs**.[mm]

2. The requirement only applies while the individual is (a) receiving federal funds, and (b) actively participating in the identified malign foreign talent plan. But technology and expertise transfer frequently happens after the duration of the grant[nn] (as illustrated above). And as the examples above show, talent program participation often generates ongoing links with problematic entities that endure and grow *after* the duration of the talent program itself.
3. It is a significant limitation that this requirement relies on self-disclosure.

Congress has also required DOD to create a list of problematic foreign institutions,[400] mandated that agencies improve information sharing on research security,[401] and required agencies to identify threats to federal R&D.[402]

NSPM-33: Shortly before leaving office, President Trump issued National Security Presidential Memorandum 33, mandating that institutions that receive over $50 million annually in federal science and engineering support develop research security programs and requiring improved information sharing across agencies.[403] However, these requirements are malleable—implementing guidance does not require any hard and fast prohibitions on foreign ownership, control, or influence among potential R&D awardees,[404] and coordination across agencies on implementing these requirements remains fragmented.[405]

Below, we examine DOD policy as an illustration of the shortcomings in current guardrails around federal grants and awards. In addition, NSF has issued implementing guidance under the TRUST proposal assessment process to improve vetting for national security risks.[oo] That framework represents and important but incomplete step forward because it does not address all relevant risk factors. Notably, NSF is not a national security agency and it is the Committee's view, as articulated below, that Congress should strengthen the guardrails in legislation.

[mm] DEP'T OF DEF., INTRODUCTION TO FY23 LISTS PUBLISHED IN RESPONSE TO SECTION 1286 OF THE NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2019 (PUBLIC LAW 115-232), AS AMENDED (2024), https://basicresearch.defense.gov/Portals/61/Documents/Research%20Security/1286%20List.pdf?ver=nEagju7uAK3DCdfMt9yZGg%3d%3d. Note: Two of the malign talent programs identified are just different names for the same plan.

[nn] For example, researchers routinely publish papers with findings produced by their federally-funded research in the years after the grant funded has concluded, and they often tap into the expertise they developed with federal funding in pursuing follow-on projects.

[oo] *NSF enhances research security with new TRUST proposal assessment process*, NSF (June 5, 2024) last accessed Sept. 23, 2024, https://new.nsf.gov/news/nsf-enhances-research-security-new-trust-proposal.

Stronger research security measures are urgently required across all agencies that fund dual-use, critical, and emerging technologies.

DOD Policy: As this report demonstrates, there is significant, ongoing collaboration between DOD-funded researchers and individuals tied to the PRC defense industrial base. This is not surprising, because DOD policy permits it. Measures to strengthen DOD policy are urgently required.

DOD issued guidance in 2020 and 2023 implementing the legal requirements above and providing additional controls related to DOD's national security mission. That guidance calls on DOD to implement controls to ensure the security of DOD-funded research. More granularly, DOD has published a "Decision Matrix" that gives specific guidance on the one factor that prohibits the grant of a research award and other factors that require mitigation, among other things. While the Matrix is an important first step, it leaves wide open avenues for ongoing collaboration with the PRC's defense industrial base. For example:

- The Matrix only requires automatic **denial** if the individual violates the law—i.e., the individual is an active member of a designated malign foreign talent program. As noted above, DOD has only listed two out of hundreds of PRC talent plans; the list does not include common aliases, and it is not regularly updated.
- For **all other risk factors**—including affiliations with **PLA universities**, the **Seven Sons of National Defense**, **Chinese Military Companies**, and other PRC military and defense actors—the Matrix requires **mitigation at most**.
    - But mitigation measures are unlikely to succeed in preventing the transfer of defense-related expertise or technological know-how to individuals who collaborate with *the PRC defense industrial base*.
    - Even if the individual is not actively employed by the PRC defense industrial base, it is extremely difficult to monitor the transfer of federally funded expertise and the technological breakthroughs that expertise may yield—and once DOD identifies such a transfer, the damage is done.
- For individuals tied to much of the PRC's defense industrial base, mitigation measures **are not even required**. Mitigation would merely be suggested for entities including CAEP, China's primary nuclear weapons research and development complex, and many PRC companies involved in defense R&D, among others.

Although these measures are beneficial, they are incomplete. As the report illustrates, they leave open extensive opportunities for foreign adversary countries, especially the PRC, to exploit federally funded research into dual-use, critical, and emerging technologies for their own strategic benefit.

Lack of Prohibitions on Collaboration with Foreign Adversary Defense Entities in Dual-Use, Critical, and Emerging Technologies: There is no general statutory prohibition restricting federally funded researchers from collaborating with military or defense-affiliated entities in a foreign adversary country like the PRC on unclassified research. (A narrow prohibition that prohibits PRC collaboration by recipients of NASA funding, which appears to be very poorly enforced, is discussed in Appendix B.) That means that it is lawful for a U.S. researcher to request federal funding to work directly with the PLA or a Seven Sons university on a research grant related to dual-use technologies, and a federal agency may award that grant request.

Lack of Prohibitions on Future Transfer of the Technological Advance or Expertise Funded by Federal Dollars: There is likewise no statute prohibiting the transfer of technology developed with the support of federal funding—including DOD funding—to a foreign adversary country or to its military or defense-affiliated entities. That contributes to the troubling case studies above, in which federal researchers developed a technological breakthrough or advancement based on years, sometimes more than a decade, of U.S. research funding, and then transferred that technological expertise, advancement, or breakthrough to the PRC and PRC defense-affiliated entities.

Inadequate Reporting Requirement and Enforcement: Finally, current law does not require and adequately penalize improper, incomplete, or inadequate reporting of ties to potentially problematic entities, and the information that is collected is typically siloed within agencies and individual departments. A January 2024 report conducted by the U.S. Government Accountability Office found that the U.S. government does not even have reliable and consistent reporting on research collaborations with foreign entities of concern[406]—much less the regulatory and oversight mechanisms necessary to protect such funding from cooptation. Existing databases lack basic information such as unique identifiers or personally identifiable information, making it almost impossible to even assess the scale of the problem. [pp]

[pp] The National Institute of Standards and Technology (NIST)'s Research Security Framework and NSF's security training modules represent steps forward but remain insufficient to address the scale of the threat. The training lacks specificity on navigating complex international collaborations, especially in fundamental research areas with potential dual-use applications. *See Federal Research: Information on Funding for U.S.-China Research Collaboration and Other International Activities*, U.S. GOV. ACCOUNTABILITY OFF. (Sept. 29, 2022), https://www.gao.gov/products/gao-22-105313; *National Institute of Standards and Technology, Strengthening Disclosure Requirements and Assessing Training Could Improve Research Security*, U.S. GOV. ACCOUNTABILITY OFF. (Dec. 14, 2023), https://www.gao.gov/products/gao-24-106074.

B. Foreign Gift and Contract Reporting Under HEA

1. Trump Administration Response

The Trump administration initiated and carried out multiple compliance investigations of IHEs to help ensure the integrity of foreign gift and contract reporting.[407] These investigations by the Trump administration discovered $6.5 billion in previously undisclosed gifts and contributions provided to so-called "elite" colleges from countries that pose serious national security threats.[408]

The investigations found many schools failed to disclose more than half of foreign gifts and contracts they received. Consistent with the Trump administration's findings, a 2019 U.S. Senate staff report found that up to 70 percent of institutions reviewed failed to comply with section 117 and those that do comply often underreport.[409]

These findings showed widespread lack of compliance even though the reporting requirements of section 117 had been in place for over 30 years.

In summary, under the Trump administration, the Department took many steps to increase transparency and combat foreign influence through sustained and focused enforcement of section 117. The Department opened over a dozen section 117 investigations, issued detailed reporting guidance, modernized the Department's online portal to make compliance easier,[410] and required the names of foreign sources to be listed.[411]

2. Biden-Harris Administration Response

In a stark contrast with the Trump administration, the Biden-Harris administration appears unconcerned about foreign gifts and influence. This administration is characterized by a glaring lack of transparency and blatant ignoring of foreign gifts and contracts. The lack of announcements by Secretary Cardona or other senior Department officers of any newly-initiated compliance investigations speaks volumes.[412] Further, when asked repeatedly in May 2023 at a hearing of the Subcommittee on Higher Education and Workforce Development whether the Biden-Harris administration had opened any new section 117 investigations, then-Office of Federal Student Aid (FSA) Chief Operating Officer Richard Cordray failed to say yes or no.[413] Instead, Mr. Cordray obfuscated, contending that he could not speak to the details of current investigations.[414] A review of the Department's website on September 20, 2024, shows that no new compliance investigations were opened during the Biden-Harris administration.[415]

Moreover, on December 27, 2022, the Biden-Harris administration announced it would transfer responsibilities for administering section 117 away from the Office of General Counsel and to FSA.[416] This move was and remains ill-advised, given the Office of General Counsel's expertise and recent history of conducting section 117 investigations.[417] Additionally, FSA was embroiled in many legal, technical, and other challenges demanding its attention, such as the delayed

launch of the 2025-2026 Free Application for Federal Student Aid[418] and the legal challenges blocking its illegal Income Driven Repayment (known as "SAVE") plan.[419]

Relatedly, Chairwoman Virginia Foxx and 21 other members of the Committee on Education and the Workforce transmitted a letter in April 2023 to Secretary Cardona which included a request for detailed information on the budget and staff resources dedicated to section 117 enforcement.[420] Unfortunately, the Department limited its response to the Committee to conclusory information with very few details, noting it "devote[s] substantial resources towards . . . compliance" and that "dozens of employees across the Department as well as vendors may work on Section 117 matters."[421]

Another concern was a June 26, 2024, announcement by the Biden-Harris administration stating that FSA's then-existing section 117 interactive data table would be decommissioned due to a "contract change."[422] Although prior years' reported data remains technically available on several different spreadsheets, as of June 26 the data table has become and more difficult for the public to access.[423] On July 24, 2024, the Department informed the Committee that the interactive table was "out of scope and out of budget" for the Department's "ED.gov Modernization Go-Live" project and that it will "work[] with an FSA contractor to develop – subject to identification of available funding – a more fulsome Section 117 platform to address stakeholder concerns and operational needs."[424] The absence of any mention of the foregoing in the Department's FY 2025 budget request, its equivocation about "identification of available funding," and its lack of any mention of reprogramming funds raise significant questions about its commitment to enforce meaningfully section 117.

Finally, the Biden-Harris administration has closed several investigations with little transparency into its closure process. In August 2022, the American Council on Education (ACE) transmitted a letter to the Department thanking Department senior officers for providing an update on section 117 to ACE and several "participating associations."[425] The letter stated that "ED plans to close the outstanding section 117 investigations that remain open," though curiously it did not indicate why the Department planned to close the investigations.[426] This advance notice to ACE is in contrast to the Department's lack of communication to Congress about the detailed status of most pending section 117 investigations.[427] The Biden-Harris administration has closed five section 117 investigations since taking office—three in 2023 and two in 2024.[428] Ten other investigations, all initiated under President Trump, remain open.[429] All of these actions by the Biden-Harris administration raise questions about its commitment to enforcement of section 117.

C. Policy Recommendations

We therefore recommend the following measures:

Recommendation 1: Strengthen the guardrails around research collaboration on dual-use, critical, and emerging technologies with foreign entities of concern.

As demonstrated above, collaboration on dual-use, critical, and emerging technologies is actively contributing to the PRC's defense capabilities at the expense of the American taxpayer. The benefits from federal funding extend beyond the published results by developing expertise, technological and practical know-how, and the knowledge base that facilitates technological advancements. Research restrictions must be strengthened, and they must be applied in a manner that is consistent with the relevant risk. This requires a sliding scale that factors in the risk posed by a PRC individual or entity and the subject of the research grant.

Congress should prohibit federally funded researchers from engaging in any collaboration with the highest risk entities, including individuals and entities affiliated with the organs of the PLA, PLA universities, the Seven Sons of National Defense, the Seven Sons of Ordnance (Arms) Industry, and the PRC's national defense labs, or the PRC's Ministry of Public Security.

Congress should also prohibit collaboration on research related to dual-use, critical, or emerging technologies with entities in the PRC's broader defense industrial base. This prohibition should cover individuals and entities affiliated with the PRC's state-owned defense conglomerates like AVIC, the PRC's state key laboratories, SASTIND-supervised universities like Tianjin University, and PRC companies that are deeply intertwined in the defense and surveillance apparatus like Huawei and Hikvision. This requirement could be implemented by prohibiting collaboration with entities listed on U.S. government blacklists, such as the DOD's 1260H and 1286 lists. To be effective, the lists must be expanded to include the entities engaged in defense research, and prohibit collaboration with individuals or entities linked to those listed entities or other U.S. government blacklisted entity.

The DOD should also urgently update the list of malign foreign talent recruitment to include the dozens if not hundreds of additional PRC talent plans that are designed to facilitate the transfer of dual-use, critical, and emerging technologies to the PRC. The DOD's current list is vastly underinclusive and does not meet the requirements of existing law related to malign foreign talent recruitment plans.

Agencies should also strengthen the guardrails related to research on dual-use, critical, and emerging technologies for all individuals affiliated with foreign countries of concern. Stronger reporting requirements, greater diligence on researchers and their collaborators, and improved information sharing continue to be sorely needed. For example, agencies should require awardees to identify all

individuals—not just PIs and co-PIs—who will participate in grant-funded research in advance and screen each researcher for relevant risk factors. Agencies should routinely check the information reported by researchers against publicly available information in advance of awarding grants to catch underreporting and misreporting of risk factors before grants are awarded.

Recommendation 2: Implement post-award restrictions on collaborations with blacklisted entities from a foreign country of concern.

The risks that the benefit of American taxpayer-funded research could be transferred to the PRC does not end when a researcher's grant concludes. Indeed, in many of the examples above, researchers acquired years of expertise gained through federal funding before beginning to collaborate with problematic PRC entities. Here as well, a risk-based approach is warranted:

Congress should require agencies to prohibit federally funded researchers from any future collaboration with the highest risk entities—i.e., organs of the PLA, PLA universities etc.—related to the subject matter of their research grants. Likewise, Congress should prohibit researchers who receive federal funding to conduct research on dual-use, critical, or emerging technologies from collaborating with individuals or entities affiliated with the broader PRC's defense industrial base—as defined above—related to the subject of their research even after the grant has concluded.

Collaborations with individuals or entities associated with a blacklisted foreign entity from a country of concern should be reported to the funding agency in advance and require a waiver (at the risk of disqualifying the researcher from any future federal grants or awards) before any collaboration related to the subject matter of their grant could be pursued.

And agencies should strengthen reporting requirements, due diligence processes, and enforcement of these requirements after the grant period.

Recommendation 3: Adopt the DETERRENT Act to require enhanced transparency from universities and researchers of foreign gifts and contracts.

As demonstrated above, there is both inadequate reporting and enforcement of federal requirements on university disclosures of foreign gifts and contracts. On October 11, 2023, Representative Michelle Steel (R-CA) introduced the DETERRENT Act (H.R. 5933) with Representatives Virginia Foxx (R-NC), Burgess Owens (R-UT), Joe Wilson (R-SC), Glenn Thompson (R-PA), Glenn Grothman (R-WI), Elise Stefanik (R-NY), Lloyd Smucker (R-PA), Lisa McClain (R-MI), Julia Letlow (R-LA), Brandon Williams (R-NY), Erin Houchin (R-IN), Ron Estes (R-KS), and Tim Walberg (R-MI).[430] The DETERRENT Act passed the House floor on December 6, 2023, with a bipartisan vote of 246 – 170.[431]

The DETERRENT Act:

- Slashes the foreign gift reporting threshold for colleges and universities from $250,000 to $50,000, with an even stricter $0 threshold for countries of concern (China, North Korea, Iran, Russia, as well as any country designated by the Secretary of Education, in consultation with the Secretary of Defense, Secretary of State, and the Director of National Intelligence to be engaged in conduct detrimental to the national security or foreign policy of the United States);
- Closes reporting loopholes and provides transparency to Congress, intelligence agencies, and the public;
- Requires disclosure of foreign gifts to individual staff and faculty at research-heavy institutions to protect those targeted the most by our adversaries;
- Holds our largest private institutions accountable for their financial partnerships by revealing concerning foreign investments in their endowments; and
- Implements a series of repercussions for colleges and universities that remain noncompliant in foreign gift reporting, such as fines and the loss of Title IV funding.

Recommendation 4: Strengthen oversight and enforcement of postsecondary institutions' failure to disclose foreign gifts and contracts.

As demonstrated above, stronger oversight and enforcement of foreign gift and contract disclosure requirements is needed. Federal investigators have recently settled multiple cases against federally funded universities for their failures to disclose funding from the PRC.[432] Our report demonstrates that this is just the tip of the iceberg.

Strengthening enforcement will also require robust information sharing across federal funding agencies. Sharing information about enforcement matters, individuals of concern, and documents from ongoing cases across enforcement entities will be critical to success.

ENDNOTES

[1] Rules of the U.S. House of Representatives, 118th Cong. at 6, 7, 9-12 (Jan. 10, 2023).
[2] Xi Jinping: Speech at the National Science and Technology Conference, the National Science and Technology Awards Ceremony, and the Academician Conference of the Two Academies [习近平：在全国科技大会、国家科学技术奖励大会、两院院士大会上的讲话], Xinhua News Agency, June 24, 2024, http://www.news.cn/politics/leaders/20240624/16741a201e564d8d8775ffb1450ecf29/c.html?utm_source=substack&utm_medium=email.
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[4] For a detailed discussion on the PRC's strategy to systematically exploit foreign technology—particularly from open research environments like that of the U.S.—and its emphasis on building national innovation systems, see State Council: Construction Plan for the National Technology Transfer System [国务院关于印发国家技术转移体系建设方案的通知], Section 2(8), www.gov.cn/zhengce/content/2017-09/26/content_5227667.htm; Ministry of Science and Technology: 13th Five-Year Plan for National Science and Technology Talent Development [科技部关于印发《"十三五"国家科技人才发展规划》的通知], Section 3(3), https://most.gov.cn/xxgk/xinxifenlei/fdzdgknr/fgzc/gfxwj/gfxwj2017/201706/t20170622_133693.html.
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[63] Documents on File with the Select Committee.

[64] Documents on File with the Select Committee; "CCF Dragon Star Program: Overseas Outstanding Chinese Scientists Provide Full Course Instruction [CCF 龙星计划，海外杰出华人科学家全程授课]," China Computer Federation (2019), https://web.archive.org/web/20240821222823/https://www.ccf.org.cn/c/2018-11-07/654682.shtml; "List of the Eighth Batch of Chair Professors under the Chang Jiang Scholars Program ["长江学者奖励计划"第八批讲座教授名单]," Chang Jiang Scholars Program (May 30, 2009), https://web.archive.org/web/20090530082106/http://www.cksp.edu.cn/news/4/4-20070316-54.htm; 朱松纯：走向通用人工智能——从大数据到大任务," Tencent Cloud (Nov. 12, 2019), https://web.archive.org/web/20240821203030/https://cloud.tencent.com/developer/article/1537183; Yixin Zhu, Tao Gao, Lifeng Fan, Siyuan Huang, et al., "Dark, Beyond Deep: A Paradigm Shift to Cognitive AI with Humanlike Common Sense," Engineering (2020): 310–45, https://www.sciencedirect.com/science/article/pii/S2095809920300345.

[65] Documents on File with the Select Committee. Beijing Institute of Technology is sanctioned under Section 1286 of the NDAA and listed on the Entity List, restricting the export and reexport of EAR-controlled items. See Introduction to FY23 Lists Published in Response to Section 1286 of the National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232), as amended, (July 2024), available at https://rt.cto.mil/wp-content/uploads/2024/07/FY23-Lists-Published-in-Response-to-Section-1286-of-NDAA-2019_clearedv2.pdf ; Supplement No. 4 to Part 744—Entity List, 88 Fed. Reg. 13,675 (Mar. 6, 2023), https://www.ecfr.gov/current/title-15/subtitle-B/chapter-VII/subchapter-C/part-744/appendix-Supplement%20No.%204%20to%20Part%20744 (last updated Aug. 15, 2024).

[66] Documents on File with the Select Committee. For details on the Lotus Hill Institute, see: 朱松纯：走向通用人工智能——从大数据到大任务, Tencent Cloud (Nov. 12, 2019), https://web.archive.org/web/20240821203030/https://cloud.tencent.com/developer/article/1537183; "Hubei Ezhou: Attracting Talent and Intelligence to Promote Development [湖北鄂州：聚才引智促发展]," Economic Daily (Feb. 19, 2009), https://web.archive.org/web/20240821205537/https://finance.sina.com.cn/roll/20090219/08312682915.shtml.

[67] Documents on File with the Select Committee.
[68] The Beijing Institute of Technology (BIT) was added to the Commerce Department's Entity List in December 2020. Dep't of Commerce, BIS, Final Rule, 85 FR 83416 (2020), available at https://www.federalregister.gov/documents/2020/12/22/2020-28031/addition-of-entities-to-the-entity-list-revision-of-entry-on-the-entity-list-and-removal-of-entities (last accessed Sept. 22, 2024).
[69] Documents on File with the Select Committee.
[70] The full name of the company is now Dark Matter Intelligent Technology (Guangzhou) Co., Ltd.（暗物智能科技（广州）有限公司), and its transition from a Los Angeles startup to a Guangzhou-based entity reflects the trend of AI researchers returning to China to commercialize their work. See "About Us," Dark Matter AI (Dec. 1, 2020), https://web.archive.org/web/20201201104810/https://www.dm-ai.cn/aboutus/.
[71] "Dark Matter AI completes tens of millions of dollars in Pre-A round financing, building a powerful cognitive AI platform [暗物智能 DMAI 完成数千万美元 Pre-A 轮融资，打造强认知 AI 平台]," Global Artificial Intelligence Information Service (Mar. 28, 2018), https://web.archive.org/web/20240821232212/https://www.jiqizhixin.com/articles/19032801.
[72] The five state-owned enterprises are Guangzhou Industrial Investment, Guangzhou Industrial Control, Guangzhou Urban Investment, Guangzhou Financial Control, and Nansha Science and Technology Financial Holding. See "Seizing the Strategic Opportunity of the "Nansha Plan," Five State-Owned Enterprises in Guangzhou Jointly Invest in Dark Matter Intelligence [把握《南沙方案》战略机遇，广州 5 家国企联合投资暗物智能]," Express News (Jul. 5, 2022), https://cj.sina.cn/articles/view/1652484947/627eeb5302001e05u?vt=4&autocallup=no&isfromsina=yes; "Dark Matter Intelligence Technology (Guangzhou) Co., Ltd. [暗物智能科技（广州）有限公司]," QCC, https://archive.ph/jZVfj; "Guangzhou Dark Matter Enterprise Management Partnership (Limited Partnership) [广州暗物桓星企业管理合伙企业（有限合伙）]," QCC, https://archive.ph/gnco3; "Dark Matter (Beijing) Intelligent Technology Co., Ltd. [暗物质（北京）智能科技有限公司]," QCC, https://www.qcc.com/firm/a5b5a0f16c1bf43e469677eb786d6293.html?utm_source=sogoulxkp.
[73] Zhang Zhihong, Zhao Dong, and Chen Chongyu, CN-111497965-B, A Wheel-Leg Switching Robot System and Its Control Method, Dark Matter Intelligence Technology (Guangzhou) Co., Ltd. (暗物智能科技(广州)有限公司), Pub. Date January 18, 2022, filed April 24, 2020, issued April 24, 2020, https://patents.google.com/patent/CN111497965B/zh; Xie Yuan, Chen Tianshui, and Pu Tao, CN-110738102-B, Facial Expression Recognition Method and System, Dark Matter Intelligence Technology (Guangzhou) Co., Ltd. (暗物智能科技(广州)有限公司), Pub. Date May 12, 2023, filed September 4, 2019, issued September 4, 2019, https://patents.google.com/patent/CN110738102B/en; Lin Jing, Zhang Dongyu, and Wu Wenxi, CN-107480178-B, A Pedestrian Re-identification Method Based on Cross-modal Comparison of Images and Videos, Dark Matter Intelligence Technology (Guangzhou) Co., Ltd. (暗物智能科技(广州)有限公司), Pub. Date July 7, 2020, filed July 1, 2017, issued July 1, 2017, https://patents.google.com/patent/CN107480178B/zh; Chen Chongyu, Zhang Jian, and Dong Le, CN-117372969-A, Monitoring Scene-Oriented Abnormal Event Detection Method, Dark Matter Intelligence Technology (Guangzhou) Co., Ltd. (暗物智能科技(广州)有限公司), Pub. Date January 9, 2024, filed December 8, 2023, issued December 8, 2023, https://patents.google.com/patent/CN117372969A/en.
[74] DMAI's strategic importance in China's AI development is highlighted by its recognition as a core enterprise in Guangzhou's AI industry and its role in the "Nansha Plan" for the Greater Bay Area. The "Nansha Plan" aims to develop the Greater Bay Area into a world-class city cluster with advanced manufacturing and innovation capabilities. See "SCIO briefing about Master Plan of Guangzhou Nansha on Deepening Comprehensive Cooperation between Guangdong, Hong Kong and Macao with Global Perspective," The State Council Information Office of the PRC (Jun. 24, 2022), http://english.scio.gov.cn/pressroom/node_8031627.htm.
[75] Huey-Meei Chang & William Hannas, "Spotlight on Beijing Institute of General Artificial Intelligence," Center for Security and Emerging Technology (May 2023), https://cset.georgetown.edu/publication/spotlight-on-beijing-institute-for-general-artificial-intelligence/.
[76] Documents on File with the Select Committee; Huey-Meei Chang & William Hannas, "Spotlight on Beijing Institute of General Artificial Intelligence," Center for Security and Emerging Technology

(May 2023), https://cset.georgetown.edu/publication/spotlight-on-beijing-institute-for-general-artificial-intelligence/.

[77] Four of the UCLA lab's five faculty and many of its 28 Ph.D. students also were affiliated with Chinese universities. Graduate students work in causal learning, cognitive modeling, communicative learning, generalization, grounding, reasoning and intent. See "People," Center for Vision, Cognition, Learning, and Autonomy, https://web.archive.org/web/20240822130125/https://vcla.stat.ucla.edu/people.html; Documents on File with the Select Committee; "焦点访谈：新征程上科教兴国还需人才支撑," CCTV (Nov. 25, 2022), https://web.archive.org/web/20240822125618/https://news.cctv.com/2022/11/25/ARTIWJNoiErt6666t22E1ACF221125.shtml.

[78] Documents on File with the Select Committee; "焦点访谈：新征程上科教兴国还需人才支撑," CCTV (Nov. 25, 2022), https://news.cctv.com/2022/11/25/ARTIWJNoiErt6666t22E1ACF221125.shtml.

[79] Documents on File with the Select Committee.

[80] More examples can be found in a 2023 report published by the Center for Security and Emerging Technology, see Huey-Meei Chang & William Hannas, "Spotlight on Beijing Institute of General Artificial Intelligence," Center for Security and Emerging Technology (May 2023), https://cset.georgetown.edu/publication/spotlight-on-beijing-institute-for-general-artificial-intelligence/; Tao Yuan, Hangxin Liu, Lifeng Fan, Zilong Zheng, et al., "Joint Inference of States, Robot Knowledge, and Human (False-)Beliefs," IEEE International Conference on Robotics and Automation (ICRA), Paris, France (2020), https://arxiv.org/abs/2004.12248; Luyao Yuan, Xiaofeng Gao, Zilong Zheng, Mark Edmonds, et al., "In situ bidirectional human-robot value alignment," Science Robotics 7, no. 68 (July 13, 2022), https://www.science.org/doi/10.1126/scirobotics.abm4183; Yixin Zhu, Tao Gao, Lifeng Fan, Siyuan Huang, et al., "Dark, Beyond Deep: A Paradigm Shift to Cognitive AI with Humanlike Common Sense," Engineering 6, no. 3 (2020): 310–45, https://www.sciencedirect.com/science/article/pii/S2095809920300345.

[81] CSET researchers note this phrase is generally "used to describe a Chinese project of paramount importance and national pride," where 两弹 is commonly mistranslated as "two bombs," i.e., atomic and thermonuclear weapons. The second 弹 (dàn) is actually an abbreviation of 导弹 (dǎodàn), "ballistic missile." See Huey-Meei Chang & William Hannas, "Spotlight on Beijing Institute of General Artificial Intelligence," Center for Security and Emerging Technology (May 2023), https://cset.georgetown.edu/publication/spotlight-on-beijing-institute-for-general-artificial-intelligence/; Irene Zhang, "AI Proposals at 'Two Sessions': AGI as 'Two Bombs, One Satellite'?", ChinaTalk (Mar. 8, 2023), https://www.chinatalk.media/p/ai-proposals-at-two-sessions-agi.

[82] "'Two bombs and one satellite' established China's status as a great power ["两弹一星"奠定中国大国地位]," CCTV (Oct. 18, 2007), https://web.archive.org/web/20240822131310/http://discovery.cctv.com/special/C19607/20071018/104899.shtml.

[83] General artificial intelligence should be raised to the height of 'two bombs and one satellite' [全国政协委员朱松纯：应将通用人工智能提到"两弹一星"高度]," Southern Metropolis Daily (Mar. 6, 2023), https://web.archive.org/web/20240822131336/https://www.bigai.ai/blog/news/nanfangdushibao/.

[84] Since its inception, the Tsinghua-Berkeley Shenzhen Institute has adhered to the concept of "industrializing scientific research outcomes," by establishing the institute in an industrial park and appointing industry experts as mentors to fully leverage Shenzhen's strengths in innovation and entrepreneurship, achieving a deep integration of academia, research, and industry [清华—伯克利深圳学院在创立之初就秉承'科研成果产业化'的理念，通过把学院办在产业园、聘请产业精英担任工业导师等方式，充分利用深圳在创新创业上的优势，实现产学研深度融合]," emphasizing the institute's express focus on translating research into commercial applications. See Wei Feifei, "Tsinghua-Berkeley, Running at the Same Speed as Shenzhen [清华—伯克利，和深圳同速奔跑]," China Education Network (Apr. 8, 2017), https://web.archive.org/web/20231004213847/https://webcache.googleusercontent.com/search?q=cache:TkmALKTP3x4J:www.hinews.cn/news/system/2017/04/08/031051499.shtml&cd=17&hl=en&ct=clnk&gl=us.

[85] The company's full name is Berxel Photonics Co. Ltd (深圳博升光电科技有限公司). For more details, see "Shenzhen Berxel Photonics Co., Ltd. [深圳博升光电科技有限公司]," Qichacha, https://web.archive.org/web/20240822142553/https://www.qcc.com/firm/8d1747eefe3e8918cd94604498

467b27.html. For examples of federally-funded research, see "CMOS-Compatible Nanomanufactured Optoelectronic Integrated Circuits on Silicon," Award No. 1335609, National Science Foundation (Jul. 26, 2013), https://www.nsf.gov/awardsearch/showAward?AWD_ID=1335609; Stuart A. Wolf, James Belanich, and Melissa A. Cummings, "An Evaluation of the National Security Science and Engineering Faculty Fellows Program," Institute for Defense Analyses at A-2 (Jun. 2017), https://www.ida.org/-/media/feature/publications/a/an/an-evaluation-of-the-national-security-science-and-engineering-faculty-fellows-program/d-8528.ashx; Robert Sanders, Tiny Tunable Laser Lights Way to High-Speed Data Networks Perhaps 100 Times Faster Than Today's Fastest Data Communication Systems, UC Berkeley Researchers Say, U.C. Berkeley News (Feb. 6, 2011), https://web.archive.org/web/20240822140142/https://newsarchive.berkeley.edu/news/media/releases/98legacy/03_11_98a.html; Roger Chen et al., Nanolasers Grown on Silicon, 5 Nat. Photonics 170 (2011), https://e3s-center.berkeley.edu/wp-content/uploads/2019/06/2011_Nanolasers-Grown-On-Silicon.pdf; https://apps.dtic.mil/sti/citations/ADA606149; "BNNI Centers," Berkeley Nanosciences and Nanoengineering Institute, https://web.archive.org/web/20240822140422/https://nano.studentorg.berkeley.edu/research/BNNICenters.html.

[86] "Ministry of Education Notice on the Announcement of the List of Chang Jiang (Yangtze River) Distinguished Professors, Chair Professors, and Chang Jiang Scholars Achievement Award Winners for the Year 2008 [教育部关于公布 2008 年度长江学者特聘教授、讲座教授和长江学者成就奖获奖者名单的通知]," PRC Ministry of Education (Sep. 6, 2009), https://web.archive.org/web/20240705201237/http://www.moe.gov.cn/publicfiles/business/htmlfiles/moe/cmsmedia/image//UserFiles/File/2009/09/24/2009092409/2009092409_875892.doc; "List of the Fourth Batch of Chair Professors under the "Chang Jiang Scholars Award Program ["长江学者奖励计划"第四批讲座教授名单]," Chang Jiang Scholars Award Program (Apr. 17, 2010), https://web.archive.org/web/20100417112222/http://www.cksp.edu.cn/news/4/4-20070316-44.htm. *See also* Documents on File with the Select Committee.

[87] "EECS News Fall 2008," Department of Electrical Engineering and Computer Sciences at UC Berkeley (Nov. 20, 2008), https://web.archive.org/web/20240704184703/https://www2.eecs.berkeley.edu/News/Archive/08fall.shtml; Stuart A. Wolf, James Belanich, and Melissa A. Cummings, "An Evaluation of the National Security Science and Engineering Faculty Fellows Program," Institute for Defense Analyses at A-2 (Jun. 2017), https://www.ida.org/-/media/feature/publications/a/an/an-evaluation-of-the-national-security-science-and-engineering-faculty-fellows-program/d-8528.ashx.

[88] Documents on File with the Select Committee. The fellowship awarded up to $3 million over five years, starting in 2008, with the expected output being a series of academic publications. To track these, the Committee conducted a search on OpenAlex for papers authored by Researcher 3 that acknowledged the "National Security Science and Engineering Faculty Fellowship." This search yielded 17 publications, primarily from 2010, extending through 2015 due to the peer review process. Of these, eight focused on optical networks, with additional work on advanced materials and laser technology components. Documents on File with the Select Committee.

[89] Documents on File with the Select Committee.

[90] "Shenzhen Berxel Photonics Co., Ltd. [深圳博升光电科技有限公司]," Qichacha, https://web.archive.org/web/20240822142553/https://www.qcc.com/firm/8d1747eefe3e8918cd94604498467b27.html.

[91] *See* Oxide Spaced HCG VCSEL and Method of Fabricating the Same, CN-112219327-A (filed May 11, 2018, issued Jan. 12, 2021) (California Univ. Board of Trustees; Ruihua Chang, Kevin T. Cook, Jipeng Qi, Jiaxing Wang), https://patents.google.com/patent/CN112219327A/en; Vertical Cavity Surface Emitting Device with Buried Index Guiding Current Confinement Layer, CN-112189288-A (filed May 11, 2018, issued Jan. 5, 2021) (California Univ. Board of Trustees; Ruihua Chang, Jiaxing Wang, Kevin T. Cook, Younan Shao, Emil Kolev), https://patents.google.com/patent/CN112189288A/en; Epitaxial Growth of Phosphorus Gallium Arsenide Clad Material on Gallium Arsenide Substrate, CN-112119481-A (filed May 11, 2018, issued Dec. 22, 2020) (California Univ. Board of Trustees; Ruihua Chang, Jiaxing Wang, Younan Shao, Emil Kolev), https://patents.google.com/patent/CN112119481A/en.

[92] *See* Polarized Structured Light 3D Camera and 3D Imaging Method, CN-115524719-A (filed Oct. 9, 2022, issued Dec. 27, 2022) (Berxel; Xuanlun Huang, Chenyang Wu, Jiannan Yu, Jiaxing Wang, Ruihua Chang), https://patents.google.com/patent/CN115524719A/en; High-Speed Vertical Cavity Surface Emitting Laser, Photoelectric Device with High-Speed Vertical Cavity Surface Emitting Laser and Manufacturing Method of High-Speed Vertical Cavity Surface Emitting Laser, CN-116759888-A (filed Jun. 8, 2023, issued Sep. 15, 2023) (Berxel; Ruihua Chang, Jiaxing Wang, Huawen Hu, Zhuokai Yang), https://patents.google.com/patent/CN116759888A/en; High-Speed Vertical Cavity Surface Emitting Laser and Photoelectric Equipment with Same, CN-220382487-U (filed Jun. 8, 2023, issued Jan. 23, 2024) (Berxel; Ruihua Chang, Jiaxing Wang, Huawen Hu, Zhuokai Yang), https://patents.google.com/patent/CN220382487U/en; High-Contrast Grating Polarizer with Adjustable Polarization Characteristics, CN-117170004-A (filed Jun. 16, 2023, issued Dec. 5, 2023) (Berxel (Zhejiang); Yao Cui, Ruihua Chang, Younan Shao, Yipeng Ji), https://patents.google.com/patent/CN117170004A/en; High Contrast Grating Polaroid, CN-116482792-A (filed Mar. 31, 2023, issued Jul. 25, 2023) (Berxel (Zhejiang); Yao Cui, Ruihua Chang, Younan Shao, Yipeng Ji), https://patents.google.com/patent/CN116482792A/en; Adjustable Structured Light Generator, Photoelectric Device with Same and Manufacturing Method, CN-117369196-A (filed Aug. 23, 2023, issued Jan. 9, 2024) (Berxel; Chenyang Wu, Xuanlun Huang, Yipeng Ji, Jiaxing Wang, Ruihua Chang), https://patents.google.com/patent/CN117369196A/en; Noise Removal Method for 3D Structured Light Camera System, CN-116962898-A (filed Jul. 28, 2023, issued Oct. 27, 2023) (Berxel; Xiaolan Xu, Ruihua Chang, Jiannan Yu, Baishun Wang), https://patents.google.com/patent/CN116962898A/en.

[93] Pan Xiaoqin et al, "Rising of Jiashan's 'Smart Sensor Valley': Industrial Breakthrough in an Emerging Zone [嘉善崛起"智能传感谷"： 一个新兴园区的产业突围]," Jiaxing Daily (May 27, 2021), https://web.archive.org/web/20231003154156/https://webcache.googleusercontent.com/search?q=cache:EwGkN95o3UcJ:https://zjnews.zjol.com.cn/zjnews/jxnews/202105/t20210527_22588113.shtml&cd=17&hl=en&ct=clnk&gl=us.

[94] Berxel's investors (2019-2021 include: Summitview Capital, Qingsong Fund, TusStar, Leaguer Angel Investment Management, Vision Knight Capital, Legend Star, E-Town International Industrial Investment, Hongtai Fund, Shenzhen Capital Group, Oriental Fortune Capital, Sunic Capital, Yitang Changhou Fund, and Montage Technology. For details on ownership structure, see "Shenzhen Berxel Photonics Co., Ltd. [深圳博升光电科技有限公司]," Qichacha, https://web.archive.org/web/20240822142553/https://www.qcc.com/firm/8d1747eefe3e8918cd94604498467b27.html. For details on investors tied to the military industrial complex, see "2020 Annual Report," Montage Technology Co., Ltd. (Apr. 30, 2021), http://static.sse.com.cn/disclosure/listedinfo/announcement/c/new/2021-04-30/688008_20210430_5.pdf; "2023 Annual Report," Montage Technology Co., Ltd. (Apr. 10, 2024), https://static.sse.com.cn/disclosure/listedinfo/announcement/c/new/2024-04-10/688008_20240410_UZ0Y.pdf; "Non-SDN Chinese Military-Industrial Complex Companies List," U.S. Department of the Treasury, https://www.treasury.gov/ofac/downloads/ccmc/nscmiclist.txt.

[95] "High Directionality of Surface Radiation for Surface Emitting Distributed Feedback Lasers," Optics Express (Apr. 25, 2022), https://opg.optica.org/oe/fulltext.cfm?uri=oe-30-9-14243&id=471347.

[96] "About Us [关于我们]," Berxel, https://web.archive.org/web/20240822150855/https://www.berxel.com/cn/about.html.

[98] While Berxel does not explicitly state LiDAR as an application on their website, the company's General Manager gave a presentation titled "New High-Power, Anti-Interference LiDAR Light Source" at the 29th Microwords and Great Meanings Seminar on 'LiDAR Technology and Applications' in September 2020. This suggests Berxel's involvement in developing technologies directly applicable to LiDAR systems. See "29th "Micro Words, Great Meanings" Symposium: LiDAR Technology and Applications [第二十九届"微言大义"研讨会: 激光雷达技术及应用]," MEMS Consulting (Sep. 10, 2020), https://web.archive.org/web/20240306202915/https://webcache.googleusercontent.com/search?q=cache:lwYQIhUlFgQJ:https://www.memseminar.com/29/&cd=12&hl=en&ct=clnk&gl=us.

[99] The following patents are related to technologies commonly used in facial recognition systems, particularly involving 3D imaging and structured light methods: Polarized Structured Light 3D

Camera and 3D Imaging Method, CN-115524719-A (filed Oct. 9, 2022, issued Dec. 27, 2022) (Berxel; Xuanlun Huang, Chenyang Wu, Jiannan Yu, Jiaxing Wang, Ruihua Chang), https://patents.google.com/patent/CN115524719A/en; Adjustable Structured Light Generator, Photoelectric Device with Same and Manufacturing Method, CN-117369196-A (filed Aug. 23, 2023, issued Jan. 9, 2024) (Berxel; Chenyang Wu, Xuanlun Huang, Yipeng Ji, Jiaxing Wang, Ruihua Chang), https://patents.google.com/patent/CN117369196A/en; Noise Removal Method for 3D Structured Light Camera System, CN-116962898-A (filed Jul. 28, 2023, issued Oct. 27, 2023) (Berxel; Xiaolan Xu, Ruihua Chang, Jiannan Yu, Baishun Wang), https://patents.google.com/patent/CN116962898A/en.

[100] Documents on File with the Select Committee; *see also* 祝贺！鹏城实验室副主任尤肖虎教授当选中国科学院院士、鹏城实验室常瑞华教授当选中国工程院外籍院士, Peng Cheng Laboratory (Nov. 23, 2023), https://web.archive.org/web/20240704035825/https://www.pcl.ac.cn/html/943/2023-11-23/content-4338.html.

[101] Peng Cheng Laboratory (PCL), established in 2018 by Guangdong and Shenzhen governments, is a key instrument in China's state-driven AI development strategy. It aggressively pools resources from government, military-linked industries, and academia to advance AI capabilities, particularly in large language models. PCL provides critical infrastructure for sensitive, compute-intensive AI tasks and collaborates with sanctioned entities like Huawei. Its 'China Computing Net' (C2NET) initiative aims to centralize AI computing resources, potentially facilitating state control and surveillance. These efforts are designed to achieve technological supremacy in AI while circumventing U.S. export controls, raising significant national security concerns. "Profile of Pengcheng Laboratory [鹏城实验室概况]," Peng Cheng Laboratory, https://archive.is/0F7vk; Rebecca Arcesati, "China's AI development model in an era of technological deglobalization," Mercator Institute for China Studies (May 2, 2024), https://www.merics.org/de/studie/chinas-ai-development-model-era-technological-deglobalization.

[102] More specifically, Peng Cheng Laboratory maintains connections with numerous U.S.-sanctioned entities, including China Aerospace Science and Technology Corporation, China Electronics Corporation, China Mobile, China Aerospace Science and Industry Corporation, China Telecom Corporation, and Huawei. The laboratory also collaborates with iFlytek and Intellifusion, which are blacklisted by the U.S. for human rights abuses. These partnerships, ranging from strategic cooperation to joint construction efforts, raise serious concerns about technology transfer and potential military applications of AI technologies developed through these collaborations. See "Strategic Partnerships [战略合作]," Peng Cheng Laboratory, https://web.archive.org/web/20220705210246/https://www.pcl.ac.cn/html/903/. For information on sanctioned entities see China Aerospace Science and Technology Corporation (listed on the Non-SDN Chinese Military-Industrial Complex (CMIC) List, August 2, 2021, and under Department of Defense (DoD) Section 1260H of the National Defense Authorization Act, June 3, 2021), China Electronics Corporation (listed on the Non-SDN CMIC List, August 2, 2021), China Mobile (listed on the Non-SDN CMIC List, August 2, 2021), China Aerospace Science and Industry Corporation (listed on the Non-SDN CMIC List, August 2, 2021, and on the Bureau of Industry and Security (BIS) Entity List, October 9, 2019), China Telecom Corporation (listed on the Non-SDN CMIC List, August 2, 2021, and under DoD Section 1260H), Huawei (listed on the BIS Entity List, May 21, 2019), iFlytek (listed on the BIS Entity List, October 9, 2019), and Intellifusion (listed on the BIS Entity List, June 5, 2020)—see Office of Foreign Assets Control, Non-SDN Chinese Military-Industrial Complex List, issued August 2, 2021; Office of Foreign Assets Control, Reciprocal Sanctions, issued November 12, 2020; Department of Defense, Section 1260H of the William M. ("Mac") Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, issued June 3, 2021; Bureau of Industry and Security, Entity List, issued May 21, 2019; Bureau of Industry and Security, Entity List, issued October 9, 2019; Bureau of Industry and Security, Entity List, issued June 5, 2020.

[103] Documents on File with the Select Committee; Kate O'Keeffe, "Huawei Secretly Backs US Research, Awarding Millions in Prizes," Bloomberg (May 2, 2024), https://www.bloomberg.com/news/articles/2024-05-02/huawei-secretly-backs-us-based-research-with-millions-in-prizes-through-dc-group?embedded-checkout=true.

[104] Zhou Li & Zhong Lin Wang, Research Highlights in the Beijing Institute of Nanoenergy and Nanosystems, 29 Adv. Funct. Mater. 1906059 (2019), https://onlinelibrary.wiley.com/doi/pdf/10.1002/adfm.201906059.

[105] James J. Valdes, Richard S. Potember & Diane M. Kotras, Nanoenergetic Materials for Microscale Tactical Applications, Mil. Rev. Online Exclusive (May 2023), https://www.armyupress.army.mil/Journals/Military-Review/Online-Exclusive/2023-OLE/nanoenergetic/.
[106] Documents on File with the Select Committee.
[107] Documents on File with the Select Committee.
[108] "Documents on File with the Select Committee.
[109] Emily Weinstein, "Mapping China's Sprawling Efforts to Recruit Scientists," Defense One (Nov. 30, 2020), https://www.defenseone.com/ideas/2020/11/mapping-chinas-sprawling-efforts-recruit-scientists/170373/; 科学人生与人生科学--记佐治亚理工学院王中林, Scholars of China (May 2, 2003), https://web.archive.org/web/20240523161902/https://edu.sina.cn/sa/2003-05-02/detail-ikftpnny8649445.d.html.
[110]长江学者奖励计划"第四批讲座教授名单, Chang Jiang Scholars Award Program (Apr. 17, 2010), https://web.archive.org/web/20100417112222/http://www.cksp.edu.cn/news/4/4-20070316-44.htm.
[111] "千人计划"中科院 3 年引进 250 余名海外高层人才, United Front Work Department of the Party Committee of Hunan Institute of Science and Technology (June 26, 2012), https://web.archive.org/web/20240822190502/https://tzb.hnist.cn/info/1732/3990.htm; 领纳米领域产业化世界制高点, Beijing Yanqi Development Zone Administrative Committee (July 23, 2015), https://web.archive.org/web/20240822191055/https://read01.com/OozK06.html.
[112] Between 1992 and 2010, Researcher 4 made approximately 130 trips between the U.S. and China to maintain ongoing collaborations with Chinese scholars. ("在国外时，王中林从未中断过与中国学者的交流。1992 年到 2010 年的 18 年间，他在中美之间的往返记录高达 130 次") *See* 倾数十年打造纳米能源研究体系," Guo Ke Da (Jun. 25, 2022), https://web.archive.org/web/20240822191630/https://wap.sciencenet.cn/mobile.php?type=detail&cat=news&id=481526&mobile=1.
[113] Specifically, Wong served as an "Overseas Review Expert" for CAS, The program was established in 1998 "to encourage outstanding overseas Chinese students to serve their country, fully utilize overseas intellectual resources, and reform and adjust domestic review work to make it more scientific and standardized." For more see "A Brilliant Life: Interview with Professor Zhonglin Wang from the College of Engineering, Peking University," Peking University News (Apr. 19, 2006), https://web.archive.org/web/20240523160426/https://www.coe.pku.edu.cn/newsfocus/fast/4982.html; "List of Overseas Review Experts of the Chinese Academy of Sciences," Overseas Review Experts (2001), https://archive.ph/nYjbZ; Zhonglin Wang, "Decades of Effort in Creating a Nanotechnology Research System," University of Chinese Academy of Sciences (Jun. 25, 2022), https://web.archive.org/web/20240416160813/https://wap.sciencenet.cn/mobile.php?type=detail&cat=news&id=481526&mobile=1; Peking University College of Engineering, "Starting Afresh: The Vigorous Development of the Peking University College of Engineering [而今迈步从头越——蓬勃发展的北京大学工学院]," Peking University College of Engineering (May 2008), https://web.archive.org/web/20240703172451/https://www.coe.pku.edu.cn/Uploads/Bdgxy/Collection/File/2021/09/28/jtgt0ysbkum.pdf.
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[115] "The Basic Information of the Nano Energy Institute [纳米能源所基本情况]," Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, https://web.archive.org/web/20240822200134/http://www.binn.cas.cn/gk/skjj/.
"Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016," Office of the Secretary of Defense (2016), https://dod.defense.gov/Portals/1/Documents/pubs/2016%20China%20Military%20Power%20Report.pdf.
[116] "Shanghai Jiao Tong University – Chinese Defence Universities Tracker," Australian Strategic Policy Institute, https://unitracker.aspi.org.au/universities/shanghai-jiaotong-university/.
[117] "Peking University," Australian Strategic Policy Institute (Nov. 20, 2019), https://unitracker.aspi.org.au/universities/peking-university/; "National Key Laboratory of Science and Technology on Micro/Nano Fabrication [微米/纳米加工技术重点实验室]," Shanghai Jiao Tong

University, https://web.archive.org/web/20180729064751/http://mnfab.sjtu.edu.cn/cn/content.aspx?info_lb=1&flag=1; "Introduction to the School of Information Science and Technology, Peking University, 2010 [2010 年北京大学信息科学技术学院简介]," Sina Education (Apr. 15, 2010), https://web.archive.org/web/20140716175653/http://edu.sina.com.cn/gaokao/2010-04-15/1701243091.shtml.

[118] "Peking University," Australian Strategic Policy Institute (Nov. 20, 2019), https://unitracker.aspi.org.au/universities/peking-university/; "Shanghai Jiao Tong University," Australian Strategic Policy Institute (Nov. 20, 2019), https://unitracker.aspi.org.au/universities/shanghai-jiaotong-university/; "Table of Statistics on Universities Directly Under the Ministry of Education and Their Joint Establishment with Industry Departments [教育部直属高校与行业部门共建情况统计表]," Ministry of Education (Mar. 13, 2014); "Our university has been designated as a university jointly established by the State Administration of Science, Technology and Industry for National Defense and the Ministry of Education [我校被列为国家国防科技工业局和教育部共建高校]," Jingwei News (Jul. 3, 2016), https://web.archive.org/web/20190713190211/https://news.whut.edu.cn/article/72160.html; "The State Administration of Science, Technology and Industry for National Defense and the Ministry of Education have jointly established 16 universities, while 25 universities have been established through local joint efforts [国防科工局与教育部共建 16 所高校，地方共建 25 所]," Thousand Talents Think Tank Network (Aug. 30, 2016), https://web.archive.org/web/20190808043103/http://www.1000thinktank.com/xwh/14611.jhtml.

[119] According to documents provided by Georgia Tech to the Committee, "[w]hile Georgia Tech intended to begin a joint PhD program in Materials Science with Peking University, no students were ever enrolled in this program and it never came to fruition." See Documents on File with Select Committee. "Introduction to the School of Information Science and Technology, Peking University, 2010 [2010 年北京大学信息科学技术学院简介]," Sina Education (Apr. 15, 2010), https://web.archive.org/web/20140716175653/http://edu.sina.com.cn/gaokao/2010-04-15/1701243091.shtml; Documents on File with the Select Committee.

[120] Specifically, these subsidiaries include the Shanghai Academy of Spaceflight Technology and the China Academy of Space Technology. See "Company Profile [公司简介]," Shanghai Institute of Space Power-Source, https://web.archive.org/web/20240822212753/http://www.811sisp.com/newsinfor/p2_47.html?&pageid=2&_id=47&r=0; "Deputy Director of the Surveying, Mapping, and Geoinformation Bureau Visits China Academy of Space Technology to Investigate Progress on the Development of the Gaofen-7 Satellite [测绘地信局副局长到中国空间技术研究院调研高七卫星研制进展]," Surveying, Mapping, and Geoinformation Bureau (Jun. 6, 2017); Lingxiao Gao et al., "A self-powered and self-functional tracking system based on triboelectric-electromagnetic hybridized blue energy harvesting module," Nano Energy (Jun. 2010), https://www.sciencedirect.com/science/article/abs/pii/S221128552030241X; Nuanyang Cui et al., "High performance sound driven triboelectric nanogenerator for harvesting noise energy," Nano Energy (Jul. 2015), https://www.sciencedirect.com/science/article/abs/pii/S2211285515001755.

[121] Yuan Yang et al., "Improved pharmacodynamics of epidermal growth factor via microneedles-based self-powered transcutaneous electrical stimulation," Nature Communications (Nov. 14, 2022), https://pubmed.ncbi.nlm.nih.gov/36376334/; Lulu Zu et al., "Multiangle, self-powered sensor array for monitoring head impacts," Science Advances (2023), https://www.science.org/doi/10.1126/sciadv.adg5152; Hui Liu et al., "A bio-degradable, triboelectric self-stimulated herbal transdermal therapeutic dressing for healing massive chronic wound," Nano Energy (2024), https://www.sciencedirect.com/science/article/abs/pii/S2211285524003331?via%3Dihub.

[122] For example, see Qiang Zheng et al., "In Vivo Self-Powered Wireless Cardiac Monitoring via Implantable Triboelectric Nanogenerator," American Chemical Society (Jun. 2, 2016), https://pubs.acs.org/doi/10.1021/acsnano.6b02693; Ye Ma et al., "Self-Powered, One-Stop, and Multifunctional Implantable Triboelectric Active Sensor for Real-Time Biomedical Monitoring," Nano Letters (Sep. 8, 2016), https://pubs.acs.org/doi/10.1021/acs.nanolett.6b01968; Zhuo Liu et al., "Transcatheter Self-Powered Ultrasensitive Endocardial Pressure Sensor," Advanced Functional

Materials (Nov. 23, 2018), https://onlinelibrary.wiley.com/doi/abs/10.1002/adfm.201807560; Qiang Zheng et al., "Robust Multilayered Encapsulation for High-Performance Triboelectric Nanogenerator in Harsh Environment," ACS Applied Materials & Interfaces (Sep. 22, 2016), https://pubs.acs.org/doi/abs/10.1021/acsami.6b06866; Qiang Zheng et al., "Biodegradable triboelectric nanogenerator as a life-time designed implantable power source," Science Advances (Mar. 4, 2016), https://www.science.org/doi/10.1126/sciadv.1501478; Han Ouyang, "Symbiotic cardiac pacemaker," Nature Communications (Apr. 23, 2019), https://www.nature.com/articles/s41467-019-09851-1; Yang Zhou et al., "A bionic stretchable nanogenerator for underwater sensing and energy harvesting," Nature Communications (Jun. 19, 2019), https://www.nature.com/articles/s41467-019-10433-4.

[123] For example, see Yu Yang et al., "Material's selection rules for high performance triboelectric nanogenerators," Materials Today (2023), https://doi.org/10.1016/j.mattod.2023.03.008; Jianglong Wang et al., "Cylindrical Direct-Current Triboelectric Nanogenerator with Constant Output Current," Advanced Energy Materials (2020), https://doi.org/10.1002/aenm.201904227; Zhijie Xie et al., "Novel sweep-type triboelectric nanogenerator utilizing single freewheel for random triggering motion energy harvesting and driver habits monitoring," Nano Energy (2020), https://doi.org/10.1016/j.nanoen.2019.104360; Qiang Zheng et al., "Towards a sustainable monitoring: A self-powered smart transportation infrastructure skin," Nano Energy (2022), https://doi.org/10.1016/j.nanoen.2022.107245.

[124] For example, see Yu Bai et al., "High-performance triboelectric nanogenerators for self-powered, in-situ and real-time water quality mapping," Nano Energy (2019), https://doi.org/10.1016/j.nanoen.2019.104117; Xixi Yang et al., "Mechanoplastic Tribotronic Floating-Gate Neuromorphic Transistor," Advanced Functional Materials (2020), https://doi.org/10.1002/adfm.202002506; Yu Bai et al., "Self-Powered Gesture Recognition Wristband Enabled by Machine Learning for Full Keyboard and Multicommand Input," Advanced Materials (2022), https://doi.org/10.1002/adma.202200793.

[125] For example, see Guorong Gao et al., "Bioinspired Self-Healing Human–Machine Interactive Touch Pad with Pressure-Sensitive Adhesiveness on Targeted Substrates," Advanced Materials (2020), https://doi.org/10.1002/adma.202004290; Zhaoqi Liu et al., "Fabrication of triboelectric polymer films via repeated rheological forging for ultrahigh surface charge density," Nature Communications (2022), https://doi.org/10.1038/s41467-022-31822-2; Wenda Ma et al., "Piezoelectricity in Multilayer Black Phosphorus for Piezotronics and Nanogenerators," Advanced Materials (2020), https://doi.org/10.1002/adma.201905795.

[126] Google Patents, Search for inventor: "王中林" and assignee: "北京纳米能源与系统研究所," https://patents.google.com/?inventor=%22%E7%8E%8B%E4%B8%AD%E6%9E%97%22&assignee=%E5%8C%97%E4%BA%AC%E7%BA%B3%E7%B1%B3%E8%83%BD%E6%BA%90%E4%B8%8E%E7%B3%BB%E7%BB%9F%E7%A0%94%E7%A9%B6%E6%89%80 (last visited Aug. 22, 2024).

[127] CN-106602922-B, A kind of tubulose friction nanometer power generator and apply its cloth and energy shoes, Beijing Institute of Nanoenergy and Nanosystems, filed June 23, 2016, issued September 14, 2018, https://patents.google.com/patent/CN106602922B/en; CN-106308800-A, A respiration monitoring device, Beijing Institute of Nanoenergy and Nanosystems, filed June 17, 2015, published January 11, 2017, https://patents.google.com/patent/CN106308800A/en.

[128] In addition to CAS, such institutions include Tsinghua University, Peking University, and Huazhong University of Science and Technology – all of which are administered by SASTIND. *See* 王中林院士荣获国际科学技术合作奖, Yanqi Development Zone (Jan. 21, 2014), https://web.archive.org/web/20240703202917/http://www.basic.cas.cn/xwdt/xwsm/201401/t20140121_4026450.html; "Statistics of Joint Construction between Directly Affiliated Universities of the Ministry of Education and Industry Departments," PRC Ministry of Education (2019), https://web.archive.org/web/20191113061730/http://www.moe.gov.cn/s78/A08/gjs_left/s7187/s7189/201403/t20140313_165432.html; "The State Administration of Science, Technology and Industry for National Defense and the Ministry of Education jointly established 16 universities, with 25 additional universities established in cooperation with local governments [国防科工局与教育部共建 16 所高校，地方共建 25 所]," Thousand Talents Think Tank Network (Aug. 30, 2016), https://web.archive.org/web/20190808043103/http:/www.1000thinktank.com/xwh/14611.jhtml.

[129] Documents on File with the Select Committee.

[130] Documents on File with the Select Committee.

[131] In the research paper, a GT researcher thanked the Georgia Tech Research Institute (GTRI), which is a DOD University Affiliated Research Center, for its financial support. *Ultrahigh-mobility semiconducting epitaxial graphene on silicon carbide*, 625 NATURE 60, 61 (2024); *UARC*, GEORGIA TECH RSRCH. INST., https://www.gtri.gatech.edu/about/working-with-gtri/contract-vehicles/uarc (last visited Feb. 14, 2024); Documents on File with the Select Committee. Georgia Tech stated that the GTRI support referenced was work performed by a GTRI-funded post-doc to verify the work of the researchers at the Nano Center, and that the GTRI-funded post-doc was at Georgia Tech at the time that research was completed. *See also* Documents on File with the Select Committee (thanking the Department of Energy and National Science Foundation for funding graphene research between Tianjin and GT).

[132] "Federally Funded Research and Development Centers (FFRDC) and University Affiliated Research Centers (UARC)," DOD Research & Engineering Enterprise, https://rt.cto.mil/ffrdc-uarc/.

[133] Documents on File with the Select Committee.

[134] Tianjin University identified Researcher 5 as the Director of the Nano Center in 2016 and 2018, and he was listed as a faculty member on the Nano Center's website in 2020 but was no longer mentioned there as of August 2024. Documents on File with the Select Committee.

[135] The "Acknowledgement" section of a paper published in 2024 notes that "most of the work reported here was performed at the Tianjin International Center for Nanoparticles and Nanosystems" the Nano Center, which was "established in 2015 by [Researcher 5] and" a colleague at Tianjin University. The center, "designed by [Researcher 5] and constructed by" the colleague, features a "comprehensive dedicated epigraphene laboratory" that complements the Georgia Institute of Technology's epigraphene project. The section further acknowledges that Researcher 5 served as the Nano Center's director until 2020 and now acts as the scientific advisor for its epigraphene projects. Documents on File with the Select Committee.

[136] Tianjin University identified Researcher 5 as the Director of TICNN in 2016 and 2018, and he was listed as a faculty member on TICNN's website in 2020 but was no longer mentioned there as of August 2024. Documents on File with the Select Committee.

[137] TICNN's explicit focus on advancing China's ambitions, coupled with the limited mention of reciprocal benefits for the United States, alongside the presence of United Front officials at TICNN's inauguration among other Party officials, raises concerns about potential CCP influence and technology transfer through the academic partnership. See "Center Introduction [中心介绍]," Tianjin International Center for Nanoparticles and Nanosystems, https://web.archive.org/web/20240702134644/https://ticnn.tju.edu.cn/zxjs.htm; "Tianjin University hosts the First Tianjin Epitaxial Graphene International Forum and the International Research Center for Tianjin Nanoparticles and Nano Systems Unveiling Ceremony [天津大学举办第一届天津外延石墨烯国际论坛暨天津纳米颗粒与纳米系统国际研究中心挂牌仪式]," Tianjin University (Jul. 22, 2018), https://web.archive.org/web/20240411162316/https:/news.tju.edu.cn/info/1003/39947.htm; "Memorandum: United Front 101," United States House Select Committee on Strategic Competition between the United States and the Chinese Communist Party (2023), https://selectcommitteeontheccp.house.gov/sites/evo-subsites/selectcommitteeontheccp.house.gov/files/evo-media-document/uf-101-memo-final-pdf-version.pdf.

[138] Alex Joske, "The China Defence Universities Tracker," Australian Strategic Policy Institute (Nov. 25, 2019). For more details see "Li Lingxia Team Introduction [李玲霞团队介绍]," Tianjin University (Aug. 23, 2019), https://web.archive.org/web/20190823085326/http:/sme.tju.edu.cn/kxyanjiu/kxyjtstd/201706/t20170612_295973.html; Documents on File with the Select Committee; Zou, Ji-jun, Guo, Cheng, Zhang, Xiang-wen, Wang, Li, and Mi, Zhen-tao. "High-Density Liquid Hydrocarbon Fuels for Aerospace Propulsion: Synthesis and Application [航天推进用高密度液体碳氢燃料: 合成与应用]." 天津大学 化工学院/先进燃料与化学推进剂教育部重点实验室, Tianjin University (May 30, 2019), https://archive.fo/0lEb6#selection-383.0-1347.5.

[139] Addition of Entities to the Entity List, Revision of Entry on the Entity List, and Removal of Entities From the Entity List, 84 Fed. Reg. 83416 (Dec. 22, 2020); *Tianjin University*, AUSTL. STRATEGIC POL'Y INST, https://unitracker.aspi.org.au/universities/tianjin-university/ (last visited Feb. 27, 2024).

[140] The initial grant of $600,000, awarded in June 2013, supported Researcher 5's work on the metallic properties of nanoscale materials. This study spanned nearly eight years, concluding in May 2021. Documents on File with the Select Committee.
[141] Documents on File with the Select Committee.
[142] "At the Edge of Graphene-Based Electronics," by Catherine Barzler, Georgia Institute of Technology (Dec. 20, 2022), https://web.archive.org/web/20221220085326/https://news.gatech.edu/news/2022/12/20/edge-graphene-based-electronics. For further context, see Prudkovskiy, V.S., Hu, Y., Zhang, K., et al. "An epitaxial graphene platform for zero-energy edge state nanoelectronics," Nature Communications, vol. 13, article no. 7814 (2022). DOI: 10.1038/s41467-022-34369-4.
[143] The grant states specifically, "Electronic transport measurements will be carried out in the Tianjin International Center of Nanoparticle and Nanosystem, directed by [Researcher 5], a noted expert on epitaxial graphene. This program will advance graphene nanoribbons as a new-age electronic interconnect, poised to replace copper wiring in microelectronics and even the electronic devices themselves." Documents on File with the Select Committee.
[144] Documents on File with the Select Committee.
[145] Documents on File with the Select Committee.
[146] "About Us," Beijing 718 Yousheng Electronics Co., Ltd., https://web.archive.org/web/20200524235304/http://www.nssc.cas.cn/xwdt2015/zhxw2015/201511/P020151102548330456589.pptx; "About Us," Tianjin International Center for Nanoparticles and Nanosystems, https://web.archive.org/web/20240630221822/https://ticnn.tju.edu.cn/about_us.htm; "Research Team," Bright Stone Industrial Technology Research Institute, https://web.archive.org/web/20240630220441/http://www.brightstone-itri.com/weina/team; "Center Introduction," Tianjin International Center for Nanoparticles and Nanosystems, https://web.archive.org/web/20240630223944/https://ticnn.tju.edu.cn/zxjs.htm; "Research Center Overview," Tianjin University (Yantai) Graphene (Nano) New Materials Joint Laboratory, https://web.archive.org/web/20240630222825/http://www.brightstone-iat.com/shimoxi/; "Research Center Overview," Tianjin University (Yantai) Graphene (Nano) New Materials Joint Laboratory, https://web.archive.org/web/20240630222825/http://www.brightstone-iat.com/shimoxi/.
[147] Documents on file with the Select Committee.
[148] https://techcrunch.com/2024/05/28/chinas-47b-semiconductor-fund-puts-chip-sovereignty-front-and-center/
[149] In 2019, Researcher 5's Tianjin lab created a joint laboratory with Bright Stone Innovation Group, whose subsidiaries work directly with the PLA. One subsidiary works with the blacklisted China Shipbuilding Industry Corporation's 702 Research Institute, and another runs a Manned Pressure Chamber Engineering Technology Research Institute alongside the PLA's Naval Medical University and the China Shipbuilding Industry Corporation. See "Addition of Entities to the Entity List, Revision of Entry on the Entity List, and Removal of Entities From the Entity List," Bureau of Industry and Security (Dec. 22, 2020), https://www.federalregister.gov/documents/2020/12/22/2020-28031/addition-of-entities-to-the-entity-list-revision-of-entry-on-the-entity-list-and-removal-of-entities; "About Us," Bright Stone Institute of Advanced Technology, https://web.archive.org/web/20240512131941/http:/www.brightstone-iat.com/a/about/; "Research Institute System [研究院体系'," Bright Stone Industrial Technology Research Institute, https://web.archive.org/web/20240512131306/http:/www.brightstone-itri.com/yanjiuyuan/zairenyalicangchany/.
[150] Documents on File with the Select Committee; 天津大学纳米中心半导体石墨烯研究取得新突破],"Tianjin University (Jan. 4, 2024), https://archive.ph/BY0LA; 天津大学纳米中心半导体石墨烯研究取得新突破, Xinhua (Jan. 6, 2024), https://archive.ph/9MqzF.
[151] Documents on File with the Select Committee.
[152] Documents on File with the Select Committee.
[153] Researcher 6 has referred to his Thousand Talents award as the "Qian Ren Program." "Qian Ren" (千人) is the Chinese pinyin romanization for "Thousand Talents." Documents on File with the Select Committee.
[154] 东北大学流程工业综合自动化国际合作联合实验室外方主任 教授获得"2017 年辽宁友谊奖"荣誉称, Northeastern University (Sep. 30, 2017), https://kknews.cc/zh-cn/science/m2l6jqp.html; "The Ministry

of Education and the State Administration of Foreign Experts Affairs Notice on the Issuance of the "Implementation and Management Measures for the Discipline Innovation and Intelligence Introduction Program in Higher Education Institutions [教育部外专局关于印发《高等学校学科创新引智计划实施与管理办法》的通知]," Ministry of Education (Nov. 3, 2016), https://web.archive.org/web/20240805155154/https://www.gov.cn/gongbao/content/2017/content_5210517.htm; "Two Departments Decide to Jointly Implement the 'Discipline Innovation and Intelligence Introduction Program for Higher Education Institutions' [两部门决定联合实施"高等学校学科创新引智计划"]," State Administration of Foreign Experts Affairs (Sep. 1, 2006), https://web.archive.org/web/20240805155628/https://www.gov.cn/gzdt/2006-09/01/content_375414.htm.

[155] *See id.*

[156] Documents on File with the Select Committee.

[157] Documents on File with the Select Committee.

[158] "Documents on File with the Select Committee.

[159] *See* supra note 154.

[160] The 35th Youth Academic Annual Conference of Chinese Association of Automation, Final Program, Zhanjiang, China, Oct. 16-18, 2020, https://www.caayac.org/wp-content/uploads/2020/10/YAC%E7%A8%8B%E5%BA%8F%E5%86%8Cfinal.pdf.

[161] Hao Liu et al., "Robust Formation Control for Multiple Quadrotors With Nonlinearities and Disturbances," IEEE (Oct. 25, 2018), https://ieeexplore.ieee.org/document/8509160/authors#authors; Hao Liu et al., "Robust Distributed Formation Controller Design for a Group of Unmanned Underwater Vehicles," IEEE (Feb. 2021), https://ieeexplore.ieee.org/document/8645814; Hao Liu et al., "Robust Formation Tracking Control for Multiple Quadrotors Subject to Switching Topologies," IEEE (Sep. 2020), https://ieeexplore.ieee.org/document/9013071; Hao Liu et al., "Robust formation flying control for a team of satellites subject to nonlinearities and uncertainties," Aerospace Science and Technology (Dec. 2019), https://www.sciencedirect.com/science/article/abs/pii/S1270963818328530?via%3Dihub; Hao Liu et al., "Robust Tracking Control for Tail-Sitters in Flight Mode Transitions," IEEE (Aug. 2019), https://ieeexplore.ieee.org/document/8531752.

[162] Documents on file with the Select Committee.

[163] "Graphical Games and Distributed Reinforcement Learning Control in Human- networked Multi-group Societies," Defense Technical Information Center, https://dtic.dimensions.ai/details/grant/grant.9290328?or_facet_funder_country=US&or_facet_researcher=ur.01154751000.38.

[164] "Graphical Games and Distributed Reinforcement Learning Control in Human- networked Multi-group Societies," Defense Technical Information Center, https://dtic.dimensions.ai/details/grant/grant.8100931?or_facet_funder_country=US&or_facet_researcher=ur.01154751000.38

[165] "Graphical Games and Distributed Reinforcement Learning Control in Human- networked Multi-group Societies," Defense Technical Information Center, https://dtic.dimensions.ai/details/grant/grant.7674115?or_facet_funder_country=US&or_facet_researcher=ur.01154751000.38

[166] "Georgia Tech to Exit Georgia Tech Shenzhen Institute," Georgia Institute of Technology (Sep. 6, 2024), https://news.gatech.edu/news/2024/09/06/georgia-tech-exit-georgia-tech-shenzhen-institute; "Moolenaar on Georgia Tech's Decision to Cut Ties with Tianjin University," The Select Committee on the Chinese Communist Party (Sep. 10, 2024), https://selectcommitteeontheccp.house.gov/media/press-releases/moolenaar-georgia-techs-decision-cut-ties-tianjin-university.

[167] *Regulations of the People's Republic of China on Chinese-Foreign Cooperation in Running Schools: Article 3 [中华人民共和国中外合作办学条例]*, MINISTRY OF EDUC. FOREIGN AFFS. SUPERVISION INFO. NETWORK,, https://web.archive.org/web/20240714181631/https://www.crs.jsj.edu.cn/news/index/2 (last visited Aug. 28, 2024). These regulations were promulgated by the State Council on February 19, 2003, and went into effect on September 1, 2003).

[168] *See List of Chinese-Foreign Cooperative Education Institutions and Programs at the Master's Level and Above (Including Cooperative Education Institutes and Projects in Hong Kong, Macao, and Taiwan) [硕士及*

以上中外合作办学机构与项目(含内地与港台地区合作办学机构与项目)名单], MINISTRY OF EDUC. FOREIGN AFFS. SUPERVISION INFO. NETWORK (July 15, 2024), https://web.archive.org/web/20240715150438/https://www.crs.jsj.edu.cn/aproval/orglists/1; *List of Chinese-Foreign Cooperative Education Institutions and Programs at the Master's Level and Above (Including Cooperative Education Institutes and Projects in Hong Kong, Macao, and Taiwan) [硕士及以上中外合作办学机构与项目(含内地与港台地区合作办学机构与项目)名单]*, MINISTRY OF EDUC. FOREIGN AFFS. SUPERVISION INFO. NETWORK (July 15, 2024), https://web.archive.org/web/20240715150352/https://www.crs.jsj.edu.cn/aproval/orglists/2.

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[171] *See* Christopher Bing & Jack Stubbs, *Chinese Hackers Targeted U.S. Firms, Government After Trade Mission: Researchers*, REUTERS (Aug. 16, 2018), https://www.reuters.com/article/us-usa-china-cyber/chinese-hackers-targeted-u-s-firms-govt-after-trade-mission-researchers-idUSKBN1L11D2/.

[172] *Regulations of the People's Republic of China on Chinese-Foreign Cooperation in Running Schools: Article 21 [中华人民共和国中外合作办学条例]*, *supra* note 167.

[173] *Id.*

[174] *Measures for the Implementation of the Regulations on Chinese-Foreign Cooperation in Running Schools: Article 2 [中华人民共和国中外合作办学条例实施办法]*.

[175] *Measures for the Implementation of the Regulations on Chinese-Foreign Cooperation in Running Schools: Article 12 [中华人民共和国中外合作办学条例实施办法]*.

[176] *Regulations of the People's Republic of China on Chinese-Foreign Cooperation in Running Schools: Article 30 [中华人民共和国中外合作办学条例]*, *supra* note 167.

[177] *Higher Education Law of the People's Republic of China: Articles 39, 51, 58 [中华人民共和国高等教育法]*.

[178] "Qingshen Twenty Years [清深二十载]," edited by the Tsinghua University Shenzhen International Graduate School, Tsinghua University Press, https://web.archive.org/web/20240724145445/http://www.tup.tsinghua.edu.cn/upload/books/yz/091836-01.pdf.

[179] "Dual Degree Master's Program Handbook [双学位硕士项目手册]," Tianjin University-Georgia Tech Shenzhen Institute (Nov. 2022), https://web.archive.org/web/20240724145218/https://www.gtsi.edu.cn/sites/default/files/2022-11/%E5%8F%8C%E5%AD%A6%E4%BD%8D%E7%A1%95%E5%A3%AB%E9%A1%B9%E7%9B%AE%E6%89%8B%E5%86%8C-%E5%88%86%E9%A1%B5.pdf.

[180] *See Notification from the Shenzhen Municipal Education Bureau and the Shenzhen Municipal Development and Reform Commission on Issuing the 13th Five-Year Plan for the Development of Higher Education in Shenzhen [深圳市教育局 深圳市发展改革委关于印发深圳市高等教育发展"十三五"规划的通知]*, SHENZHEN MUN. EDUC. BUREAU (Dec. 8, 2016), https://web.archive.org/web/20240713101644/http://www.sz.gov.cn/szzt2010/wgkzl/jcgk/jchgk/content/mpost_1328724.html; *Shenzhen Science and Technology Innovation 14th Five-Year Plan [深圳市科技创新"十四五"规划]*, Shenzhen Science and Technology Innovation Committee (Jan. 12, 2022), https://stic.sz.gov.cn/attachment/0/998/998076/9936177.pdf.

[181] Article 57 of the Regulations for the Implementation of the Law on the Promotion of Private Education of the People's Republic of China allows for special funding for private education development, which Article 67 extends to Chinese-foreign cooperatively run schools. See *Regulations*

for the Implementation of the Law on the Promotion of Private Education of the People's Republic of China: Articles 57, 67 [中华人民共和国民办教育促进法实施条例], GUANGXI ZHUANG AUTONOMOUS REGION EDUC. DEP'T (May 18, 2021, 11:07 A.M.), https://web.archive.org/web/20240724110833/http://jyt.gxzf.gov.cn/zfxxgk/zc/gjfg/t8900988.shtml.

[182] Li Modi, *Academic Paper: Cultivation of International Talents in Sino-Foreign Cooperation in Higher Education [高校中外合作办学中国际化人才的培养]*, SCH. OF CONTINUING EDUC. TSINGHUA UNIV. (Aug. 9, 2012), /web/20240829165839/https://www.sce.tsinghua.edu.cn/info/1032/2746.htm.

[183] *President Gu Led a Delegation to the United States for Recruitment and Met with Alumni in San Francisco, Boston, and New York*, TSINGHUA ALUMNI ASS'N (Mar. 25, 2009), https://web.archive.org/web/20240118172329/https://www.tsinghua.org.cn/info/1012/2196.htm; *Reaping Rich Rewards! GTSIers Take You on a Journey to Explore Amazon Cloud Technology [收获满满！GTSIers 带你探秘亚马逊云科技]*, *supra* note 141.

[184] Documents on file with the Select Committee.

[185] *See* Wei Feifei, *Yang Weikun, Deputy Mayor of Baoding City, Hebei Province, and His Delegation Visited TBSI*, TSINGHUA-BERKELEY SHENZHEN INST. (Aug. 30, 2017), /web/20240829162340/http://www.tbsi.edu.cn/2017/0830/c3694a25119/page.htm.

[186] "Tsinghua-Berkeley Shenzhen Institute has adhered to the concept of 'industrialization of scientific research results' since its establishment. By setting up the institute in an industrial park and hiring industry elites as industrial mentors, it has made full use of Shenzhen's advantages in innovation and entrepreneurship to realize industrialization. Deep integration of learning and research." *See* Wei Feifei, *Tsinghua-Berkeley, Running at the Same Pace as Shenzhen [韦菲菲, "清华—伯克利，和深圳同速奔跑]*, China Education Daily (Apr. 8, 2017), https://web.archive.org/web/20231004213847/https://webcache.googleusercontent.com/search?q=cache:TkmALKTP3x4J:www.hinews.cn/news/system/2017/04/08/031051499.shtml&cd=17&hl=en&ct=clnk&gl=us. *See also Assisting Young People in Innovation and Entrepreneurship-Summit Forum on the Integrated Development Strategy of Communities, Universities, and Enterprises*, TSINGHUA-BERKELEY SHENZHEN INST. (Dec. 7, 2018), /web/20240829165258/http://www.tbsi.edu.cn/2018/1207/c3694a25319/page.htm .

[187] Documents on file with the Select Committee.

[188] U.S. DEP'T OF STATE, 5G SECURITY: HUAWEI: MYTH VS. FACT (2020), https://www.state.gov/wp-content/uploads/2020/11/5G-MythvsFact-508.pdf. Huawei Consumer BG President Richard Yu is on the Industry Advisory Board at TBSI. *IAB*, TSINGHUA-BERKELEY SHENZHEN INST., https://web.archive.org/web/20230127173937/https://www.tbsi.edu.cn/4770/list.htm (last visited Aug. 29, 2024).

[189] *See TBSI Future Internet Research Laboratory Won the Best Paper Award at the IEEE/ACM IWQoS International Conference*, TSINGHUA-BERKELEY SHENZHEN INST. (June 11, 2018), https://www.tbsi.edu.cn/2018/0611/c3694a25215/page.htm; *Documents on File with the Select Committee.*; Lei Han et al., *Learning Residual Color for Novel View Synthesis*, IEEE XPLORE (Mar. 2, 2022), https://ieeexplore.ieee.org/abstract/document/9725268.

[190] Heming Liu et al., *Observation on Microenvironment Changes of Dynamic Catalysts in Acidic Co2 Reduction*, 146 J. AM. CHEM. SOC'Y 5333 (2024); Zhenyang Li et al., *Breaking Filter Bubble: A Reinforcement Learning Framework of controllable Recommender System*, ACM DIGITAL LIBRARY (Apr. 30, 2023), https://dl.acm.org/doi/abs/10.1145/3543507.3583856; Dugang Liu et al., *DIWIFT: Discovering Instance-Wise Influential Features for Tabular Data*, ARXIV, https://arxiv.org/abs/2207.02773 (Feb. 11, 2023); Jiashuo Fan et al., *UCC: Uncertainty Guided Cross-Head Co-Training for Semi-Supervised Semantic Segmentation*, ARXIV, https://arxiv.org/abs/2205.10334 (Feb. 23, 2023).

[191] *See* Riwei Liao et al., *Estimation and Extraction of the Aerosol Complex Regractive Index Based on Stokes Vector Measurements*, OPTICA PUBL'G GRP. (Sept. 30, 2019), https://opg.optica.org/ol/abstract.cfm?uri=ol-44-19-4877; Diane Bartz & Alexandra Alper, *U.S. Bans New Huawei, ZTE Equipment Sales, Citing National Security Risk*, REUTERS (Nov. 30, 2022, 11:13 P.M.), https://www.reuters.com/business/media-telecom/us-fcc-bans-equipment-sales-imports-zte-huawei-over-national-security-risk-2022-11-25/.

[192] *Xu Zun*, BGI: LEADERSHIP, /web/20240829174213/https://en.genomics.cn/team/info.aspx?itemid=1929 (last visited Aug. 29, 2024);

Linlin Zhang et al., *Clinical and Translational Values of Spatial Transcriptomics*, OPEN ALEX (2022), https://openalex.org/works/w4221114856.

[193] Kirsty Needham & Clare Baldwin, *China's Gene Giant Harvests Data from Millions of Women*, REUTERS (July 7, 2021, 12:00 P.M.), https://www.reuters.com/investigates/special-report/health-china-bgi-dna/.

[194] Additions and Revisions of Entities to the Entity List, 88 Fed. Reg. 43 (Mar. 6, 2023).

[195] Specifically, there was a strategic cooperation framework agreement signed between Tsinghua-Berkeley Shenzhen Institute (TBSI), Tsinghua Shenzhen International Graduate School (TSIGS), Tongfang Co., Ltd., and the Heshan Municipal Government on November 2, 2018. The agreement focused on fostering deep integration of government, industry, academia, and research ("政产学研深融合") and promoting the industrialization of research outcomes ("推动清华大学的先进技术和优秀成果在鹤山实现产业化"). See Documents on file with Select Committee; Liang Liqin, *"Jianghe" Cooperation Has a New Move! This Big Thing Done by Jiangmen Has Swept the Screen!*, THE PAPER (Dec. 21, 2018, 12:53 PM.), https://web.archive.org/web/20231017134737/https://m.thepaper.cn/newsDetail_forward_2821253; Heshan Science, Industry and Commerce Bureau, "Our City and Tsinghua's Deep Integration of Government, Industry, and Academia: Exploring New Paths for Innovation Development [我市与清华政产学研深融合 探索创新发展新路径]," Heshan Science, Industry and Commerce Bureau (Nov. 3, 2018), https://web.archive.org/web/20231016172028/http:/www.heshan.gov.cn/zwdt/hsxw/content/post_236255.html.

[196] In 2016, a Tongfang wholly-owned subsidiary announced an initiative to invest 150 million yen to help launch a fund to "support the transformation of scientific research results" of TBSI. It is unclear whether this plan came to fruition. *See Tongfang Co., Ltd.: Announcement on the Transfer of the Capital Contribution of Liangwan Fund to Its Wholly-Owned Subsidiary and Related Transactions*, SOHU (July 15, 2017), https://q.stock.sohu.com/cn,gg,600100,2526996260.shtml; *Nanshan District's First Mass Entrepreneurship and Innovation Fund is About to Launch*, SHENZHEN HUITONG FIN. HOLDINGS FUND INV. CO., LTD. (NOV. 30, 2016) https://web.archive.org/web/20231004192906/https://webcache.googleusercontent.com/search?q=cache:WpFpPL_3CLEJ:www.szhtjk.com/NewsStd_719.html&cd=17&hl=en&ct=clnk&gl=us. Per the dean of TBSI, the fund would be designed to "take advantage of Tsinghua-Berkeley Shenzhen Institute's 'industry-university-research-funding' combination, combining the rich project resources of universities and research institutes with government and social capital, professional consulting and management teams, etc., to provide innovation and entrepreneurship for university talents." *Tsinghua-Berkeley, Running at the Same Speed as Shenzhen*, HAINAN NANHAI NET MEDIA CO., LTD. (Apr. 8, 2017, 11:43 A.M.), https://web.archive.org/web/20231004213847/https://webcache.googleusercontent.com/search?q=cache:TkmALKTP3x4J:www.hinews.cn/news/system/2017/04/08/031051499.shtml&cd=17&hl=en&ct=clnk&gl=us.

[197] In 2016, TBSI signed a sponsored research agreement with Huarongtai, also known asr Warranty Asset Management Company, to provide $19 million in funding support for TBSI activities in Berkeley. Documents on File with the Select Committee. That year, Tongfang planned to acquire at least 40 percent of Huarongtai equity from Tsinghua Holdings. See Tongfang Co., Ltd., "Documents of the First Extraordinary General Meeting of Shareholders in 2016 [2016 年第一次临时股东大会文件]," Tongfang Co., Ltd. (Feb. 2016), https://web.archive.org/web/20240918192442/http://www.sse.com.cn/disclosure/listedinfo/announcement/c/2016-02-16/600100_20160216_1.pdf. In addition, the former vice chairman and president of the board at Tongfang, Huang Yu, also served as chairman of Huarongtai from 2009 to at least 2018. See Shenzhen Nanshan SSBay Private Equity Fund Management Co.Ltd., LinkedIn (Accessed on 18 September, 2024), https://www.linkedin.com/company/shenzhen-nanshan-ssbay-private-equity-fund-management-co-ltd/about/

[198] Documents on file with Select Committee

[199] *See IAB*, *supra* note 162.

[200] EMILY S. WEINSTEIN, TESTIMONY BEFORE THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION ON "U.S. INVESTMENT IN CHINA'S CAPITAL MARKETS AND MILITARY-INDUSTRIAL COMPLEX" (2021), https://cset.georgetown.edu/wp-content/uploads/Weinstein_Testimony_March2021.pdf. Tongfang is partially owned by the China National Nuclear Corporation, which oversees the PRC's military and civilian nuclear programs. *Hina National Nuclear Corporation*, CHINA DEFENCE UNIVS. TRACKER, https://unitracker.aspi.org.au/universities/china-national-nuclear-corporation/ (Feb. 8, 2022). Tongfang has a "Military Information Security Product certification, which is required for companies that support the PLA." *SOS International Report Details Chinese State-Owned YMTC's Military Ties*, CHINA TECH THREAT (May 6, 2021), https://chinatechthreat.com/sos-international-report-details-chinese-state-owned-ymtcs-military-ties/.

[201] Tongfang owns numerous other PLA supplier entities, including: 100% owned Tongfang Industry Co., is registered as a supplier on a military procurement platform and has submitted dozens of bids to contract with the PLA. One-hundred percent owned Beijing Tongfang Software Company Limited is a PLA supplier that has contracted with the PLA's Strategic Support Force. One-hundred percent owned Tongfang Jiangxin Shipbuilding is a registered supplier on a military procurement platform and has submitted multiple bids to the PLA Navy and Armed Police Force.

[202] Addition of Entities to the Entity List, Revision of Entry on the Entity List, and Removal of Entities from the Entity List, 85 Fed. Reg. 246 (Dec. 22, 2020).

[203] Addition of Certain Entities to the Entity List; Revision of Existing Entry on the Entity List Removal of Entity from the Unverified List; and Addition of Entity to the Military End-User (MEU) List, 86 Fed. Reg. 130 (July 12, 2021).

[204] *See* Hao Wu et al., *Robust Load Restoration Optimization of Power System Considering the Spatial-Temporal Correlation of Wind Power*, SCIENCEDIRECT (May 2023), https://www.sciencedirect.com/science/article/abs/pii/S0142061522008511; Li Yiming, *Overlay Metrology for Lithography Machine*, KNOWELDGE NETWORK NODE (2022), https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2022&filename=JGDJ202209022.

[205] *See Strategic Cooperation*, PENGCHENG LABORATORY, https://web.archive.org/web/20220705210246/https://pcl.ac.cn/html/903/ (last visited Aug. 29, 2024); *Pengcheng Laboratory and Harbin Institute of Technology Signed a Strategic Cooperation Agreement*, PENGCHENG LABORATORY (Dec. 2, 2022), https://web.archive.org/web/20240521141236/https://pcl.ac.cn/html/944/2022-12-02/content-4146.html; Liu Chuanshu, *Pengcheng Laboratory Signs Contract with Research Institutes and National Key Laboratories for Co-Construction*, SCI. & TECH. DAILY (Oct. 11, 2018), https://web.archive.org/web/20240521143549/http://stdaily.com/02/difangyaowen/2018-10/11/content_719676.shtml.

[206] *See Pengcheng-China Mobile Technology Innovation Fund*, PENGCHENG LABORATORY, https://web.archive.org/web/20240521142854/https://pcl.ac.cn/html/1029/ (last visited Aug. 29, 2024); *Pengcheng Hongyan*, PENGCHENG LABORATORY (Apr. 18, 2024), https://web.archive.org/web/20240521142813/https://pcl.ac.cn/html/1030/2024-04-18/content-4294.html; *Pengcheng Cloud Brain*, PENGCHENG LABORATORY (Nov. 17, 2022), https://web.archive.org/web/20240521142817/https://pcl.ac.cn/html/1030/2022-11-17/content-3876.html; *Pengcheng Shooting Range*, PENGCHENG LABORATORY (Oc. 20, 2021), https://web.archive.org/web/20240521142823/https://pcl.ac.cn/html/1030/2021-10-20/content-3879.html; WM. C. HANNAS ET AL., CHINA'S ADVANCED AI RESEARCH: MONITORING CHINA'S PATHS TO "GENERAL" ARTIFICIAL INTELLIGENCE (2022), https://cset.georgetown.edu/wp-content/uploads/Chinas-Advanced-AI-Research.pdf.

[207] *See* Yiming Li et al., *Backdoor Learning: A Survey*, ARXIV, https://arxiv.org/pdf/2007.08745 (Feb. 16, 2022); Ruoyu Li, *ARDIoT: An Edge-Assisted Anomaly Detection Framework Against IoT-Based Network Attacks*, IEEE XPLORE (Oct. 22, 2021), https://ieeexplore.ieee.org/document/9585043/authors#authors; Yuan Zhang et al., *Optical Communication and Positioning Convergence for Flexible Underwater Wireless Sensor Network*, IEEE XPLORE (Apr. 4, 2023), https://ieeexplore.ieee.org/document/10092387/authors#authors.

[208] *See* Jiarong Li, *A Triboelectric Gait Sensor System for Human Activity Recognition and User Identification*, SCIENCEDIRECT (July 2023), https://www.sciencedirect.com/science/article/abs/pii/S2211285523003105.
[209] "Twenty Years of Tsinghua University Shenzhen International Graduate School," Tsinghua University Press, April 2021, pp. 200-201, https://web.archive.org/web/20240918192735/http://www.tup.tsinghua.edu.cn/upload/books/yz/091836-01.pdf.
[210] "Twenty Years of Tsinghua University Shenzhen International Graduate School," Tsinghua University Press, April 2021, https://web.archive.org/web/20240918192735/http://www.tup.tsinghua.edu.cn/upload/books/yz/091836-01.pdf.
[211] *See Kang Feiyu*, SCH. OF MATERIALS SCI. & ENG'G, TSINGHUA UNIV., https://www.mse.tsinghua.edu.cn/mseen/info/1018/1094.htm (last visited Aug. 29, 2024); *PI: Tsinghua*, TSINGHUA-BERKELEY SHENZHEN INST., https://www.tbsi.edu.cn/english/_t79/PI/list.psp (last visited Aug. 29, 2024).
[212] *Tsinghua SIGS Will Shoulder the Heavy Responsibility of Building a Pilot Demonstration Zone in Shenzhen*, TSINGHUA-BERKELEY SHENZHEN INST. (Sept. 2, 2019), https://www.tbsi.edu.cn/_t23/2019/0902/c3695a27310/page.psp; *SIGS: College Overview*, TSINGHUA SHENZHEN INT'L GRADUATE SCH., https://www.sigs.tsinghua.edu.cn/xygk/list.htm (last visited Aug. 29, 2024).
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[341] *See SCUPI Journal-SCOOP*, *supra* note 278.

[342] *See Tempering Perseverance and Character, Showing Aerospace Style—the 2018 Military Training of the Aerospace Academy Has Been Successfully Completed*, SCH. OF AERONAUTICS & ASTRONAUTICS, SICHUAN UNIV. (July 18, 2019), https://web.archive.org/web/20240904161307/http://saa.scu.edu.cn/info.htm?id=2011561442634198&c=1821493791917254; *The School of Textiles and Food Held a Mobilization Meeting for the Military Training of the 2014 Undergraduate Students*, COLL. OF BIOMASS SCI. & ENG'G (July 3, 2015), https://web.archive.org/web/20240520185921/https://qfsp.scu.edu.cn/info/1041/4255.htm; Chen Xiaojuan, *Without Struggle, There is No Youth; Without Strength, There is No Talen—The 2019 Military Training Mobilization Meeting of the School of Electronic Information Was Successfully Held*, SICHUAN UNIV. COLL. OF ELECS. & INFO. ENG'G (July 6, 2021), https://web.archive.org/web/20240520190158/https://eie.scu.edu.cn/info/1056/9055.htm.

[343] *The School of Textiles and Food Held a Mobilization Meeting for the Military Training of the 2014 Undergraduate Students*, *supra* note 283.

[344] *See* Confucius Institutes: https://crsreports.congress.gov/product/pdf/IF/IF11180, https://www.hsgac.senate.gov/wp-content/uploads/imo/media/doc/PSI%20Report%20China's%20Impact%20on%20the%20US%20Education%20System.pdf.

[345] *See* https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/notices-compliance-review-and-records-requests.

[346] § 117(a) of the Higher Education Act.

[347] https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/frequently-asked-questions.

[348] Pub. L. No. 99-498 (1986).

[349] *Opinion: Education Act Would Curb Foreign Gifts*, N.Y. TIMES (Oct. 16, 1986), https://www.nytimes.com/1986/10/16/opinion/l-education-act-would-curb-foreign-gifts-148386.html?searchResultPosition=1.

[350] § 117(e) of the HEA.

[351] § 117(b) of the HEA.
[352] § 117(c) of the HEA.
[353] § 117(f)(1) of the HEA.
[354] § 117(f)(2) of the HEA.
[355] 85 Fed. Reg. 72567 (Nov. 13, 2020).
[356] Letter, U.S. House of Reps. Select Comm. on the Strategic Competition Between the U.S. and the Chinese Communist Party to Dr. Michael V. Drake, President, Univ. of Cal., and Dr. Carol T. Christ, Chancellor, Univ. of Cal., Berkeley (July 13, 2023), https://selectcommitteeontheccp.house.gov/sites/evo-subsites/selectcommitteeontheccp.house.gov/files/evo-media-document/2023-07-13-berkeley-tbsi-letter.pdf.
[357] Letter of Oct. 6, 2023, from Raphael A. Prober of Akin Gump Strauss Hauer & Feld LLP, Counsel for UC Berkeley, to Chairman Mike Gallagher of the U.S. House Select Committee on the Chinese Communist Party and Chairwoman Virginia Foxx of the U.S. House Committee on Education and the Workforce at 2-3 (on file with the U.S. House Committee on Education and the Workforce).
[358] ("For purposes of Section 117 reporting, an intermediary is an entity other than an institution that receives a gift originating from a foreign source or enters into a contract with a foreign source.") Electronic Announcement, A7, Appendix B, *Reminder to Report Ownership/Control by, and Contracts/Gifts From, Foreign Sources*, Ofc. of Gen. Counsel, U.S.Dept. of Educ. (June 22, 2020), https://fsapartners.ed.gov/knowledge-center/library/electronic-announcements/2020-06-22/reminder-report-ownershipcontrol-and-contractsgifts-foreign-sources; *see also*, A6 ("An institution receiving the benefit of a gift from or a contract with a foreign source, even if through an intermediary, must disclose the gift or contract. Additionally, where a legal entity (e.g., a foundation) operates substantially for the benefit or under the auspices of an institution, there is a rebuttable presumption that when that legal entity receives money or enters into a contract with a foreign source, it is for the benefit of the institution, and, thus, must be disclosed. Institutions have a duty, under Section 117, to conduct reasonable due diligence when they receive the benefit of a contract or gift from any entity to determine whether the gift or contract is from or with a foreign source. If they do receive such a benefit and it meets the threshold amount, they must report the item to the Department. However, institutions are not required to report any gift to or contract between a foreign source and an entity if the institution did not receive a benefit from the gift or contract.") *Id. See also* Strategic Partnership Agreement between UC Berkeley and Tsinghua University executed Oct. 30, 2012; Undated Addendum to the Strategic Partnership Agreement between UC Berkeley and Tsinghua University; UC Berkeley and Tsinghua University Agreement on the establishment of TBSI, Addendum (II) to the Strategic Partnership Agreement Between UC Berkeley and Tsinghua University, undated; Memorandum of Understanding Among Shenzhen Municipal People's Government, UC Berkeley, and Tsinghua University on the establishment of TBSI dated Sept. 7, 2014; Master Affiliation Agreement between TBSI, Tsinghua University, and the Regents of the University of CA, on behalf of UC Berkeley dated Oct. 16, 2015; Amendment dated April 5, 2018 to the Master Affiliation Agreement between Tsinghua University and the Regents of the University of CA, on behalf of UC Berkeley, on TBSI; Second Amendment dated July 31, 2020 to the Master Affiliation Agreement between Tsinghua University and the Regents of the University of CA, on behalf of UC Berkeley, on TBSI; Sponsored Research Agreement No 12422 dated Aug. 1, 2016 between Tsinghua Education Foundation North America Inc. (TEFNA) and Warranty Asset Management Co., Ltd and The Regents of the University of CA; Amendment No. 1 dated Aug. 28, 2019 to Sponsored Research Agreement No. 12422; Amendment No. 2 dated April 30, 2020 to Sponsored Research Agreement No. 12422; Sponsored Research Agreement dated Aug. 1, 2021 between Tsinghua Shenzhen International Graduate School and the Regents of the University of CA; Cooperative Agreement dated Nov. 2016 on a Jointly Run Educational Institution Among Shenzhen Municipal People's Government, Tsinghua University, and UC Berkeley (by the Regents of the University of CA); Amendment dated Aug. 20, 2018 to Cooperation Agreement on a Jointly Run Educational Institution Among Shenzhen Municipal People's Government, Tsinghua University, and UC Berkeley (by the Regents of the University of CA); Agreement on Dual Degree Program between UC Berkeley and Tsinghua University, PRC (on file with the U.S. House Committee on Education and the Workforce).
[359] *See* Scenarios, *supra*.

[360] Electronic Announcement, INS-Q2, *Frequently Asked Questions*, Office of Federal Student Aid, U.S. Dept. of Educ., (Nov. 29, 2023), https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/frequently-asked-questions.

[361] §§ 101 & 102 of the HEA (definitions of "institution of higher education").
[362] *See* Master Affiliation Agreement dated Oct. 16, 2015 between Tsinghua University and the Regents of the University of CA on behalf of UC Berkeley at 2. (The agreement established the Tsinghua-Berkeley Shenzhen Institute (TBSI) as an "incorporated Sino-foreign cooperative non-profit research and education institution in Shenzhen, Guangdong in accordance with the terms and conditions of this Agreement as well as applicable laws and regulations of the People's Republic of China.")
[363] *See supra* note 358, documents governing the establishment and operations of TBSI and its relationship to UC Berkeley.
[364] *See supra* note 358, generally; *see specifically* the Master Affiliation Agreement dated Oct. 16, 2015 between Tsinghua University and the Regents of the University of CA on behalf of UC Berkeley and the First and Second Amendments to the Master Affiliation Agreement (on file with the U.S. House Committee on Education and the Workforce).
[365] *Id*.
[366] https://www.tbsi.edu.cn/4769/list.htm.
[367] *See* discussion of the Berkeley-Tsinghua Center and the Tsinghua-Berkeley Center in the Addendum to the Strategic Partnership Agreement between UC Berkeley and Tsinghua University (on file with the U.S. House Committee on Education and the Workforce).
[368] *Supra* note 358, generally.
[369] *See* Scenarios, *supra*.
[370] TEFNA is organized as a § 501(c)(3) tax exempt entity under 26 USC § 501(c)(3).
[371] https://regents.universityofcalifornia.edu/regmeet/july15/e2.pdf.
[372] Letter of Oct. 6, 2023, from Raphael A. Prober of Akin Gump Strauss Hauer & Feld LLP, Counsel for UC Berkeley, to Chairman Mike Gallagher of the U.S. House Select Committee on the Chinese Communist Party and Chairwoman Virginia Foxx of the U.S. House Committee on Education and the Workforce at 3 (on file with the U.S. House Committee on Education and the Workforce).
[373] *Id.* at footnote 3.
[374] *Frequently Asked Questions: FS-Q3*, FED. STUDENT AID, https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/frequently-asked-questions#FS (last visited Sept. 20, 2024).
[375] *Supra* note 372.
[376] *Frequently Asked Questions: INS-Q3*, *supra* note 360.
[377] § 117(h)(2) of the HEA (definition of "foreign source").
[378] Agreement on Developing a Joint Institute in Shenzhen Among Shenzhen Municipal People's Government, Tianjin University and Georgia Institution of Technology (Dec. 2, 2016) (on file with U.S. House Committee on Education and the Workforce).
[379] *Id*. at 2-3 (Organization and Management); 5 (Faculty); 6 (Preparatory Working Group); and 7-8 (Miscellaneous Provisions).
[380] *Id*. at 2-3 (Organization and Management); Chapter 5, Article 16 of the Articles of Association of GTSI (revised Dec. 2019) (on file with the U.S. House Committee on Education and the Workforce).
[381] Chapter 5, Article 16, Item 1 of the Articles of Association of GTSI (revised Dec. 2019) (on file with the U.S. House Committee on Education and the Workforce).
[382] *Id*.
[383] Agreement on Developing a Joint Institute at 5-6.
[384] Chapter 4, Article 13 of the Articles of Association (on file with the U.S. House Committee on Education and the Workforce). The enabling Agreement on Developing a Joint Institute (Dec. 2, 2026) has not been rescinded or otherwise abrogated.
[385] Agreement on Developing a Joint Institute at 6.
[386] Letter of June 7, 2024 of Saxby Chambliss and Vanessa Le of DLA Piper, counsel for Georgia Tech, to Chairman John Moolenaar of the U.S. House Select Committee on the Chinese Communist Party, Chairwoman Virginia Foxx of the U.S. House Committee on Education and the Workforce, and

Ranking Member Roger Wicker of the U.S. Senate Armed Services Committee at 3 (on file with the U.S. House Committee on Education and the Workforce).
[387] *See supra*, *generally*, the Department's discussion of the characteristics of an "intermediary" at footnote 358, and elsewhere in this report.
[388] *Frequently Asked Questions: INS-Q2*, *supra* note 360; *see also* the discussion of intermediary at footnote 358.
[389] *See* Letter of June 4, 2024 to Chairman Moolenaar, Chairwoman Foxx, and Ranking Member Wicker; Agreement on Developing a Joint Institute; Memorandum of Understanding dated Dec. 2, 2016 between the Board of Regents of the University of Georgia System, by and on behalf of Georgia Tech, and Tianjin University for the Operation of GTSI; the First Supplemental Agreement dated May 2019 to the Agreement on Developing a Joint Institute; Articles of Association of GTSI as revised in Dec. 2019; and Agreement dated March 1, 2020 between the Board of Regents of the University of Georgia System, by and on behalf of Georgia Tech, and Tianjin University for the Operation of GTSI (all on file with the U.S. House Committee on Education and the Workforce).
[390] https://www.shenzhen.gatech.edu/.
[391] https://www.shenzhen.gatech.edu/events-and-news/.
[392] *See* email of Aug. 16, 2024, 12:55 p.m. of DLA Piper on behalf of Georgia Tech to the oversight staff of the U.S. House Committee on Education and the Workforce, the House Select Committee on the Chinese Communist Party, and the U.S. Senate Committee on Armed Services (on file with the Committee on Education and the Workforce); *see also* 34 CFR Part 600; 34 CFR § 600.2 (definitions of "additional location" and "branch campus"), § 600.9(d) (state authorization), and § 600.32 (eligibility of additional location).
[393] *See* email of Aug. 16, 2024, 12:55 p.m. from Carlton Davis of DLA Piper, on behalf of Georgia Tech, to Julissa Walsh and Vanessa Le (on file with the Committee on Education and the Workforce).
[394] *See* Letter of August 20, 2024 of Saxby Chambliss and Vanessa Le of DLA Piper, counsel for Georgia Tech, to Chairman John Moolenaar of the U.S. House Select Committee on the Chinese Communist Party, Chairwoman Virginia Foxx of the U.S. House Committee on Education and the Workforce, and Ranking Member Roger Wicker of the U.S. Senate Armed Services Committee at 2 (on file with the U.S. House Committee on Education and the Workforce).
[395] Letter of June 7, 2024 from Saxby Chambliss and Vanessa Le of DLA Piper, on behalf of Georgia Tech, to Chairman John Moolenaar of the House Select Committee on the Chinese Communist Party, Chairwoman Virgina Foxx of the House Committee on Education and the Workforce, and Ranking Member Roger Wicker of the U.S. Senate Armed Services Committee at 3; *see also* Agreement on Developing a Joint Institute (on file with the Committee on Education and the Workforce).
[396] Letter of June 7, 2024 at 3.
[397] *Id*.
[398] National Defense Authorization Act for Fiscal Year 2020, Pub. L. No. 116-92, § 1746, 133 Stat. 1198, 1842-43 (Dec. 20, 2019), https://www.congress.gov/116/plaws/publ92/PLAW-116publ92.pdf; National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, § 223, 134 Stat. 3388, 3486-87 (Jan. 1, 2021), https://www.congress.gov/116/plaws/publ283/PLAW-116publ283.pdf.
[399] Public Law 117-167, Chips and Science Act, H.R. 4346, 136 Stat. 1366 (Aug. 9, 2022), https://www.congress.gov/117/plaws/publ167/PLAW-117publ167.pdf. National Defense Authorization Act for Fiscal Year 2020, Pub. L. No. 116-92, § 1746, 133 Stat. 1198, 1842-43 (Dec. 20, 2019), https://www.congress.gov/116/plaws/publ92/PLAW-116publ92.pdf; National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, § 223, 134 Stat. 3388, 3486-87 (Jan. 1, 2021), https://www.congress.gov/116/plaws/publ283/PLAW-116publ283.pdf.
[400] See Section 1286 of FY2019 NDAA: https://www.congress.gov/115/bills/hr5515/BILLS-115hr5515enr.pdf and Section 1299C of FY 2021 NDAA: https://www.congress.gov/116/bills/hr6395/BILLS-116hr6395enr.pdf.
[401] It requires federal R&D grant awarding agencies to enhance cross-agency collaboration to assess and mitigate research security risks and develop and standardize cross-agency disclosure requirements for conflict of interest and conflict of commitment in the federally funded researchers' foreign engagement. "Guidance for Implementing National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government-Supported Research and Development," Subcommittee on Research Security, Joint Committee on the Research Environment

(Jan. 2022), https://www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf; "Guidelines for Research Security Programs at Covered Institutions," Memorandum for the Heads of Federal Research Agencies from Arati Prabhakar, Assistant to the President for Science and Technology, Director of the Office of Science and Technology Policy (Jul. 9, 2024), https://www.whitehouse.gov/wp-content/uploads/2024/07/OSTP-RSP-Guidelines-Memo.pdf. Research Security: Strengthening Interagency Collaboration Could Help Agencies Safeguard Federal Funding from Foreign Threats, GAO-24-106227 (Jan. 11, 2024), https://www.gao.gov/products/gao-22-105313.

[402] National Defense Authorization Act for Fiscal Year 2020, Pub. L. No. 116-92, § 1746, 133 Stat. 1198, 1842-43 (Dec. 20, 2019), https://www.congress.gov/116/plaws/publ92/PLAW-116publ92.pdf; National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, § 223, 134 Stat. 3388, 3486-87 (Jan. 1, 2021), https://www.congress.gov/116/plaws/publ283/PLAW-116publ283.pdf.

[403] National Security Presidential Memorandum on United States Government-Supported Research and Development National Security Policy, NSPM-33, § 4(g) (Jan. 14, 2021), https://trumpwhitehouse.archives.gov/presidential-actions/presidential-memorandum-united-states-government-supported-research-development-national-security-policy/.

[404] "Guidance for Implementing National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government-Supported Research and Development," Subcommittee on Research Security, Joint Committee on the Research Environment (Jan. 2022), https://www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf; "Guidelines for Research Security Programs at Covered Institutions," Memorandum for the Heads of Federal Research Agencies from Arati Prabhakar, Assistant to the President for Science and Technology, Director of the Office of Science and Technology Policy (Jul. 9, 2024), https://www.whitehouse.gov/wp-content/uploads/2024/07/OSTP-RSP-Guidelines-Memo.pdf. Research Security: Strengthening Interagency Collaboration Could Help Agencies Safeguard Federal Funding from Foreign Threats, GAO-24-106227 (Jan. 11, 2024), https://www.gao.gov/products/gao-22-105313.

[405] In response, the National Science Foundation implemented new disclosure forms in November 2023. See "Common Form for Biographical Sketch," National Science Foundation (Nov. 1, 2023), https://www.nsf.gov/bfa/dias/policy/researchprotection/commonform_biographicalsketch.pdf; Common Form for Current and Pending (Other) Support, National Science Foundation (Nov. 1, 2023), https://www.nsf.gov/bfa/dias/policy/researchprotection/commonform_cps.pdf. DOD also implemented policy changes under NSPM-33, which require a risk-based approach to reviewing fundamental research projects for conflicts of interest arising from foreign influence. See "Countering Unwanted Foreign Influence in Department Funded Research at Institutions of Higher Education," DOD (Jun. 29, 2023), https://media.defense.gov/2023/Jun/29/2003251160/-1/-1/1/COUNTERING-UNWANTED-INFLUENCE-IN-DEPARTMENT-FUNDED-RESEARCH-AT-INSTITUTIONS-OF-HIGHER-EDUCATION.PDF.

[406] Research Security: Strengthening Interagency Collaboration Could Help Agencies Safeguard Federal Funding from Foreign Threats, GAO-24-106227 (Jan. 11, 2024), https://www.gao.gov/products/gao-22-105313.

[407] *See Institutional Compliance with Section 117 of the Higher Education Act of 1965*, U.S. Dep't. of Educ., Ofc. of General Counsel, (Oct. 2020), https://www2.ed.gov/policy/highered/leg/institutional-compliance-section-117.pdf.

[408] *Id.* at 1, 9, and 17.

[409] *See China's Impact on the U.S. Education System*, Staff Report, Permanent Subcommittee on Investigations, Committee on Homeland Security, U.S. Senate (Feb. 2019), https://www.hsgac.senate.gov/wp-content/uploads/imo/media/doc/PSI%20Report%20China's%20Impact%20on%20the%20US%20Education%20System.pdf.

[410] https://www2.ed.gov/policy/highered/leg/institutional-compliance-section-117.pdf.

[411] Jeremy Bauer-Wolf, *Ed Dept Steps Up Scrutiny of College Foreign Gifts Reporting*, HIGHER ED DIVE (June 23, 2020), https://www.highereddive.com/news/ed-dept-steps-up-scrutiny-of-college-foreign-gifts-reporting/580376/.

[412] The Department's Section 117 web site shows several open and closed compliance reviews. Yet, none of the reviews, open or closed, appear to have been initiated by the Biden-Harris administration. *See* https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/notices-compliance-review-and-records-requests; *see also* https://www.nationalreview.com/corner/biden-admin-winds-down-probes-into-universities-foreign-gifts/.

[413] Transcript of Hearing, Subcommittee on Higher Education and Workforce Development, U.S. House Committee on Education and the Workforce at 69-70 (May 24, 2023) (statements of FSA COO Richard Cordray in response to questions of Rep. Jim Banks, R-IN) (transcript on file with committee).

[414] *Id.*

[415] *Notices of Compliance Review and Records Request*, FED. STUDENT AID, https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/notices-compliance-review-and-records-requests (last visited Sept. 20, 2024).

[416] *See* Letter of May 15, 2023 from Under Secretary James Kvaal to Chairwoman Virginia Foxx of the Committee on Education and the Workforce at 1 referencing a June 2022 Department webinar announcing the transfer of the administration of section 117 to FSA (letter on file with the Committee); *see also* 87 Fed. Reg. 79292, 79293 (Dec. 27, 2022)("With this request for a new [information] collection, the Department . . . [will] be returning the collection of this information to FSA, which is the office with primary responsibility for the administration of Section 117 within the Department going forward.").

[417] *See Institutional Compliance with Section 117 of the Higher Education Act of 1965*, U.S. Dep't. of Educ., Ofc. of General Counsel, (Oct. 2020), https://www2.ed.gov/policy/highered/leg/institutional-compliance-section-117.pdf.

[418] The Department announced on August 7, 2024 the full launch of the FAFSA application would be delayed from the traditional launch date of October 1, until December 1, 2024, https://www.ed.gov/news/press-releases/us-department-education-announces-schedule-and-new-process-launch-2025-26-fafsa-form.

[419] *See Future of the SAVE Repayment Program in Limbo as Federal Appeals Court Scrutinizes ED's Authority*, NAT'L ASS'N OF STUDENT FIN. AID ADMINS. (Aug. 13, 2024), https://www.nasfaa.org/news-item/34378/Future_of_the_SAVE_Repayment_Program_in_Limbo_as_Federal_Appeals_Court_Scrutinizes_ED_s_Authority; *SAVE Plan Court Actions: Impact on Borrowers*, FED. STUDENT AID, https://studentaid.gov/announcements-events/save-court-actions (last visited Sept. 20, 2024).

[420] Letter, U.S. House of Reps. Comm. on Educ. and the Workforce to Honorable Miguel Cardona, Secretary, U.S. Dep't of Educ. (Apr. 5, 2023), https://edworkforce.house.gov/uploadedfiles/letter_to_secretary_cardona_on_sec._117_vf.pdf.

[421] *See* Letter of May 15, 2023 from Under Secretary James Kvaal to Chairwoman Virginia Foxx of the Committee on Education and the Workforce at 1 referencing a June 2022 Department webinar announcing the transfer of the administration of section 117 to FSA (letter on file with the Committee).

[422] *(GENERAL-24-79) Reminder-July 31 Reporting Deadline for Section 117 of the Higher Education Act of 1965; Decommission of the Section 117 Interactive Data Table*, FED. STUDENT AID (June 26, 2024), https://fsapartners.ed.gov/knowledge-center/library/electronic-announcements/2024-06-26/reminder-july-31-reporting-deadline-section-117-higher-education-act-1965-decommission-section-117-interactive-data-table.

[423] *See Section 117 Foreign Gift and Contract Data*, FED. STUDENT AID, https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/section-117-foreign-gift-and-contract-data (last visited Sept. 20, 2024).

[424] Email of July 31, 2024, from staff of Office of Legislative and Congressional Affairs, U.S. Department of Education, to U.S. House Committee on Education and the Workforce oversight staff (on file with the committee).

[425] Letter, Am. Council on Educ. to Melanie Muenzer, Chief of Staff, Off. of the Under Sec'y, U.S. Dep't of Educ. & Richard Cordray, Chief Operating Off., Off. of Fed. Student Aid, U.S. Dep't of Educ. (Aug. 16, 2022),

https://www.cogr.edu/sites/default/files/081622%20FINAL%20August%202022%20ED%20letter%20on%20117%20follow%20up.pdf.

[426] The ACE letter stated –

The information and presentation by your [Department] teams was helpful, and we were happy to distribute the slides from that meeting to our larger community. We were pleased to learn that ED plans to close the outstanding Section 117 investigations that remain open; that ED will address the concerns and issues with the existing reporting portal; and that Section 117 management will be transferred back to Federal Student Aid (FSA). (ACE letter at 1).

[427] *See* question nine and ten of the letter of April 5, 2023 from Chairwoman Virginia Foxx and others to Secretary of Education Miguel Cardona, https://edworkforce.house.gov/uploadedfiles/letter_to_secretary_cardona_on_sec._117_vf.pdf.

[428] *Notice of Compliance Review and Records Requests*, FED. STUDENT AID, https://fsapartners.ed.gov/knowledge-center/topics/section-117-foreign-gift-and-contract-reporting/resources/notices-compliance-review-and-records-requests (last visited Sept. 21, 2024). .

[429] *Id*.

[430] Press Release, Congresswoman Michelle Steel, Steel, Fox, Bill Will Deter Foreign Adversaries' Influence in Postsecondary Education (Oct. 11, 2023), https://steel.house.gov/media/press-releases/steel-foxx-bill-will-deter-foreign-adversaries-influence-postsecondary.

[431] DETERRENT Act, H.R. 5933, 118th Cong. (2024).

[432] Press Release, U.S. Dep't of Just., University of Maryland, College Park Agrees to Pay $500,000 to Resolve Allegations That It Failed to Disclose Foreign Research Support in Federal Grant Proposals (July 16, 2024), https://www.justice.gov/usao-md/pr/university-maryland-college-park-agrees-pay-500000-resolve-allegations-it-failed ; Molly Ormsbee, *SUNY Settles Lawsuit Alleging Foreign Research Interference*, NBC5 (Sept. 13, 2024, 7:55 A.M.), https://www.mynbc5.com/article/suny-lawsuit-foreign-interference/62185980.