

Policy Brief

CSET Analyses of China's Technology Policies and Ecosystem

The PRC's Efforts Abroad

Author

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Introduction

At Georgetown University's Center for Security and Emerging Technology (CSET), we develop a data and primary-source informed understanding of the People's Republic of China's (PRC) approach to emerging technologies at home and abroad. In this brief, a companion to a similar compilation of our findings and recommendations on [China's domestic technology ecosystem](#), we examine steps China has taken to increase its technological competitiveness beyond its own borders.*

The research summarized here is based on global tech monitoring, primary source language translations, and data analyses of private sector activity. We work to contextualize China's technology development and acquisition strategies alongside those of the United States and its global allies and partners, and to situate the U.S.-China rivalry in the broader landscape of democratic and authoritarian technology competition.

Key Themes

Based on CSET's research, this brief details how the PRC employs strategies abroad to advance its global tech leadership goals. It covers several high-level themes:

- **Leading in research and trying to shape standards.** China is increasingly contributing to high-impact research in artificial intelligence (AI), and it aspires to lead in setting global standards for emerging technologies.
- **Backing Chinese companies abroad.** The PRC provides Chinese companies like Huawei with resources and backing through subsidies, illicit intellectual property (IP) practices, and other methods, with disregard for global norms and business practices. The government also encourages Chinese companies to invest abroad in emerging technology areas of interest.
- **Acquiring foreign technology and talent.** In addition to private sector and illicit practices, China uses official science and technology (S&T) diplomats to acquire technologies on an extensive "wishlist" for China's Ministry of Science and Technology. Some of its talent acquisition efforts also look abroad through

* See "[CSET Analyses of China's Technology Policies and Ecosystem: The PRC's Domestic Approach](#)," Center for Security and Emerging Technology, September 2023.

talent tracking programs, international collaborations, and possibly in tacit knowledge transfers.

U.S. Policy Options

To confront these strategies and remain competitive with the PRC, CSET offers U.S. policymakers several recommendations:

- **The United States should focus on developing and retaining its talent pipeline, particularly access to foreign skilled labor.** Foreign talent is especially important **in the U.S. semiconductor industry.** It should consider **increasing country-based caps on annually distributed employment-based green cards,** and generally try to **expand the number of American students who are in AI- and semiconductor-related graduate programs.** To do so, policymakers should allocate funding to universities and government-industry-academic partnerships to facilitate the increased implementation of on-the-job training models.
- **The U.S. should prioritize open-source intelligence collection and analysis related to science and technology amid competition with China, particularly in monitoring global developments in emerging technologies and/or their implications for economic competitiveness.**
- **In the context of long-term strategic competition with China and AI's effect on national power, U.S. policymakers should consider how AI introduces new elements, changes the import of existing factors, and alters the goals of competition over time.** The U.S. should learn from its competitors without mirror imaging them, share insights with allies without presuming policy alignment with the U.S., and look ahead to how AI technologies may affect the aims and interests of U.S. allies and partners.

The brief examines the above themes and concludes with [recommendations](#) for how U.S. policymakers can understand and counter China's actions abroad. It shares insights from CSET's data-driven approach to analysis and provides illustrative examples.

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Research Context for CSET's Work on Chinese Tech Policies Abroad

At Georgetown University's Center for Security and Emerging Technology (CSET), we develop a data and primary-source informed understanding of the People's Republic of China's (PRC) approach to emerging technologies. We analyze how this approach affects the United States and how U.S. policies can in turn favorably shape technological and strategic competition with China. Our analytical products incorporate [global tech monitoring](#), [primary source language translations](#), and [data analyses](#) of private sector activity, helping contextualize China's technology development and acquisition strategies alongside those of the United States and its global allies and partners. Our work also situates U.S.-China rivalry in the broader landscape of democratic and authoritarian technology competition.

This analysis derives from several CSET papers that address these themes in greater detail, with a particular emphasis on AI, semiconductors, and biotechnology, among several other topics relevant to policymakers.

Table 1. CSET Papers Cited in this Brief and Their Author(s)

Report	Authors
China's Advanced AI Research: Monitoring China's Paths to 'General' Artificial Intelligence	Wm. C. Hannas, Huey-Meei Chang, Daniel H. Chou, and Brian Fleeger
China's Foreign Technology Wish List	Ryan Fedasiuk, Emily Weinstein, and Anna Puglisi
China's State Key Laboratory System: A View into China's Innovation System	Emily Weinstein, Channing Lee, Ryan Fedasiuk, and Anna Puglisi
China's STI Operations	Wm. Hannas and Huey-Meei Chang
Chinese AI Investment and Commercial Activity in Southeast Asia	Ngor Luong, Channing Lee, and Margarita Konaev
The Chipmakers: U.S. Strengths and Priorities for the High-End Semiconductor Workforce	Will Hunt and Remco Zwetsloot
Comparing U.S. and Chinese Contributions to High-Impact AI	Ashwin Acharya and Brian Dunn
Establishing a New Open-Source National Science and Technology Analysis Center	Tarun Chhabra et al.
The Huawei Moment	Alex Rubin, Alan Omar Loera Martinez, Jake Dow, and Anna Puglisi
National Power After AI	Matt Daniels and Ben Chang
Universities and the Chinese Defense Technology Workforce	Ryan Fedasiuk and Emily Weinstein
U.S. Outbound Investment into Chinese AI Companies	Emily Weinstein and Ngor Luong

China's Global Technological Leadership Ambitions

China aspires to global leadership in strategically and economically critical emerging technologies including semiconductors, genome editing, AI, quantum computing, and aerospace electronics. Chinese companies have already caught up to and even surpassed U.S. firms in some strategic industries such as 5G.¹ In AI, the state has developed a strategy to become the world's leader by 2030, devoting national efforts and resources from the government, universities, research laboratories, and tech companies to this pursuit across AI applications and cutting-edge research.² While it is making progress against some of its ambitious goals, CSET's research finds that China's tech self-sufficiency and dominance over the U.S. is not a foregone conclusion.

Aiming to Lead in Research and Shape Global Standards

Overall, China is trying to dominate certain technology research areas, particularly in AI. International citations of Chinese AI research are rapidly increasing. Highly cited research does not necessarily guarantee that a country will lead in a particular technological field, but it does indicate that a country has a talented research base to draw upon. With this in mind, China's contributions to AI research have proliferated, and a January 2022 analysis of CSET's merged corpus of scholarly literature of over 200 million publications from six academic datasets found that both the quantity and quality of China's highly cited AI research is growing. While China still lags far behind the United States in terms of international citations, likely due to the fact it is less globally integrated into the international research community than the United States, at least 35 percent of Chinese publications from 2015-2019 received their viewership from non-Chinese sources.³

An April 2023 update to the analysis showed that since 2016, China-affiliated researchers have produced more highly cited AI publications than U.S.-affiliated researchers, where "highly cited" is defined as papers above the 90th citation percentile in their respective fields. However, looking at recent papers (2018-2022) assigned to two subfields of AI (machine learning and natural language processing), the authors found that in both fields, U.S.-affiliated researchers still produced more highly cited papers than Chinese-affiliated researchers. The research thus demonstrated that, while China continues to make strides, disaggregating types of AI may still be important when looking for more granular detail about U.S.-China AI competition.⁴

China's AI research is also making it into highly regarded AI conferences more frequently than in the past. The global share of publications with at least one Chinese

author at 13 top AI conferences has steadily increased, up from 13 percent in 2010 to 31 percent in 2019. Meanwhile, the share of publications by U.S. authors at these conferences, though larger in absolute terms than that of Chinese authors, is largely stagnant over the same period.⁵

The United States is not necessarily destined to lag behind China in research output or AI competition more broadly, since these figures do not capture factors like international cooperation, talent flows, or private sector activities. Further still, the United States can likely draw more readily on collaborations with allies and partners to amplify research impact than China can. For example, the combined share of highly cited publications output by authors from the United States, the European Union, Canada, United Kingdom, and New Zealand in CSET's dataset still far outnumbers that of China. Nonetheless, it is notable that the PRC is nearing a similar share of high-quality AI publications to the United States in light of China's strategic ambitions.⁶

In addition to leading in research, China has ambitions to set international technical standards to enhance its reputation and benefit its technology producers. Technical standards—sets of mutually agreed-upon engineering specifications—help facilitate international trade and can solidify first mover companies' competitive advantages. They also hold the potential to generate significant revenues for firms with large patent portfolios.⁷ Technical standards are set by a constellation of national and international organizations as part of an industry-led, consensus-driven, and voluntary process. Driven both by government incentives and China's natural economic development, Chinese agencies and firms are increasingly participating in and leading international technical standards activities. But China's growing influence does not mean that China is successfully manipulating international standards to unfairly advantage Chinese firms; with the exception of the United Nations International Telecommunication Union, which analysts and industry participants have acknowledged as being particularly susceptible to geopolitical pressures, standards bodies have robust processes to defend against manipulative practices.*

* For example, in a comment to the National Institute of Standards and Technology (NIST), the Director of Global Policy for the Telecommunications Industry Association noted that decisions in the U.N. International Telecommunications Union “are more likely to be driven by nation state politics – including by China, Russia, and others – as opposed to innovation and commercial salience.” P. 8, <https://www.regulations.gov/comment/NIST-2021-0006-0033>; see also <https://carnegieendowment.org/2023/02/27/what-washington-gets-wrong-about-china-and-technical-standards-pub-89110>.

Backing Chinese Companies Abroad and Encouraging Foreign Investment

China is willing to allocate a wide range of government powers and resources to ensure that Chinese companies dominate foreign competition in areas it deems to be strategically important. The state will step in to ensure that it achieves its goals, whether it adheres to global norms or not.⁸ 5G provides an illustrative example in which China afforded Huawei access to financing, subsidies, diplomatic support, and other forms of assistance that resulted in accelerated and market-distorting growth.⁹ China leveraged and exploited certain characteristics of 5G that deterred investment from U.S. companies to take the lead in this key technology, including the need for long-term investments, small profit margins, support for companies through longer time horizons, and the merging of national and commercial priorities.¹⁰ For example, Huawei benefited from direct government subsidies from 1998 to 2008 to address its lack of revenues, and it received \$1.2 billion in direct subsidies over the last 5 years. Indirect subsidies have increasingly become the core pillar of Huawei's government assistance, specifically securing government contracts to lead in the domestic market, state-backed loans, and export financing.¹¹

Huawei's case also provides an example of Chinese firms benefiting from dubious or illicit IP practices. Huawei benefited from the Chinese government's pressuring of foreign firms into technology transfers and a general disregard for IP rights.* Huawei has been indicted numerous times since 2003 for direct IP theft, and was charged with using proxies and confidentiality and partnership agreements to acquire IP.† Yet U.S. companies have not sought redress in court, fearing potential loss of access to Chinese

* A 2012 report by the U.S. House of Representatives Permanent Select Committee on Intelligence found that Huawei “has purposely used and marketed patented products of other companies” and “has exhibited a pattern of, at the very last, reckless disregard for the intellectual property rights of other entities.” Rubin et al., “The Huawei Moment,” pp.34, <https://cset.georgetown.edu/publication/the-huawei-moment/>

† Rubin et al., “The Huawei Moment,” pp. 34-35. Notable claims include a 2003 Cisco Systems case and allegations that Huawei conspired to steal trade secrets from T-Mobile between 2012 and 2014. In 2019, The Wall Street Journal also reviewed 10 cases in federal courts and conducted dozens of interviews “suggest[ing] [that] Huawei had a corporate culture that blurred the boundary between competitive achievement and ethically dubious methods of pursuing it.” Chuin-Wei Yap et al., “Huawei's Yearslong Rise Is Littered With Accusations of Theft and Dubious Ethics,” The Wall Street Journal, May 25, 2019, <https://www.wsj.com/articles/huaweis-yearslong-rise-is-littered-withaccusations-of-theft-and-dubious-ethics-11558756858>.

markets and viewing the likelihood of recovering stolen IP from Huawei low relative to litigation costs.¹²

The Chinese private sector and domestic firms are also encouraged by the government to look abroad for investment opportunities. For example, the Chinese government has urged the country's AI firms to look for investment and commercial opportunities in Southeast Asia, and the region's AI companies accordingly attracted \$7.3 billion across 648 deals from 2010 to 2021. Chinese investments into Southeast Asia's AI ecosystem still lag behind U.S. investments, but represent increasing efforts to develop connections to public and private AI entities in the region and to access talent, data, and information in nations like Singapore, Thailand, Malaysia, and Indonesia.¹³ These efforts are emblematic of broader Chinese attempts to stay abreast of global AI advancements and to benefit domestically from global investments and collaborations.

By attempting to drive research in certain emerging technology areas like AI, gain advantages in shaping global technology standards, and boost the international presence of its firms, China hopes to realize its ambitions for global technological leadership. Yet the PRC is still willing to look beyond its borders for technical advancements, knowledge, and know-how.

China's Efforts to Acquire Foreign Technology and Talent

In addition to the ways the PRC is attempting to export its domestic successes and progress abroad, it is also looking for ways to import foreign technology and knowledge to benefit its innovation ecosystem.

Acquiring Foreign Technology and Talent to Advance Domestic Goals

China looks abroad with some success to acquire tech research, knowledge, and partnerships that can help advance its domestic tech goals. These goals stem from major policies like *Made in China 2025*, the *Medium- and Long-Term Plan for Science and Technology Development (2006–2020)*, and *Strategic Emerging Industries Strategy*.¹⁴ In some cases, PRC diplomats frequently seek to acquire components and systems currently used by the militaries of the U.S. and its allies.

For example, CSET research highlighted China's foreign technology "wishlist" of 642 technology projects that science and technology (S&T) diplomats earmarked for potential Chinese acquisition. Nearly half the items our report identified on the wishlist were related to biotechnology or AI. China's Ministry of Science and Technology

(MOST) employs over 140 S&T diplomats who contribute to a monthly bulletin of “international technological cooperation opportunities.” The bulletin lists 1,000 companies, universities, research institutions, and individuals pioneering tech products that could benefit China and their likelihood to partner with Chinese firms, share IP, or establish joint ventures in China. Diplomats recommend investment positions that advance Chinese equity in supply chains relevant to the CCP’s development objectives.¹⁵

CSET’s dataset spanned every bulletin from 2015 to 2020, capturing 642 S&T projects led by 335 unique targets in 37 countries. Most projects related to Made in China 2025-specified industries, including biopharmaceuticals and medical devices (25 percent), information technology (17 percent), or advanced materials (12 percent). Beyond these industries, the Chinese government was most interested in biotechnology and pharmaceuticals, AI/ML, and projects with potential military applications. Nearly half of all earmarked technology projects originated in Russia, the U.S., the U.K., and Japan. Fewer than 12 percent of projects in our dataset originated in the United States. That said, NATO members and U.S.-designated Major Non-NATO Allies hosted more than 70 percent of the S&T projects targeted by Chinese diplomats from 2015 to 2020.¹⁶

In some cases, Chinese diplomats are successfully acquiring foreign technology. A random sample of 30 companies identified as “cooperation opportunities” revealed that about half established partnerships with enterprises in China or otherwise exposed their IP by attending PRC-sponsored conferences and matchmaking events. At least two targets also provided products or services to the U.S. military; one received U.S. Navy funding after attending a PRC-sponsored matchmaking event.¹⁷

Gaining Insights and Know-How from Foreign Talent

Analyzing China’s efforts to develop or acquire tech talent capable of developing cutting edge capabilities represents an important aspect of our work. China has taken significant steps to boost its domestic talent base, including investing heavily in centralized AI education programs, graduating more STEM PhDs than the United States, and increasing the quality of its universities. In addition, China is also using talent tracking and recruitment programs—at home and abroad—to exploit foreign knowledge and know-how. These initiatives could both benefit Chinese competitive efforts and expose foreign researchers, academics, and students to risks.

To complement its domestic efforts to cultivate talent, the PRC also attempts to capture talent and knowledge from abroad through State, Party, and even local

talent recruitment programs.* The broader goals behind these programs include stimulating Chinese technological and economic innovation and growth and incorporating Chinese and non-Chinese students and experts into the government, military, academia, or industry.

Talent tracking efforts, perhaps most prominently (but not exclusively), the Thousand Talents Plan, capture insights and knowledge from abroad in several ways. One is by capitalizing on the experiences and insights gained by Chinese students studying abroad through programs like the “Support Plan for Overseas Chinese Students Who Return to Start Businesses” initiative, which provides capital to start-ups who are legally represented by returning masters or PhD graduates. Start-ups classified by the Ministry of Human Resources and Social Security as “Key Entrepreneurial Projects” or “Outstanding Entrepreneurial Projects” can receive one-time awards of 500,000 RMB (roughly 70,600 USD) or 200,000 RMB (roughly 28,200 USD), respectively. Talent programs may also more directly target talent from outside China, like the “International Training Program for Artificial Intelligence Talents in Chinese Universities: Expert Forum.” Established in 2018, the forum convenes 30 global AI experts to lecture Chinese academic and commercial participants on AI-related topics.¹⁸ CSET research tracked 43 national-level talent recruitment programs and over 200 sub-national programs. These numbers may grow as the PRC aims to augment its domestic competitive advantages with knowledge and insights from around the globe.¹⁹

State Key Laboratories (SKLs) are another tool China is using both to develop its domestic innovation base and to capitalize on foreign knowledge and technology transfers. The state relies on SKLs, private and publicly funded research institutions, to conduct cutting-edge work and recruit talent to boost domestic innovation in the life sciences, engineering, information, and material sciences. Compared to the country’s overall rate of international academic collaborations, China’s SKLs collaborate with foreign partners more frequently; this is especially concerning because these labs constitute a key part of the PRC’s military-civil fusion (MCF) strategy, which aims to co-mingle and capitalize on insights from across civilian and military research. They could

* CSET’s national-level program tracker catalogs 43 different Chinese Party-State-sponsored tech talent tracking initiatives using open-source analysis of PRC ministry and government websites, state-owned media sources, and Chinese university websites. Emily Weinstein, “Chinese Talent Program Tracker” (Center for Security and Emerging Technology Webpage) <https://chinatalenttracker.cset.tech/>.

pose serious research security issues for academic researchers hoping to collaborate with Chinese partners.²⁰

Finally, **relationships between Chinese private sector firms, universities, and foreign companies offer another route by which the PRC gets insights and knowledge from abroad.** For example, Chinese Ministry of Education documents indicated the existence of training programs and partnerships between the China-based subsidiaries of Autodesk, Dell, Google, Honeywell, IBM, Intel, Merrill Lynch, Microsoft, National Instruments, Rockwell Automation, Synopsys, Tektronix, and Texas Instruments, and the “Seven Sons of National Defense” universities.²¹ The Ministry of Industry and Information Technology directly administers these universities, and in 2019 the Seven Sons provided three quarters of graduates recruited by defense state-owned enterprises.²²

In some cases, other knowledge transfers may be difficult to quantify. For example, CSET’s work has pointed out how interactions with foreign venture capital firms (VCs) could facilitate tacit knowledge transfers to Chinese AI companies given the complexities of navigating the global technology investment landscape. U.S. investor involvement China’s AI ecosystem appears to be limited based on available data from Crunchbase, which is understandable given U.S. regulatory concerns around investing in companies that may be linked to the military-civil fusion strategy. Yet while U.S. VCs’ investments in Chinese AI companies are comparatively small, these firms may receive important intangible benefits in the form of name recognition, mentorship and coaching, or connections to strategic networks that would fly below the radar of current U.S. export controls and are worthy of further exploration.*

* It is also worth noting that U.S. investors gain insights into Chinese AI companies and their products from these interactions. 23-37, <https://cset.georgetown.edu/wp-content/uploads/CSET-U.S.-Outbound-Investment-into-Chinese-AI-Companies.pdf>

Relevant Recommendations for U.S. Policy

As the United States confronts the challenge posed by China's foreign efforts to gain a competitive edge, CSET offers policymakers recommendations for how to maintain and grow U.S. comparative advantages. These recommendations include concrete, near-term steps, as well as longer-term suggestions for navigating strategic competition.

- **In the context of long-term strategic competition with China and AI's effect on national power, U.S. policymakers should consider how AI introduces new elements, changes the import of existing factors, and alters the goals of competition over time.**²³ The U.S. has opportunities to adopt new mental models and consider new frameworks for analyzing AI-driven competition with China. * AI may change U.S. strategic and policy goals, creating opportunities for technology-related democracy promotion; shaping AI technologies to favor democracies; and developing approaches to more rapidly adapt social and economic institutions to “information attacks” by AI systems.²⁴

The U.S. should learn from its competitors without mirror imaging them, share insights with allies without presuming policy alignment with the U.S., and look ahead to how AI technologies may affect the aims and interests of U.S. allies and partners. Intellectual conformity under the authoritarian CCP may make continued evolution increasingly challenging for China — many of its main challenges for net economic-technological growth are likely to persist, while the benefits of its dynamic organizations may decline over time. The U.S. should exploit its most enduring strengths in competition with authoritarian governments: its cultural values and pluralism and access to global talent.²⁵

- The United States has historically enjoyed advantages in attracting foreign talent to its shores and workforce. As China ramps up its efforts to augment its domestic workforce in emerging technologies with knowledge and expertise

* These include: Studying the approaches of other countries, especially U.S. competitors and medium-sized, quickly-changing countries; developing strategies for global leadership in producing, using, and sharing compute resources; supporting development of AI engineering as a rigorous discipline in the United States and leveraging humans trained in it; continuing to push DOD and IC organizational reforms for how data is managed and leveraged; and leveraging AI tools, cross-training between AI and other disciplines, and high-skilled STEM immigration to access new breakthroughs in science and engineering more widely. Daniels and Chang, “National Power After AI,” pp.17-18.

from abroad, **the United States should also focus on developing and retaining its talent pipeline, particularly access to foreign skilled labor. Foreign talent is especially important in the U.S. semiconductor industry, where it comprises about 40 percent of the industry's workforce.**²⁶ It should consider **increasing country-based caps on annually distributed employment-based green cards,** and generally try to **expand the number of American students who are in semiconductor-related graduate programs.** To do so, policymakers should allocate funding to universities and government-industry-academic partnerships to facilitate the increased implementation of on-the-job training models.²⁷

- **The U.S. should prioritize open-source intelligence (OSINT) collection and analysis related to S&T amid competition with China, particularly in monitoring global developments in emerging technologies and/or their implications for economic competitiveness. Establishing a new, open-source National S&T Analysis Center (NSTAC) would help achieve this goal.** China's rapid rise in S&T has been facilitated by a staff of more than 60,000 open-source collectors and analysts monitoring and exploiting foreign S&T, which has enjoyed massive, multi-layered state support for some 65 years. The United States has no equivalent enterprise.²⁸

NSTAC would be an independent entity like the National Science Foundation, not housed within the intelligence community or limited by Title 50 authorities, and primarily or exclusively dedicated to S&T collection, analysis, and decision support, and funded for that priority. Partner entities could support private and civil society actors, potentially through public-private partnership. It would carry out open-source analysis and decision support for functions including allocating R&D investment and/or divestment, promoting international collaboration and partnerships, detecting unwanted tech transfer, channeling hiring, supporting S&T forecasting, refining assessments of foreign S&T collection and intent, and supporting long-term S&T strategic planning for federal, and, as appropriate, sub-federal authorities, as well.²⁹ A *minimum* layout would consist of a hub in the Washington Metropolitan Area staffed with 350 full-time employees and four regional outstations (Atlanta, Boston, Houston, Silicon Valley) with staffs of 25-30 each, including administrators, linguists, analysts, data scientists, subject matter experts, IT personnel, and support staff, at an estimated cost of \$125M-150M *per annum* plus facilities.³⁰

Author

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Endnotes

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⁶ Acharya and Dunn, "Comparing U.S. and Chinese Contributions to High-Impact AI," pp.19. <https://cset.georgetown.edu/publication/comparing-u-s-and-chinese-contributions-to-high-impact-ai-research/>

⁷ Matt Sheehan and Jacob Feldgoise, "What Washington gets Wrong About China and Technical Standards" (Carnegie Endowment for International Peace, February 2023), <https://carnegieendowment.org/2023/02/27/what-washington-gets-wrong-about-china-and-technical-standards-pub-89110>

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¹⁴ Ryan Fedasiuk, Emily Weinstein, and Anna Puglisi, "China's Foreign Technology Wish List" (Center for Security and Emerging Technology, May 2021), p. 14 <https://cset.georgetown.edu/publication/chinas-foreign-technology-wish-list/>

¹⁵ Fedasiuk, Weinstein, and Puglisi, "China's Foreign Technology Wish List," p. 1-11.

¹⁶ Fedasiuk, Weinstein, and Puglisi, "China's Foreign Technology Wish List," p. 11-19.

¹⁷ Fedasiuk, Weinstein, and Puglisi, "China's Foreign Technology Wish List," p. 1-3, 25.

¹⁸ Weinstein, "Chinese Talent Program Tracker."

¹⁹ Weinstein, "Chinese Talent Program Tracker."

²⁰ Emily Weinstein, Channing Lee, Ryan Fedasiuk, and Anna Puglisi, "China's State Key Laboratory System: A View into China's Innovation System" (Center for Security and Emerging Technology, June 2022), pp. 23-27 <https://cset.georgetown.edu/publication/chinas-state-key-laboratory-system/>

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²⁶ Will Hunt and Remco Zwetsloot, "The Chipmakers: U.S. Strengths and Priorities for the High-End Semiconductor Workforce" (CSET Issue Brief, September 2020), p. 15, <https://cset.georgetown.edu/wp-content/uploads/CSET-The-Chipmakers.pdf>.

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