CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

SEPTEMBER 2025

California x China: Three Areas Where This Subnational Relationship is Changing

Sarah Camacho and Matt Sheehan

California x China: Three Areas Where This Subnational Relationship is Changing

Sarah Camacho and Matt Sheehan

Carnegie Endowment for International Peace
Publications Department
1779 Massachusetts Avenue NW
Washington, DC 20036
P: + 1 202 483 7600
F: + 1 202 483 1840
CarnegieEndowment.org

This publication can be downloaded at no cost at CarnegieEndowment.org.

Contents

Introduction 1

The New Landscape for Chinese Students in California 2

Chinese International Student Policy Milestones 3

Undergraduate Enrollment Plummets, Grad Enrollment Climbs 5

Implications 7

California's Role in the U.S.-China Technology Ecosystem 9

Silicon Valley and China Deepen Ties (2008–2018) 10

Backlash and Decoupling 12

The Road Ahead 14

Flipping the Script in Green Tech 15

National Tensions, Local Adaptation 16

Leveraging Chinese Tech 17

California's Climate Future 19

How This All Adds Up 19

About the Authors 21

Notes 23

Carnegie Endowment for International Peace 29

Introduction

California has carved out a unique space for itself as a subnational leader in higher education, technology, and in addressing climate change. What links those three areas further is the extent to which California has forged its relationship with China on each issue. China has served as a partner, competitor, and in some cases, obstacle to making progress. Now, California must manage changing U.S.-China dynamics along with shifting federal regulations coming from Washington, DC. In an era of increasingly transactional U.S. foreign policy, California's leaders need new strategies to both harness the benefits that working with China brings and to guard against the accompanying political, economic and technological risks. This paper explores California-China ties in higher education, climate change, and information technology to inform progress that can still be made in each area.

Each of these sectors has seen a tug of war between local leaders and the federal government over who gets to decide how California institutions engage with China. During the decade after the global financial crisis of 2008, California-China ties in education, climate and technology saw explosive growth. The number of Chinese students attending California universities skyrocketed. California's mayors, governors, and business leaders forged impactful partnerships with their Chinese counterparts working on climate change and green technology. And in information technology, Silicon Valley and China became deeply entangled by the two-way flow of people, money, and ideas. While all of these California sectors were nominally subject to interventions by the federal government, local leaders were given relatively free rein to decide how they wanted to engage with China. It was up to California universities how much they wanted to increase Chinese enrollment, and Silicon Valley venture capitalists whether they wanted to invest in Chinese startups.

But over the past eight years, the federal government has asserted its right to police many of these interactions, often in the name of national security. Federal restrictions on student visas, cross-border investments, and technology cooperation have shifted much of the decisionmaking power in these relationships away from California and back to Washington. Many of these actions have been part of the broader U.S.-China "decoupling," a sea change in relations after decades of deep engagement.[1] In some cases, these have been needed corrections, preventing core national interests from being sacrificed at the altar of local interests or financial expediency. And they helped balance the scales in certain industries where government subsidies and industrial policies unfairly advantaged Chinese firms. In other areas, these federal interventions have been misguided or ham-fisted, based on deep misunderstandings of the nature of scientific research or the drivers of American innovation.

Now, looking back on nearly a decade of decoupling, we can evaluate the impacts of these changes, and help California leaders prepare for what comes next. In some cases that will mean simply adjusting to the new realities that geopolitics have imposed. In other areas, state leaders can creatively leverage aspects of U.S.-China competition to vault California forward in critical industries.

The following sections will explore the impact of federal policy changes on Chinese student enrollment at California's public universities, the state and future of Silicon Valley's tangled ties with China's tech ecosystem, and how California can leverage China's advancements in green tech to turbocharge the Golden State's own industries.

The New Landscape for Chinese Students in California

The 2010s boom of Chinese international students enrolling in American universities has come to an end, and California's universities must adapt to this reality. California has long been the top destination for Chinese international students. Between 2010 and 2019, the number of Chinese students enrolled in the public University of California (UC) system more than quintupled, from just over 4,000 in 2010 to over 25,000 in 2019.[2] But the downward spiral in U.S.-China relations, coupled with the COVID-19 pandemic, have led to a 25 percent decline in total Chinese enrollment over the past five years, both in California and nationwide.[3]

Chinese students have been a source of talent and funding for California's universities. After the 2008 global financial crisis, the rise in full-tuition international undergraduates helped supplement the budgets of public universities amid a dramatic decline in public funding. During this same period, an extraordinary number of top-tier Chinese students—particularly in STEM fields—chose to pursue graduate education and career opportunities in California. According to 2023 data on the UC system, Chinese students represent 32

percent of PhD candidates in computer science and 24 percent of those in engineering.[4] Moreover, the influx of Chinese students has made California's universities decidedly more international, infusing new cultural currents and life experiences into some of the world's best universities. As the number of Chinese students in California falls, the state's educational institutions must grapple with how to fill the void.

But hidden by the overall declines in Chinese enrollment there are important and counterintuitive trends. Despite dramatic declines in Chinese undergraduate enrollment in California, the number of Chinese PhD students remains at or near an all-time high.[5] This upward trend is particularly surprising given the years of U.S. policy specifically targeting Chinese graduate students for extra scrutiny and tighter controls on student visas. The extraordinary resilience of Chinese graduate student enrollment suggests that California's top STEM programs have remained an academic magnet despite regulatory obstacles.

With the second Donald Trump administration underway, the power of that magnet will be put to the ultimate test. In contrast to Trump's first term, concerns over Chinese students today penetrate beyond graduate student research in critical technologies, and now extend to admissions for all Chinese students.[6] Increasingly restrictive visa policies could drive down both populations. Undergraduates have the incentive to turn to other countries as the United States becomes less hospitable to Chinese nationals. Graduate students may reconsider their options if prohibitive visa policies make completing a degree less likely. This is especially true in the wake of an April wave of student visas removals across the country.[7] Universities should prepare to continue seeing the Chinese international student numbers decline and plan accordingly.

Chinese International Student Policy Milestones

The past fifteen years of Chinese enrollment in U.S. colleges and universities can be characterized as a boom and bust. The boom (2010–2019) reflected an increase in interest both from Chinese families of means and from American universities looking to increase their international student population. The bust (2019–2025) was precipitated by mounting restrictions on Chinese student visas during the first Trump administration, but in reality, began after the onset of the COVID-19 pandemic and resulting travel restrictions.

The boom in Chinese students studying in the United States coincided with a period of more open engagement in the U.S.-China relationship and a soaring Chinese economy. The United States welcomed an influx of Chinese students during the 2010s that increased the overall Chinese international population by 58 percent between 2013 and 2020. In California, this increase was even more dramatic, with the University of California system seeing an 113 percent increase in its total Chinese enrollment over the same years.[8]

During the first Trump administration, the White House rolled out a series of policies aimed at curbing Chinese student enrollment. These were largely motivated by the belief that these students were helping China overtake the United States in critical technologies, either by simply bringing their newly acquired skills back home or through outright espionage and theft.[9] These concerns were driven both by real incidents of technological theft, and by persistent misperceptions about Chinese student "stay-rates" after graduation.[10] Data on the long-term stay rates of all Chinese PhD students in the United States, as well as data on the career trajectories of top-tier Artificial Intelligence (AI) scientists, indicates that the large majority of these students chose to build their careers in the United States, with California as a major hub.[11]

Still, the Trump administration largely viewed Chinese students—particularly in critical STEM fields—as a threat. In 2018, the administration increased restrictions for visas issued to graduate Chinese international students studying in fields that China identified as useful for its "Made in China" domestic manufacturing initiative.[12] The restrictions forced graduate students to renew their visas annually if they leave the country, with many students caught in limbo for months or even years, stuck back in China during trips home and unable to resume their half-finished PhDs at California universities. Also in 2018, the "China Initiative" was put forth by the U.S. Department of Justice to scrutinize graduate students and professors suspected of economic or technological espionage or theft.[13] After a number of high-profile indictments, many of those accused of wrongdoing eventually saw the most serious charges dropped, with the cases often ending in dismissal or minor infractions of "research integrity" for failing to list all their affiliations on funding applications.[14] The initiative sent a chill through the large community of U.S.-based researchers of Chinese origin.[15] Finally, a 2020 proclamation took aim at graduate students and researchers suspected of aiding China's civil-military fusion efforts.[16] Alongside these more targeted policies, the administration also entertained far broader restrictions: considering turning away all Chinese students.[17]

But amid growing political rancor and increased scrutiny, the number of Chinese undergraduate and graduate students in the United States continued to rise, albeit more slowly than in previous years. It wasn't until the onset of the COVID-19 pandemic that Chinese enrollment began to drop. Flights from China to the United States were suspended and cut down as a result of COVID-19 concerns and the deteriorating relationship between U.S. and Chinese leadership.[18]

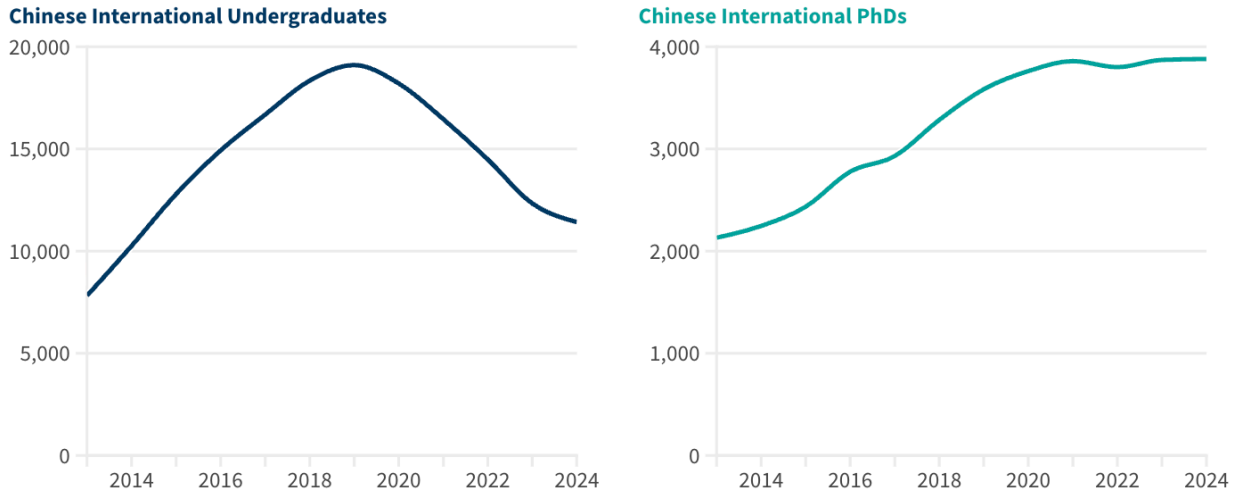
The decline started by the COVID-19 pandemic and chill in U.S.-China relations has persisted. Trump-era restrictions on graduate students visas remained in place during Joe Biden's administration.[19] And despite the formal ending of the China Initiative, suspicion of Chinese researchers and professors in American universities continues.[20] However, while restrictions and extra scrutiny have targeted Chinese graduate students, it is Chinese *undergraduate* enrollment that has declined. Graduate enrollment has remained consistent with, and in some cases exceeded, pre-pandemic numbers.

Undergraduate Enrollment Plummets, Grad Enrollment Climbs

The most detailed data on Chinese enrollment trends in California comes from the University of California system's "Fall Enrollment at a Glance" dashboard.[21] While Chinese enrollment in California extends far beyond these public universities, the UCs account for approximately 35 percent of the Chinese student population in the state, and the system includes four out of the five institutions receiving the greatest number of students.[22] Given the depth and detail of data from the UC system, it provides a useful—though not perfectly representative—insight into enrollment trends statewide.

Data from the UC system shows that undergraduate enrollment in the UCs has declined alongside national numbers. The population of Chinese international undergraduate students fell by 40 percent between 2019 and 2024. That decline represents a loss of over 7,600 students and over $380 million in potential nonresident tuition.[23] The steepest declines were in the majors of business and engineering, which each fell by 52 percent.[24] Physical sciences/mathematics, the most popular major for the Chinese undergrads at the UCs, fell by 41 percent.[25] Both engineering and the physical sciences/mathematics majors fall into the bucket of fields targeted by the policies of the first Trump administration. However, undergraduates were exempt from the new visa restrictions imposed by the first

Figure 1. Chinese International Students at UCs



Source: University of California

Trump administration, which indicates that these students were electing not to enroll in the UCs as opposed to being prevented. The trend reflects a potential change in attitude among Chinese high schoolers and their families, who may see the value of a potential U.S. degree differently than their predecessors.

In contrast, enrollment among Chinese PhD students at UCs remains stable. Over the last decade, the population of Chinese PhD students has increased by 8 percent. Between 2019 and 2023, enrollment in engineering, the most popular PhD field for this group, remained strong with over 900 students each year. Notably, computer science PhDs increased by 43 percent, making it the third largest field for Chinese PhD students. With tensions increasing between the United States and China on the issue of AI development and competition, this increase in Chinese PhD enrollment is surprising at first glance. Moreover, stable enrollment in physical sciences/mathematics, targeted fields under the Trump administration's restrictions, shows that graduate students are still looking for critical training in the United States and specifically California's public universities.

In other words, the student population that has been directly targeted by visa restrictions and mounting investigations has seen its numbers rise, while those less affected by these policies have seen major declines. An explanation likely lies in the different motivations that Chinese undergraduate and graduate students have for studying in the United States. Generalizations around the motivations of tens of thousands of students will inevitably be overbroad, but are nonetheless helpful for understanding these shifting tides in enrollment.

Around 2008, many students and families were beneficiaries of a booming Chinese economy. In earlier decades, the only Chinese students who could afford to come to the United States for university were graduate students (particularly PhD students), many of whom paid little to nothing in tuition. They had left a China that lagged decades behind the United States in terms of standards of living, and offered few opportunities to work at the frontier of scientific and technological research. But after three decades of breakneck economic growth, China developed a large middle and upper class who could afford to foot the bill for full undergraduate tuition at an American university, as well as years of preparatory courses and guidance from admissions consultants. Applying to U.S. universities requires years of English training to take the TOEFL (Test of English as a Foreign Language), rigorous preparation for the SAT instead of the infamous Chinese college entrance exam, and investing in extracurriculars, which barely factor into Chinese college admissions criteria. This arduous process shaped the characteristics of this new wave of Chinese international students. For many Chinese families, sending a child to the United States to study became something more akin to a luxury good and status symbol, as opposed to a decision driven purely by the educational and professional opportunities. Many students, though not all, were reaping the rewards of their family's economic prosperity in China with luxury apartments and lifestyles in the United States. Some other Chinese undergrads were motivated by the desire to escape the Chinese educational system and experience a more open academic or political environment.

But on the whole, this group was not compelled to go to the United States out of necessity. Studying in the United States was an option, and a good one, as long as the environment remained welcoming. But when that macro-environment turned sour—due to deteriorating U.S.-China relations, rising anti-Asian sentiment, and prolonged pandemic controls—many families and students opted to simply stay in China.[26] In economic terms, Chinese demand for a U.S. undergraduate education was "elastic" with respect to overall sentiment in the U.S.-China relationship.

Demand for graduate degrees from U.S. universities has thus far been more inelastic with respect to these factors. Environment and lifestyle will factor into anyone's decision about where to live and study for half a decade, but in the case of Chinese PhD students, the far more important factor appears to be the chance to work at the global frontier of their field. For the last several decades, those opportunities were often found in California universities, and until recently that attraction proved strong enough to overcome many new visa hurdles and deteriorating U.S.-China relations that often cast a pall of suspicion over their work.

Implications

Going forward, this resilience will likely face its greatest test, due to factors on both sides of the Pacific. For Chinese students and researchers, their home country now offers far more opportunities to work at the global frontier of technical fields, from AI to next-generation electric batteries, than ever before. Whereas many PhD students from the 1980s through the 2010s felt they had to leave the country to do this work, they now have the option to do it at home. At the same time, many provincial and local CCP branches have begun barring Chinese nationals who earned degrees abroad from aspects of the nation's civil service, and strictly limiting international travel and study for even low-level public sector employees.[27]

And on the U.S. side, what began as extra layers of scrutiny on visa applications now appears to be evolving toward more extreme and unpredictable measures. In the early months of the second Trump administration, the sudden cancellation of over a thousand valid student visas nationwide caused a surge of insecurity for all international students.[28] Though many of these cancellations didn't specifically target Chinese students, they are another factor being piled on top of significant legal precarity faced by that group.[29] Then, Secretary of State Marco Rubio announced a plan to "aggressively revoke" Chinese students, only for Trump to contradict that sentiment, by welcoming Chinese students, and saying they "have always been good with [him]."[30] Just two months later, Trump stated that the United States would allow entry for 600,000 Chinese students: more than double the number currently studying in the country.[31] Such a political whirlwind, entangled with trade skirmishes between the United States and China, understandably leaves Chinese students at a loss for how to plan their futures in the United States. Finally, with the federal government cancelling billions of dollars in funding for both American universities and federal research programs, pursuing a research-intensive PhD in the United States looks like an increasingly risky proposition.

The impacts are likely to be even more pronounced for Chinese undergraduates, who have thus far proven to be more sensitive to the deteriorating relationship between the United States and China. A four-year, possibly full-tuition, stint in the United States will continue to lose its appeal if there are fewer incentives to leave China and the United States becomes less welcoming.[32] Factors that have made the United States feel less hospitable to students include increased anti-Asian sentiment, fear of gun violence, and the pressure of U.S.-China tensions.[33] The number of Chinese undergraduates studying in the United States will very likely decrease over the next five years, and the drop could be quick and precipitous.

University administrations need to prepare for this possibility. The first consideration for public universities may be how to brace for changes to university revenue from out-of-state tuition fees. If we assume that all Chinese undergraduates paid full nonresident tuition, then the decline in UC enrollment between fall 2023 and fall 2024 would represent a potential $32 million loss in tuition.[34] California's universities may consider increasing recruitment of international students from countries other than China to substitute nonresident student fees. They may also look to public universities in other states that have taken measures—including purchasing insurance—to offset potential tuition losses from declining Chinese enrollment.[35]

Potential declines in Chinese graduate student enrollment pose a different challenge. Chinese PhD students often pay minimal tuition, but they are a key source of research talent that helps keep California's universities ranked near the top nationwide in fields such as engineering and computer science.[36] If California's universities see steep declines in Chinese PhD enrollment, the talent gap won't be easy to fill.

A key indicator for the future Chinese-specific student visa policy could be Stephen Miller's role as Trump's deputy chief of staff. During the first Trump administration, Miller advocated for a ban on all Chinese students.[37] At the time, Miller did not win that debate, but there's more appetite for broad restrictions on student visas today, and GOP lawmakers have also proposed legislation along those lines.[38]

Looking at the next four years of potential federal policy changes, university administrators should remain vigilant. During the 2010s boom in enrollment, it was university administrators in places like California and Iowa who made the key decisions about how many Chinese students to enroll. At the time, Washington seemed content to let these local actors be the judge of who should be allowed on U.S. campuses. But over the past eight years, the federal government has used all the tools at its disposal to wrest that decisionmaking power away from educators and administrators in the states.

That doesn't mean educators are powerless in this equation. Local leaders—whether university administrators, professors, or others across the education ecosystem—can find ways to affect these issues on the margins. They should strongly signal their continued support and offer greater resources for students facing visa difficulties. And they should engage with federal government officials and congressional representatives to drive home the benefits these students bring to American universities and the nation's research ecosystem.

When members of the first Trump administration were debating an all-out ban on Chinese students in 2018, the pushback came from U.S. Ambassador to China Terry Branstad, the former Iowa governor and Des Moines University president. During an Oval Office meeting, Branstad reportedly argued that such a ban would end up hurting small colleges in places like Iowa, and his arguments won over the president.[39] Much has changed in the politics and economics of Chinese student enrollment, but university presidents and educators should continue to make this case to decisionmakers in Washington.

The incentive to retain Chinese talent is especially strong where California's role as a technological leader is concerned. As the following section of this paper will explore, these people-to-people ties have played a critical role in the evolution of the shared U.S.-China technology ecosystem.

California's Role in the U.S.-China Technology Ecosystem

Technology has become the key flashpoint in the U.S.-China relationship, and California remains ground zero for both technological competition and cooperation between the superpowers.

For the first two decades of the twenty-first century, Silicon Valley's ties to China were deep and, at times, paradoxical. The two technology ecosystems—research communities, supply chains, and investment flows—were deeply intertwined with one another. But the companies, products and markets created by those ecosystems remained largely walled off from one another. Most of Silicon Valley's leading internet platforms were blocked in China, and China's domestic tech companies couldn't crack the U.S. market. During this period, approximately 2000–2018, the key actors and decisionmakers in this relationship were not in Washington. Instead, it was entrepreneurs and investors, researchers and corporate executives, who were building the relationship. They were the ones choosing to set up research labs in each other's countries, to invest in startups across the Pacific Ocean.

At that time, the U.S. federal government largely stayed out of the way, both because it was often oblivious to events on the ground and because it didn't see a reason to intervene. The United States was the undisputed global leader in technology, and China was seen as a copycat and technological backwater, a passive player that would one day have its markets cracked open by American firms.

But beginning around 2018, the U.S.-China relationship began to deteriorate at precisely the moment that technology was moving to the center of the relationship. Governments in both countries began scrutinizing these rich cross-border ecosystems much more closely. By

fostering connection, computer scientists at UC Berkeley and Tsinghua University may have seen the opportunity to jointly push the frontiers of AI. But national security professionals worried about a technological advantage being shared with an adversary. This security-focused lens shed new light on longstanding ties, in some cases highlighting problematic practices and in others smothering mutually beneficial exchanges.

Together, these forces began to tear at the fabric of transpacific technology ties. The U.S. federal government began imposing controls on inbound Chinese investment and the export of advanced semiconductors. China accelerated its drive for indigenous innovation that couldn't be snatched away by the United States. Those changes—often characterized as technological decoupling—further accelerated in 2020, with the onset of the COVID-19 pandemic and mounting controls on cross-border flows of people, money, ideas, and goods.

Today, the technology ecosystem in California faces a radically different geopolitical landscape than just a few years ago. In response to these changes, the key actors and institutions in California's technology ecosystem—companies, universities, technologists, and investors—are finding new ways of relating to both their Chinese peers, as well as to the U.S. federal and California State governments. Ensuring those relationships are safe, productive, and sustainable in this new landscape will require creative problem solving. It needs an approach that works within the realities of new geopolitical and security threats, while also maximizing the opportunities generated by bridging the world's two most dynamic innovation ecosystems.

To chart a path forward, we must first understand how we got here.

Silicon Valley and China Deepen Ties (2008–2018)

In the decade before decoupling began, China and California's technology ecosystems were enmeshed in an almost paradoxical relationship: while the flow of people, money, and ideas soared to new heights, the markets—and fundamentally the internets—of the two countries remained starkly divided.[40]

There was a brief period in the 2000s in which the Chinese government allowed platforms like Google, Facebook, and Twitter to operate in China. By 2010, however, the Chinese Communist Party (CCP) had banned all of them.[41] It viewed American internet platforms as dangerous conduits for unwanted and uncontrollable information and content, potential vectors for political influence operations in China by the U.S. government.[42]

In the wake of these bans, a question loomed over China's internet ecosystem: would it flounder without access to the leading global platforms? Or could Chinese companies fill the gaps left by the American tech giants? Some U.S. companies were banking on the former, believing that the CCP would eventually, begrudgingly let them back in. But the CCP held the line, and it paid off.

China's early internet companies like Baidu, Alibaba, and Tencent—many of whom had been competing against, and sometimes triumphing over, their American peers for years—soared to new heights. And in their wake, a new generation of Chinese internet startups took off, sometimes imitating their U.S. peers and then innovating on both business models and technical approaches. Tencent pioneered the "superapp" model with WeChat, an all-in-one app that became the digital Swiss Army knife for life in China.[43]

While U.S. and Chinese internets grew further apart, the flow of people, money, and ideas between the two tech ecosystems accelerated. Chinese tech giants established research facilities in Silicon Valley, and American tech talent took up roles in Chinese companies. Chinese enrollment in California's universities—particularly in computer science degree programs—continued to climb. By 2022, over one-third of the top-tier AI researchers working in the United States had completed their undergraduate studies in China.[44] Venture capital (VC) investors from both countries began ploughing money into startups on both sides of the Pacific.[45] And though the flow of product ideas and cutting-edge research had long been unidirectional from the United States to China, American researchers and product managers began looking to their Chinese peers for ideas. U.S.-owned research labs in China produced some of the most-cited AI research of this era, and California's biggest internet platforms began imitating the features and functionality of apps like WeChat.[46]

The extended tech boom in China also enticed major U.S. tech companies to try to (re) enter China's markets. Both Uber and Airbnb entered China for the first time, attempting to outduel local competitors. Mark Zuckerberg launched an extended charm offensive targeting Chinese people and CCP leaders.[47] Both Facebook and Google reportedly invested in developing new censorship tools and alternative versions of their products that they hoped would give them a second chance in China.[48]

But these efforts all failed. Uber and Airbnb were outcompeted and effectively forced to exit the Chinese market. The CCP entertained the entreaties from the likes of Facebook and Google, but reentry was simply not in the cards. Afterall, the party had gotten its desired outcome: thriving homegrown technology giants that didn't pose the same risks of defiance or foreign influence.[49] The notable exceptions to this rule were U.S. tech companies that focused on hardware products rather than online content. Apple enjoyed a decade-long boom with Chinese consumers, while Tesla made significant inroads in China's early electric vehicle markets.[50] Meanwhile, Chinese technology firms were enjoying some of their first major successes in international markets. Huawei was emerging as a leader in 5G networks globally, while TikTok—itself a blend of apps built in California and Beijing—began its rise to become the dominant social media platform for youth culture worldwide.[51]

Over the course of a decade, American views on China's technological capabilities has undergone a sea change.[52] It went from being viewed as a technological backwater and a massive potential market for American firms, to being viewed as a hotbed for innovation and a formidable competitor in its own right. That reversal helped lay the foundation for a backlash that would fundamentally alter the trajectory of technology and geopolitics for the next decade.

Backlash and Decoupling

During 2017 and 2018, concern in Washington about the state of the U.S.-China technology relationship began gathering momentum. Politicians and analysts who had dismissed China as being incapable of innovating—often citing the country's lack of free expression as the key obstacle—were alarmed to find that China had created a dynamic technology ecosystem that rivaled the United States on some counts. They were also surprised to learn about the amount of interaction between Silicon Valley and China, which had long gone underreported or simply ignored. Consequently, those politicians concluded that the dense web of connections between Silicon Valley and China was driving China's unexpected technological rise. Putting these two things together—the extensive ties and China's "sudden" rise" in technology—the policy prescription was clear: cut the ties. In the process, the U.S. federal government sought to regain control over decisions that had long been left up to local actors in California, from startup founders to PhD students and VC investors.

In the quest to cut the flow of people, money, and ideas, money came first. The federal government already had a mechanism for reviewing—and potentially blocking—foreign investments into the United States that may threaten national security: the Committee on Foreign Investment in the United States (CFIUS). CFIUS had already been used to block some Chinese acquisitions of semiconductor companies, but it didn't have jurisdiction over VC investments because they usually did not give the investor control over the investee. So in 2018 Congress passed the Foreign Investment Risk Review and Modernization Act, which gave CFIUS the power to review foreign VC investments, as well as a wide range of other agreements that might involve technology transfer.[53]

The bill had an impact even before it went into force, in large part due to the chilling effect on both Chinese investors and U.S. startups.[54] Startups and VC investors must be nimble and fast-moving, and the prospects of an extended bureaucratic review process made these deals unattractive to both sides. In the months and years after the law was passed, many leading Chinese VC firms closed their U.S. offices or dramatically reduced their activity. Some simply redirected those investments back into China's tech ecosystem, while others sought new markets in India, Southeast Asia and beyond. Others have continued to operate in the United States, either avoiding sensitive technologies or working through the CFIUS review process when necessary.

Washington then turned its attention to U.S. VC firms investing in China's tech ecosystem. U.S. investors had been involved in China's startup ecosystem since its inception, and during the 2010s had ramped up investment in emerging technologies like AI.[55] Increasing government scrutiny of outbound investments by U.S. firms was a contentious proposition, and the new rules didn't go into effect until the beginning of 2025.[56] But as U.S.-China relations deteriorated and political pressure on these investors increased after 2020, yet another chilling effect led many U.S. firms to dramatically reduce their activity or to exit the Chinse market entirely.

Of the different flows connecting Silicon Valley and China, people proved much more difficult to cut off than money. Capital doesn't have a life or a family, and so when political or regulatory conditions make it harder to earn a profit, the capital will simply relocate. Attempts to halt or reverse the flow of people between the two ecosystems are slower. The preceding chapter of this paper on Chinese students covered the raft of visa restrictions that targeted Chinese students studying in the United States. The Department of Justice's China Initiative targeted Chinese professors and researchers in the United States, accusing them of intellectual property theft (only to see those charges later dropped in many cases).[57] Here we note that these human ties have thus far proved much stickier and more resilient in the face of mounting political and regulatory pressure to decouple. Whether they can remain so in the years ahead is an open question.

The final arena of exchange—the transpacific flow of ideas and innovations—also came under pressure around 2017 and 2018. Research collaborations had previously flourished, making the two superpowers the world's most frequent collaborators in fields like AI.[58] Political pressure led to greater scrutiny and major debates about the strategic or ethical dimensions of these research partnerships. But for the most part, these ties remained relatively resilient.[59] In some cases, U.S. companies did choose to place new limits on the research projects conducted in their Chinese labs, and in others, they closed some labs entirely.[60] But during this same period, indirect technical exchange increased, with scientists and entrepreneurs in both ecosystems closely studying and often building upon the work of their peers across the Pacific. The rise of leading-edge open-source AI models—released by both Chinese and American developers—has led to far more technical interactions between the superpowers that are not mediated by markets or dependent on direct collaboration. Researchers, engineers, and companies in both countries are now rapidly adopting, adapting, and building atop each other's innovations. One prominent Silicon Valley investor recently estimated that the majority of U.S. startups building atop open source AI models are now using Chinese models as their base.

Ironically, the era of U.S.-China technology decoupling coincided with the first example of a Chinese app gaining a dominant position in U.S. consumer technology markets: TikTok. China had long blocked U.S. internet platforms, but the U.S. government had simply relied on the fact that Chinese apps and platforms were not competitive in the United States. TikTok changed that and it forced American policymakers into an uncomfortable position. Their reaction in attempting to block the platform was similar to, though far less effective

than, how the CCP reacted when U.S. internet platforms were winning markets in China during the late 2000s. Today, nearly five years after the first serious attempt to block TikTok in the United States, the app is more dominant than ever, despite the ongoing regulatory limbo.[61]

The Road Ahead

After seven years of attempts at forced decoupling, the connections between the world's leading innovation ecosystems have been curtailed in some areas but grown even closer in others. While venture capital flows are reaching new lows and formal research partnerships dwindle, open source models have entwined the ecosystems in new ways.

Decoupling can be partly understood as an attempt to wrest decisionmaking power over the U.S.-China ties from California to Washington, taking power out of the hands of private actors—technologists, investors, and companies—in the Golden State and into the hands of policymakers and officials in the Capitol. Now we are in a position to evaluate the impacts of that shift, and to find an appropriate balance, or even synergy between these different groups. This shouldn't be an attempt to reach a definitive verdict on who was "right" in debates over technological decoupling. Some attempts to sever these ties proved to be heavy-handed or shortsighted moves that backfired on U.S. national interests. Some researchers and companies who attempted to bridge these two ecosystems ended up bolstering Chinese tech capabilities that were later weaponized against the United States or put to deeply unethical ends.[62] Given these potential pit falls, scientists, intelligence officers, entrepreneurs, and bureaucrats have much to learn from each other in this space.

Forging a healthy path forward requires that key actors in California and Washington, DC can see these issues through the lens of the other, all while bringing their own unique insights to bear on these questions. Technologists in California are in a unique position to give grounded assessments of the state of play in technological competition, as well as the likely trajectory of the technology itself. But they must also recognize they have limited insight into the political context and security structures within which many of their Chinese counterparts are embedded. Bridging these knowledge gaps between Washington and Silicon Valley will require appropriate humility on both sides.

And while direct collaborations between researchers or innovators in California and China are increasingly fraught, a combination of open science and open-source technologies freely shared on the internet means that they can increasingly building on one another's work. These groups may no longer be working together under the same institutional roof, but the innovations generated remain deeply intertwined, nonetheless.

Flipping the Script in Green Tech

For decades California has been a leader in climate policy and technology, and it has used that position to proactively engage with China on reducing carbon emissions in both places. But today, California faces new technical, diplomatic, and geopolitical realities that are forcing it to reevaluate its strategy for reducing emissions and supporting its own green tech industry.[63] China has carved out a sizeable lead in green industries like batteries, electric vehicles, and renewable energy.[64] Federal commitments to international cooperations to reach sustainability targets have been dissolved, and a second Trump presidency has ushered in an era of highly transactional diplomacy. And the extraordinary deterioration of U.S.-China relations has made any form of engagement with Chinese counterparts more difficult and politically risky. For California to remain a leader in green technology and climate policy, it needs to adapt to these realities.[65]

The first Trump administration's abandonment of climate issues pushed the California-China relationship to manage a climate agenda on its own terms. However, the challenges to climate coordination between the two are different today than they were in 2016. First, the sense that collaborating with China on most fronts is undesirable persisted and intensified through the Biden-era. Second, the climate technology industry has become intermingled with narratives of national security, making it a sensitive space for U.S. interests.[66] Third, a resurrection of Trump-era reneging on climate obligations further solidified the perception that the United States is an unreliable partner. Whereas Chinese counterparts may have persevered through the first Trump administration, a second Trump administration could wear down patience to maintain the U.S.-China relationship on climate. While California leaders should continue the state's tradition of subnational climate diplomacy with China, today much of the action—and the opportunity—lies elsewhere.[67]

California should put its climate ties with China to work enhancing California's own competitiveness in green tech industries. It can do that by bringing Chinese technical know-how stateside, using it to upgrade its own industries and upskill its own workforce. The state should use the incentives at its disposal to push for technology sharing or California-based manufacturing that can bring China's expertise to the Golden State again. This is a version of the playbook that China used for decades when it was catching up to the United States in other industries, from automotive manufacturing to telecommunications. Now with China as the world leader in most green tech fields, California needs to flip the script and leverage these tactics to catch up with China.

National Tensions, Local Adaptation

When Donald Trump took office in 2016 and walked back the United States' commitment to international climate goals, California's officials refused to do the same. Then-governor Jerry Brown became the self-appointed leader for those Americans who believed in prioritizing a climate agenda.[68] Brown took up the mantel the day following Trump's withdrawal from the Paris Climate Agreement by flying directly to China. To Brown, any reservations about working with China needed to be set aside to continue bilateral progress on lowering emissions and growing sustainable energy solutions.

Brown had already made climate a priority for his governorship, and California state officials had been working with Chinese counterparts on pollution and carbon emissions for well over a decade.[69] But Trump's arrival to office required ramping up this work. Brown's efforts included domestic policy initiatives and external diplomacy. Within the state, Brown pushed for aggressive emissions targets that would make California carbon neutral by 2045 and extended the life of cap-and-trade policies.[70] The latter was a policy he advocated in China as well.[71] Brown also took on the role of envoy for the United States in multilateral climate discussions by joining meetings abroad and hosting an international climate summit in California.[72] When it came to China specifically, Brown believed China and California's climate futures were intertwined. One key example of Brown's belief in the relationship, was establishing the California-China Climate Institute at the University of California.[73] Governor Gavin Newsom has taken on a role similar to Brown with respect to China: relationship builder. He has made his own trips to China and met with President Xi Jinping as a prelude to the Asia-Pacific Economic Cooperation meetings hosted in San Francisco in November 2023.[74]

Subnational diplomacy has connected California state officials with interlocutors in Chinese cities. Representatives from the California Environmental Protection Agency and State Transportation Agency visited several Chinese cities and provinces, including Shanghai and Hainan, in March 2024 to see China's climate projects and engage in dialogue with local officials on climate measures.[75] The spring visit followed up on memorandums of understanding (MOUs) that were signed when Newsom visited China in October of 2023. Working plans for California to collaborate with Shanghai and Hainan were drawn up in greater detail, including the California-China Climate Institute as a key liaison. The tangible results of these MOUs are somewhat unclear, but, in the past, the visits of state level officials to China set the foundation for Chinese investments in green tech manufacturing in California.[76] Automotive company BYD's operations in Lancaster, CA, are an example discussed below.

In his second term, Trump poses a renewed challenge to Newsom. The president has framed himself as direct opposition to California's policy agenda.[77] From California's climate action to local policies regarding sanctuary cities for immigrants, there seem to be few things that the president and governor would agree on.[78] However, climate disasters like the January 2025 fires in Los Angeles necessitate a working relationship for a coordinated federal and state response.[79]

Leveraging Chinese Tech

One area where Trump and Newsom may find common ground is in leveraging Chinese investment and technology to expand U.S. manufacturing. Although the president has been sensitive to national security concerns around Chinese investment, legislators anticipate Trump will be willing to welcome investment that propels American companies forward.[80]

In a climate technology landscape where China is increasingly dominant, California has to play catch-up. China currently leads globally in renewable energy, EV production, and battery manufacturing for EVs.[81] China's advantages are difficult to replicate. The sheer scale of China's high-end green tech manufacturing base can't be fully recreated in California. But strategic interactions with Chinese companies can help California obtain technology that will propel its own green industries.

One way to flip the script on the current climate tech landscape is to attract Chinese businesses in key industries to California. California would need to be able to make an offer that covers two bases. First, any deal that is offered to a Chinese company would need to survive federal scrutiny—from CFIUS, for example. Second, it would need to be attractive enough to Chinese companies to agree to terms that would boost technological capabilities of American companies in the same industry.

BYD stands out as a successful example of China's green tech industry finding footing in California. BYD has been a leader in China's effort to commercialize and scale up electric vehicle technology worldwide.[82] The company opened its first U.S. manufacturing facility in 2013 in Lancaster, California. Then-governor Jerry Brown teed up the deal on one of his trips to China, opening space for then Lancaster mayor Rex Parris to court the manufacturing giant.[83] The facility, which uses union labor, has been subject to scrutiny over workers' conditions and hours.[84] However, its electric buses have been a hallmark for the company's success in California.

Nineteen of BYD's electric bus and truck models are currently approved to receive consumer-side subsidies from a California Air and Resources Board initiative to promote clean vehicle purchases.[85] In January 2025, the Lancaster City Council gave the green light to move forward with an expansion of BYD's manufacturing operations, focused on electric school buses. The development of a new 160-acre parcel of land is supported by a $30 million grant from the California Energy Commission.[86] At its maximum capacity, the new manufacturing operation would produce 4,000 electric school buses per year. The creation and expansion of BYD's operations in California have employed and upskilled hundreds of California's workers, giving engineers, maintenance crews, and assembly line workers a decade of hands-on experience manufacturing and maintaining electric vehicles. Expanding the pool of workers experienced with these technologies is a key ingredient to building a thriving green tech ecosystem in California.

Whether another Chinese green tech company can establish itself in California remains an open question. Trump has aimed to reverse Biden-era support for increasing EV usage across the United States.[87] Yet, state and federal commitments to EV proliferation do not seem likely to change. The issue for keeping those industries going will be facilitating the manufacturing of EVs in the United States, including acquiring batteries at feasible costs. Chinese companies have answers for those issues, but unease around Chinese companies is an obstacle. An example from the battery industry illustrates the world of difference between the environment that welcomed BYD in 2013 and that environment today.

Chinese battery company CATL has garnered attention as the world's leading producer of batteries for EVs.[88] In 2022, the company had reportedly been making plans to open manufacturing in the United States, but those plans have not materialized up to this point.[89] The reasons for the delay are not on record, but a worsening political environment for Chinese investment in the United States likely contributed. In the interim, CATL has been busy building partnerships with American automotive companies that are willing to license CATL's battery technology for EV production.[90] Considering the uptick in scrutiny over Chinese investment in the last three years, CATL opting for partnerships over opening manufacturing outright in the United States makes sense. As a provider of technology and services, CATL would have access to licensing and service revenue without being an equity stakeholder.

For American automakers, licensing deals will continue to be necessary for the United States' EV ecosystem. Buying access to leading-edge technology gives American workers experience working with the technology without including Chinese companies more directly in their supply chains. Ford has marched forward with a manufacturing plant that will use licensed CATL battery technology when it opens operations in 2026. The plant's construction was put briefly on pause shortly after launching in 2023 due to worker strikes and congressional inquiries into Ford's agreement with CATL, but resumed within two months.[91] Tesla, which had hoped to license CATL battery tech for its next U.S. manufacturing plant in 2023, scaled-back their own approach to simply buying CATL equipment for its existing Nevada operation. The fact that both companies continue to engage with CATL to bolster their own operations is telling of the advantages that narrowly constructed agreements with Chinese companies bring to U.S. ones.

California climate tech companies may be in the position to take potential Chinese partners like CATL into serious consideration. Under the threat or reality of tariffs, Chinese green tech might find California access points to the American market essential. Whether in exchange for subsidies or to avoid regulatory obstacles, California could bring in licensing partners to assist with scaling up manufacturing. The benefits of jumpstarting production using Chinese technological know-how could be a major factor in California's success.

California's Climate Future

What role does California want to play in climate diplomacy and green technology for the next four years? That question will shape what the Golden State is willing to do to contend with China's lead in climate technology.

Given its history of person-to-person and city-to-city exchanges, California is likely to continue to open channels of communication between Chinese and American climate experts. There are still climate leaders and institutions committed to that exact purpose. However, unless those subnational commitments materialize into actual technical exchange, California might need a different plan to move its own climate economy forward.

Past examples of Chinese companies in California and other states give reason to believe that California can make a formidable offer to attract Chinese expertise. Access to California's market for climate tech solutions should be a foundational incentive for those companies to consider opening a California factory or headquarters. Even without Chinese companies' presence at home, California could make a winning bet by licensing the technical intellectual property for key goods like batteries or even infrastructure like ultra-high-voltage power cables to bulk up transmission grids.[92] What the state will have to contend with internally is the unwavering suspicion of collaboration with Chinese entities at any level. California needs to make the deal that works in service of its own goals.

How This All Adds Up

California is navigating a shifting terrain with China. Higher education, climate change, and technology are tracks where the state has excelled as a national leader. They are also areas where California's ecosystem is deeply entangled with China, but both are affected by U.S. federal regulations that create new realities within which to operate. A combination of volatile geopolitics and a changing regulatory landscape in the United States is reshaping what's possible and what's desirable in transpacific engagement.

In the area of higher education, Chinese international students have dominated the demographics of international students in California for years. However, enrollment numbers for undergraduates, the bulk of Chinese students in California, have steadily diminished. The population of Chinese international graduate students has remained remarkably stable through past iterations of stringent visa restrictions, but circumstances are likely to worsen significantly. If California continues to see the benefit in educating Chinese talent and having Chinese professionals contribute to California's industries, measures will need to be taken to facilitate their continued enrollment. California's schools should consider how they might future-proof their plans if enrollment numbers continue to fall, including increasing recruiting international students from other countries.

In emerging technology, Silicon Valley is in a unique position to maximize the innovation upside of engaging with China, while also contributing to U.S. leadership in critical fields. For years, many policymakers in Washington and technologists in California believed the other group to be ignorant of the realities of working with China on technology. While the Washington crowd saw the technologists as naive about how the CCP manipulated these ties to China's advantage, those same technologists were puzzled by how deeply politicians misunderstood things like technical standards or the contributions of Chinese immigrants to U.S. innovation.[93] Both sides possessed real insights and blind spots, and going forward they can play complementary roles in advancing global innovation and American technological power. And with the rapid rise of open source models as a key force in AI development and diffusion, Silicon Valley's ability to both analyze and build on leading Chinese AI models may prove critical to U.S. competitiveness in the field.

California's relationship with China on addressing climate change has two dimensions: a diplomatic dimension and a technological dimension. Climate diplomacy between China and California has been geared toward reducing emissions for the past two decades. Channels of communication were stress tested during the first Trump administration. They are likely to continue at the state-to-province or city-to-city level but may decline in importance relative to technical and business engagement on green tech. In the technological and business dimension, China has gained a sizeable lead over the United States in the areas of electric vehicles, battery technology, and renewable energy. California should leverage the state's historical ties with China in these fields to facilitate investment and technology sharing that upgrades California's own green tech industries and upskills its workforce. With federal government support for climate change initiatives at a low point, California will need to be creative with its commercial ties to catch up with China on green tech.

California will continue to have choices to make about how to navigate its longstanding and rich relationships with China. At the same time, Washington will continue to have a say in what's possible, whether it is Chinese student visas, regulations on technical research exchange, or funding for climate initiatives. For California and China to continue having some healthy collaboration in the long-term, both have to adapt these relationships to those shifting realities.

About the Authors

Sarah Camacho was a research assistant in the Carnegie Asia Program. She was previously a James C. Gaither Junior Fellow in the Carnegie Asia Program. Before joining Carnegie, Sarah studied Global Studies and Educational Studies at Washington University in St. Louis.

Matt Sheehan is a senior fellow at the Carnegie Endowment for International Peace, where his research covers global technology issues with a focus on China. His research projects explore China's artificial intelligence ecosystem, the future of Chinese technology policy, and the role of technology in China's political economy. Matt is the author of The Transpacific Experiment: How China and California Collaborate and Compete for our Future (Counterpoint Press, 2019).

Notes

1 Jon Bateman, "U.S.-China Technological 'Decoupling': A Strategy and Policy Framework," Carnegie Endowment for International Peace, April 25, 2022, https://carnegieendowment.org/research/2022/04/us-china-technological-decoupling-a-strategy-and-policy-framework?lang=en.

2 Sarah Camacho, "Data from the University of California Fall Enrollment at a Glance Webpage," May 2025, https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:4e8dae06-1e6a-4d8f-989b-8da9eda14b69.

3 Sarah Camacho, "Data from open Doors," May 2025, https://acrobat.adobe.com/id urn:aaid:sc:VA6C2:6f58c7ee-d9bf-4687-9381-d63eb909eefa.

4 "Fall Enrollment at a Glance," University of California, https://www.universityofcalifornia.edu/about-us/information-center/fall-enrollment-glance; Sarah Camacho, "Data from the University of California Fall Enrollment at a Glance Webpage," May 2025, https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:4e8dae06-1e6a-4d8f-989b-8da9eda14b69.

5 Sarah Camacho, "Data from the University of California Fall Enrollment at a Glance Webpage," May 2025, https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:4e8dae06-1e6a-4d8f-989b-8da9eda14b69.

6 John Moolenaar, "Letter to Carnegie Mellon," House Select Committee on the Chinese Communist Party, March 18, 2025, https://selectcommitteeontheccp.house.gov/sites/evo-subsites/selectcommitteeontheccp.house.gov/files/evo-media-document/3.18.2025%20-%20Letter%20to%20Carnegie%20Mellon%20-%20SCC.pdf.

7 Vimal Patel, Miriam Jordan, and Halina Bennet, "Nearly 300 Students Have Had Visas Revoked and Could Face Deportation," *New York Times*, April 7, 2025 https://www.nytimes.com/2025/04/07/us/student-visas-revoked-trump-administration.html.

8 Sarah Camacho, "Data from the University of California Fall Enrollment at a Glance Webpage," May 2025, https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:4e8dae06-1e6a-4d8f-989b-8da9eda14b69.

9 Ana Swanson and Keith Bradsher, "White House Considers Restricting Chinese Researchers Over Espionage Fears," *New York Times*, April 30, 2018, https://www.nytimes.com/2018/04/30/us/politics/trump-china-researchers-espionage.html.

10 "How A Chinese Student Allegedly Stole Duke University Tech to Create a Billion-Dollar Empire | TODAY," YouTube video, July 24, 2018, https://www.youtube.com/watch?v=jyxgIIQO7eA.

11 Jack Corrigan, James Dunham, and Remco Zwetsloot, "The Long-Term Stay Rates of International STEM PhD Graduates," Center for Security and Emerging Technology, April 2022, https://cset.georgetown.edu/wp-content/uploads/CSET-The-Long-Term-Stay-Rates-of-International-STEM-PhD-Graduates.pdf; "The Global AI Talent Tracker," MacroPolo, https://archivemacropolo.org/interactive/digital-projects/the-global-ai-talent-tracker/.

12 "AP Sources: U.S. to Impose Limits on Some Chinese Visas," Associated Press, May 29, 2018, https://apnews.com/united-states-government-82a98fecee074bfb83731760bfbce515.

13 "Information About the Department of Justice's China Initiative and a Compilation of China-Related Criminal Cases," U.S. Department of Justice, updated November 19, 2021, https://www.justice.gov/archives/nsd/information-about-department-justice-s-china-initiative-and-compilation-china-related.

14 Eileen Guo, Jess Aloe, and Karen Hao, "The U.S. crackdown on Chinese economic espionage is a mess. We have the data to show it.," *MIT Technology Review*, December 2, 2021, https://www.technologyreview.com/2021/12/02/1040656/china-initative-us-justice-department/.

15 Lily Kuo and Cate Cadell, "Chinese Students, Academics Say They're Facing Extra Scrutiny Entering U.S.," *Washington Post*, March 14, 2024, https://www.washingtonpost.com/world/2024/03/14/china-united-states-university-students-border/.

16 "Proclamation on the Suspension of Entry as Nonimmigrants of Certain Students and Researchers from the People's Republic of China," Trump White House Archives, May 29, 2020, https://trumpwhitehouse.archives.gov/presidential-actions/proclamation-suspension-entry-nonimmigrants-certain-students-researchers-peoples-republic-china/.

17 Demetri Sevastopulo and Tom Mitchell, "U.S. considered ban on student visas for Chinese nationals," *Financial Times*, October 2, 2018, https://www.ft.com/content/fc413158-c5f1-11e8-82bf-ab93d0a9b321

18 Niraj Chokshi, Ana Swanson, and Vivian Wang, "China Steps Back in Airline Dispute With the Trump Administration," *New York Times*, June 3, 2020, https://www.nytimes.com/2020/06/03/business/trump-china-flights-ban.html.

19 Stuart Anderson, "Chinese Students Still Denied Visas Under Trump Immigration Order," *Forbes*, April 11, 2023, https://www.forbes.com/sites/stuartanderson/2023/04/11/chinese-students-still-denied-visas-under-trump-immigration-order/.

20 Lily Kuo and Cate Cadell, "Chinese Students, Academics Say They're Facing Extra Scrutiny Entering U.S.," *Washington Post*, March 14, 2024, https://www.washingtonpost.com/world/2024/03/14/china-united-states-university-students-border/.

21 "Fall Enrollment at a Glance," University of California, https://www.universityofcalifornia.edu/about-us/information-center/fall-enrollment-glance.

22 "Fact Sheets California 2023," Open Doors Data, November 2023, https://opendoorsdata.org/wp-content/uploads/2023/11/OpenDoors_FactSheets_California_2023.pdf.

23 "Tuition and Cost of Attendance," University of California, https://admission.universityofcalifornia.edu/tuition-financial-aid/tuition-cost-of-attendance/.

24 Sarah Camacho, "Data from the University of California Fall Enrollment at a Glance Webpage," May 2025, https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:4e8dae06-1e6a-4d8f-989b-8da9eda14b69.

25 Sarah Camacho, "Data from the University of California Fall Enrollment at a Glance Webpage," May 2025, https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:4e8dae06-1e6a-4d8f-989b-8da9eda14b69.

26 Mark Magnier, "Anti-Asian Hate US China Tensions Chinese Students America Have Much Grapple," *South China Morning Post*, January 16, 2024, https://www.scmp.com/comment/opinion/article/3248434/anti-asian-hate-us-china-tensions-chinese-students-america-have-much-grapple.

27 Vivian Wang, "No Passports, No Study Abroad: China Limits Public Employees' Travel," *New York Times*, August 3, 2025, https://www.nytimes.com/2025/08/03/world/asia/china-passports-civil-servants.html.

28 "Where Students Have Had Their Visas Revoked," *Inside Higher Ed*, April 7, 2025 https://www.insidehighered.com/news/global/international-students-us/2025/04/07/where-students-have-had-their-visas-revoked.

29 Brandon Drenon and James FitzGerald, "U.S. halts student visa appointments and plans expanded social media vetting," BBC News, May 28, 2025, https://www.bbc.com/news/articles/cy75eenl46eo.

30 "New Visa Policies Put America First, Not China," U.S. Department of State, May 28, 2025, https://www.state.gov/releases/office-of-the-spokesperson/2025/05/new-visa-policies-put-america-first-not-china/; Meredith Oyen, "Trump Administration's Conflicting Messages on Chinese Student Visas Reflect Complex U.S.-China Relations," *The Conversation*, June 19, 2025, https://theconversation.com/trump-administrations-conflicting-messages-on-chinese-student-visas-reflect-complex-us-china-relations-258351.

31 Adriana Gomez and Didi Tang, "Trump saying 600,000 Chinese students could come to the U.S. draws MAGA backlash," Associated Press, August 26, 2025, https://apnews.com/article/chinese-student-visas-trump-maga-dce4e064ea61a4df090865668ca48cde.

32 "For Many Reasons, Fewer Chinese Students Attend U.S. Schools," *Voice of America Learning English*, March 23, 2024, https://learningenglish.voanews.com/a/for-many-reasons-fewer-chinese-students-attend-us-schools/7537255.html.

33 Peter Hessler, "How Chinese Students Experience America," *New Yorker*, April 8, 2024, https://www.newyorker.com/magazine/2024/04/08/how-chinese-students-experience-america.

34 "Tuition and Cost of Attendance," University of California, https://admission.universityofcalifornia.edu/tuition-financial-aid/tuition-cost-of-attendance/.

35 Bethany Allen-Ebrahimian, "A U.S. university insured itself against a drop in Chinese students," *Axios*, August 18, 2020, https://www.axios.com/2020/08/18/university-illinois-chinese-students.

36 "Find the Best Engineering Schools," *U.S. News & World Report*, https://www.usnews.com/best-graduate-schools/top-engineering-schools; "Computer Science Rankings," *U.S. News & World Report*, https://www.usnews.com/best-graduate-schools/top-science-schools/computer-science-rankings.

37 Elizabeth Redden, "Report: Stephen Miller Pushed Ending Chinese Student Visas," *Inside Higher Ed*, October 3, 2018, https://www.insidehighered.com/quicktakes/2018/10/03/report-stephen-miller-pushed-ending-chinese-student-visas.

38 Fu Ting, "Republican legislation seeks to ban Chinese nationals from studying in the U.S.," Associated Press, March 14, 2025, https://apnews.com/article/chinese-student-republican-visa-ban-946e613a8dace3b0092580fa6fe4e50b.

39 Demetri Sevastopulo and Tom Mitchell, "U.S. considered ban on student visas for Chinese nationals," *Financial Times*, October 2, 2018, https://www.ft.com/content/fc413158-c5f1-11e8-82bf-ab93d0a9b321

40 Matt Sheehan, "Silicon Valley's China Paradox," MacroPolo, June 26, 2017, https://archivemacropolo.org/analysis/silicon-valleys-china-paradox/?rp=e.

41 Matt Sheehan, "The Chinese Way of Innovation," *Foreign Affairs*, April 21, 2022 https://www.foreignaffairs.com/articles/china/2022-04-21/chinese-way-innovation.

42 Desmond Butler, Jack Gillum and Alberto Arce, "U.S. secretly built 'Cuban Twitter' to stir unrest," Associated Press, April 3, 2014, https://apnews.com/article/technology-cuba-united-states-government-904a9a6a1bcd46cebfc14bea2ee30fdf.

43 Paul Mozur, "Forget TikTok. China's Powerhouse App Is WeChat, and Its Power Is Sweeping," *New York Times*, September 4, 2020, https://www.nytimes.com/2020/09/04/technology/wechat-china-united-states.html.

44 "The Global AI Talent Tracker," *MacroPolo*, https://archivemacropolo.org/interactive/digital-projects/the-global-ai-talent-tracker/.

45 Matt Sheehan, "The Rise, Fall, and Future of Chinese Money in Silicon Valley," MacroPolo, July 31, 2017, https://archivemacropolo.org/rise-fall-future-chinese-money-silicon-valley/?rp=m.

46 Matt Sheehan, "Who Benefits From American AI Research in China?," MacroPolo, October 21, 2019, https://archivemacropolo.org/china-ai-research-resnet/?rp=m; "Facebook's Vision of Future? Looks Like Chinese App WeChat," *Voice of America*, March 7, 2019, https://www.voanews.com/a/facebook-vision-of-future-looks-like-chinese-app-wechat/4817835.html.

47 Vindu Goel, Austin Ramzy, and Paul Mozur, "Mark Zuckerberg, Speaking Mandarin, Tries to Win Over China for Facebook," *New York Times*, October 23, 2014, https://archive.nytimes.com/bits.blogs.nytimes.com/2014/10/23/zuckerberg-speaking-chinese-shows-up-at-beijing-forum/; Loulla-Mae Eleftheriou-Smith, "China's President Xi Jinping 'turns down Mark Zuckerberg's request to name his unborn child' at White House dinner," *Independent*, October 4, 2015, https://www.independent.co.uk/news/people/china-s-president-xi-jinping-turns-down-mark-zuckerberg-s-request-to-name-his-unborn-child-at-white-house-dinner-a6679156.html.

48 Mike Isaac, "Facebook Said to Create Censorship Tool to Get Back Into China," *New York Times*, November 22, 2016, https://www.nytimes.com/2016/11/22/technology/facebook-censorship-tool-china.html; Ryan Gallagher, "Google Plans to Launch Censored Search Engine in China, Leaked Documents Reveal," *The Intercept*, August 1, 2018, https://theintercept.com/2018/08/01/google-china-search-engine-censorship/.

49 Matt Sheehan, "Will China Let Google Back In?," MacroPolo, August 6, 2018, https://archivemacropolo.org/will-china-let-google-back-in/?rp=e.

50 Meaghan Tobin, Alexandra Stevenson, and Tripp Mickle, "Has China Lost Its Taste for the iPhone?," *New York Times*, March 25, 2024, https://www.nytimes.com/2024/03/25/business/china-apple-iphones.html; Li Yuan, "In China, Tesla Is a Catfish, and Turns Auto Companies Into Sharks," *New York Times*, November 30, 2021 https://www.nytimes.com/2021/11/30/business/china-tesla-electric-cars.html

51 Natalie Jarvey, "Musical.ly Owner Merges App With TikTok," *Hollywood Reporter*, August 2, 2018, https://www.hollywoodreporter.com/business/digital/musically-owner-bytedance-merges-app-tiktok-1131630/.

52 Matt Sheehan, "How Silicon Valley Views China Across Five Dimensions," MacroPolo, November 19, 2020, https://archivemacropolo.org/how-silicon-valley-views-china-across-five-dimensions/?rp=e.

53 Matt Sheehan, "Tightening the Vise on Chinese Investment in U.S. Tech," MacroPolo, November 16, 2017, https://archivemacropolo.org/tightening-vise-chinese-investment-u-s-tech/?rp=m.

54 Rolfe Winkler, "Chinese Cash That Powered Silicon Valley Is Suddenly Toxic," *Wall Street Journal*, June 11, 2019, https://www.wsj.com/articles/chinese-cash-is-suddenly-toxic-in-silicon-valley-following-u-s-pressure-campaign-11560263302.

55 Emily Weinstein and Ngor Luong, "U.S. Outbound Investment into Chinese AI Companies," Center for Security and Emerging Technology, February 2023, https://cset.georgetown.edu/publication/u-s-outbound-investment-into-chinese-ai-companies/.

56 Thibault Denamiel, Eric Meyers, and William Alan Reinsch, "Insight into the Senate's Outbound Investment Mechanism," Center for Strategic and International Studies, August 2, 2023, https://www.csis.org/analysis/insight-senates-outbound-investment-mechanism; Antonia Tzinova, Andrew McAllister, Robert Friedman, et al., "Outbound Investment Screening Rule Goes into Effect," Holland & Knight, January 2025, https://www.hklaw.com/en/insights/publications/2025/01/outbound-investment-screening-rule-goes-into-effect.

57 "Information About the Department of Justice's China Initiative and a Compilation of China-Related Criminal Cases," U.S. Department of Justice, updated November 19, 2021, https://www.justice.gov/archives/nsd/information-about-department-justice-s-china-initiative-and-compilation-china-related; Ellen Barry and Katie Benner, "U.S. Drops Its Case Against M.I.T. Scientist Accused of Hiding China Links," *New York Times*, January 20, 2022, https://www.nytimes.com/2022/01/20/science/gang-chen-mit-china-initiative.html.

58 Edmund Andrews, "China and the United States: Unlikely Partners in AI," Stanford Human-Centered Artificial Intelligence, March 16, 2022, https://hai.stanford.edu/news/china-and-united-states-unlikely-partners-ai.

59 Cameron Kerry, Joshua Meltzer, and Matt Sheehan, "Can Democracies Cooperate with China on AI Research?," Brookings Institution, January 9, 2023, https://www.brookings.edu/articles/can-democracies-cooperate-with-china-on-ai-research/.

60 Karen Weise, Cade Metz, and David McCabe, "Microsoft Debates What to Do With A.I. Lab in China," *New York Times*, January 11, 2024, https://www.nytimes.com/2024/01/10/technology/microsoft-china-ai-lab.html; Matthew Broersma, "Microsoft Shutters Shanghai Lab In Latest China Pullback," Silicon.co.uk, April 1, 2025, https://www.silicon.co.uk/cloud/ai/microsoft-shanghai-lab-606275.

61 Kirsten Eddy, "8 Facts About Americans and TikTok," Pew Research Center, December 20, 2024, https://www.pewresearch.org/short-reads/2024/12/20/8-facts-about-americans-and-tiktok/; Greta Cross, "Is TikTok getting banned? Trump says he'll 'probably' extend deadline again," *USA Today*, June 17, 2025, https://www.usatoday.com/story/tech/2025/06/17/tiktok-ban-extension-deadline-trump-june-19/842416530007/.

62 Ryan Fedasiuk and Emily Weinstein, "Universities and the Chinese Defense Technology Workforce," Center for Security and Emerging Technology, December 2020, https://cset.georgetown.edu/publication/universities-and-the-chinese-defense-technology-workforce/; Sui-Lee Wee, "China Uses DNA to Track Its People, With the Help of American Expertise," *New York Times*, February 21, 2019, https://www.nytimes.com/2019/02/21/business/china-xinjiang-uighur-dna-thermo-fisher.html.

63 Yifan Yu, "California's Newsom Offers Open Hand to China Amid Trump Trade War," *Nikkei Asia*, May 3, 2025, https://asia.nikkei.com/Editor-s-Picks/Interview/California-s-Newsom-offers-open-hand-to-China-amid-Trump-trade-war.

64 Christian Shepherd and Jinpeng Li, "How China came to dominate the world in renewable energy," *Washington Post*, March 3, 2025, https://www.washingtonpost.com/climate-solutions/2025/03/03/china-renewable-energy-green-world-leader/.

65 Matt Sheehan, "The United States Can Flip the Script on China in Green Tech," Carnegie Endowment for International Peace, September 6, 2023, https://carnegieendowment.org/posts/2023/09/the-united-states-can-flip-the-script-on-china-in-green-tech?lang=en.

66 David Shepardson, Nora Eckert, and Abhirup Roy, "Biden's Car Tech Ban Is Powerful New Weapon Against Chinese EVs," Reuters, September 24, 2024, https://www.reuters.com/business/autos-transportation/bidens-car-tech-ban-is-powerful-new-weapon-against-chinese-evs-2024-09-24/.

67 Jeremy White, "How Gavin Newsom became a climate change crusader," *Politico*, October 23, 2023, https://www.politico.com/news/2023/10/23/gavin-newsom-climate-china-trip-00122940; "Climate Change Partnerships," California Energy Commission, https://www.energy.ca.gov/about/international-cooperation/climate-change-partnerships.

68 Oliver Milman, "Jerry Brown: Trump's 'gross ignorance' main obstacle in climate change fight," *Guardian*, September 11, 2018, https://www.theguardian.com/us-news/2018/sep/11/jerry-brown-california-governor-climate-change-trump.

69 Anthony York, "Jerry Brown makes cosmic case for carbon reduction," *Los Angeles Times*, April 11, 2013, https://www.latimes.com/politics/la-xpm-2013-apr-11-la-me-pc-jerry-brown-makes-cosmic-case-for-carbon-reduction-20130410-story.html; "Vital Partnership California and China Collaborating Clean Energy and Combat," Asia Society, https://asiasociety.org/center-us-china-relations/vital-partnership-california-and-china-collaborating-clean-energy-and-comb.

70 Lauren Sommer, "Five Big Things Governor Brown Did on Climate Change," *KQED*, January 3, 2019, https://www.kqed.org/science/1936279/five-big-things-governor-brown-did-on-climate-change.

71 "Photo Release: China Day 3: Governor Brown Meets with President Xi of the People's Republic of China, Signs Agreement with National Government to Boost Green Technology," California Governor's Office Archive, June 6, 2017, https://archive.gov.ca.gov/archive/gov39/2017/06/06/news19832/index.html#:~:text=Governor%20Brown%20pointed%20to%20China's,in%202012%2C%202013%20and%202015.

72 Lisa Friedman, "Jerry Brown Announces a Climate Summit Meeting in California," *New York Times*, July 6, 2017, https://www.nytimes.com/2017/07/06/climate/jerry-brown-california-climate-summit.html; "Global Climate Action Summit Outcomes," California Environmental Protection Agency, accessed [date], https://calepa.ca.gov/global-climate-action-summit-outcomes/.

73 Dan Morain, "Citing 'a way to keep doors open,' Jerry Brown enlists China in his war on climate change," CalMatters, September 23, 2019, https://calmatters.org/environment/2019/09/jerry-brown-climate-change/.

74 Matt Sheehan, "Why Gavin Newsom's China Trip Is Both Mundane and Meaningful," Carnegie Endowment for International Peace, October 31, 2023, https://carnegieendowment.org/posts/2023/10/why-gavin-newsoms-china-trip-is-both-mundane-and-meaningful?lang=en; Huizhong Wu, "California Gov. Newsom has surprise meeting with China's leader Xi amid warm welcome in Beijing," Associated Press, October 25, 2023, https://apnews.com/article/china-visit-gavin-newsom-wang-yi-us-7f2bcb44d9279296f853f1042b298877.

75 "Press Release: California Leaders Visit China to Strengthen Climate Partnerships, Advance Global Climate Action," California Environmental Protection Agency, April 2, 2024, https://calepa.ca.gov/2024/04/02/press-release-california-leaders-visit-china-to-strengthen-climate-partnerships-advance-global-climate-action/.

76 Anthony York, "Jerry Brown caps China trip with factory deal," *Los Angeles Times*, April 17, 2013, https://www.latimes.com/politics/la-xpm-2013-apr-17-la-me-pc-jerry-brown-china-20130416-story.html.

77 Edward Lempinem and Jason Pohl, "Trump May Be Planning a Sharp, Extended Conflict with California, Experts Say," *UC Berkeley News*, January 10, 2025, https://news.berkeley.edu/2025/01/10/trump-may-be-planning-a-sharp-extended-conflict-with-california-experts-say/.

78 Stephen Collinson, "Trump seizes on Los Angeles infernos to reopen his feud with Newsom," *CNN*, January 9, 2025, https://edition.cnn.com/2025/01/08/politics/trump-newsom-los-angeles-fires-analysis; "Governor Newsom Statement on President Trump's Executive Actions on Climate," Office of Governor Gavin Newsom, January 20, 2025, https://www.gov.ca.gov/2025/01/20/governor-newsom-statement-on-president-trumps-executive-actions-on-climate/.

79 Amie Parnes, "Newsom seeks to craft new approach with Trump," *The Hill*, January 28, 2025, https://thehill.com/homenews/state-watch/5110965-gavin-newsom-trump-meeting/.

80 Bochen Han and Igor Patrick, "Donald Trump Might Accept Certain 'Significant' Chinese Investment U.S.: Congressman," *South China Morning Post*, February 26, 2025, https://www.scmp.com/news/china/article/3300127/donald-trump-might-accept-certain-significant-chinese-investment-us-congressman.

81 Christian Shepherd and Jinpeng Li, "How China came to dominate the world in renewable energy," *Washington Post*, March 3, 2025, https://www.washingtonpost.com/climate-solutions/2025/03/03/china-renewable-energy-green-world-leader/; Felix Richter, "BYD Pulls Ahead of Tesla to Become Largest EV Maker," Statista, January 3, 2025, https://www.statista.com/chart/33709/tesla-byd-electric-vehicle-production/; Varun Sivaram, Noah Gordon, and Daniel Helmeci, "Winning the Battery Race: How the United States Can Leapfrog China to Dominate Next-Generation Battery Technologies," Carnegie Endowment for International Peace, October 21, 2024, https://carnegieendowment.org/research/2024/10/winning-the-battery-race-how-the-united-states-can-leapfrog-china-to-dominate-next-generation-battery-technologies?lang=en.

82 "BYD Group," *BYD Europe*, https://www.bydeurope.com/byd-group.

83 Mark Magnier, "Mayor R. Rex Parris delights in rattling cages, putting Lancaster, California, on the map in China and beyond," *South China Morning Post*, March 16, 2021, https://www.scmp.com/news/china/article/3125563/mayor-r-rex-parris-delights-rattling-cages-putting-lancaster-california.

84 Julie Drake, "BYD Workers Taking 'Mental Health' Day," *Antelope Valley Press*, June 6, 2024, https://www.avpress.com/news/byd-workers-taking-mental-health-day/article_71a523ee-23b3-11ef-9bdb-432920ee27f1.html.

85 "All Vehicles," *California HVIP*, https://californiahvip.org/vehicles/?oem=90; "Clean Truck and Bus Vouchers (HVIP)," California Air Resources Board, August 12, 2025, https://ww2.arb.ca.gov/resources/fact-sheets/clean-truck-and-bus-vouchers-hvip.

86 "California Energy Commission February 14, 2024 Business Meeting," California Energy Commission, https://www.energy.ca.gov/filebrowser/download/5989?fid=5989.

87 Camila Domonoske, "Trump's pulling a U-turn on EVs, but not much has changed — yet," *NPR*, January 30, 2025, https://www.npr.org/2025/01/30/nx-s1-5272749/donald-trump-ev-electric-vehicles-subsidies-auto-industry.

88 "Global market distribution of battery makers for electric vehicles in 1st semester 2025," Statista, May 2025, https://www.statista.com/statistics/235323/lithium-batteries-top-manufacturers/.

89 Christopher Steitz and Ben Klayman, "Exclusive CATL planning EV battery production in United States, vetting sites," Reuters, May 6, 2022, https://www.reuters.com/technology/exclusive-catl-planning-ev-battery-production-united-states-vetting-sites-2022-05-06/.

90 "CATL and GM May Partner to Open LFP Battery Factory in North America," *Electrify News*, April 1, 2024, https://electrifynews.com/news/batteries/catl-and-gm-may-partner-to-open-lfp-battery-factory-in-north-america/.

91 "Smith, Gallagher Demand Answers on Ford's Chinese Battery Partnership," House Ways and Means Committee, July 21, 2023, https://waysandmeans.house.gov/2023/07/21/smith-gallagher-demand-answers-on-fords-chinese-battery-partnership/.

92 Xiaoying You, "'A bullet train for power': China's ultra-high-voltage electricity grid," *BBC Future*, November 15, 2024, https://www.bbc.com/future/article/20241113-will-chinas-ultra-high-voltage-grid-pay-off-for-renewable-power.

93 Matt Sheehan and Jacob Feldgoise, "What Washington Gets Wrong About China and Technical Standards," Carnegie Endowment for International Peace, February 27, 2023, https://carnegieendowment.org/research/2023/02/what-washington-gets-wrong-about-china-and-technical-standards?lang=en; Paul Mozur and Cade Metz, "A U.S. Secret Weapon in A.I.: Chinese Talent," *New York Times*, June 9, 2020, https://www.nytimes.com/2020/06/09/technology/china-ai-research-education.html.

Carnegie Endowment for International Peace

In a complex, changing, and increasingly contested world, the Carnegie Endowment generates strategic ideas, supports diplomacy, and trains the next generation of international scholar-practitioners to help countries and institutions take on the most difficult global problems and advance peace. With a global network of more than 170 scholars across twenty countries, Carnegie is renowned for its independent analysis of major global problems and understanding of regional contexts.

Asia Program

The Asia Program in Washington studies disruptive security, governance, and technological risks that threaten peace, growth, and opportunity in the Asia-Pacific region, including a focus on China, Japan, and the Korean peninsula.

CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

CarnegieEndowment.org