

Prepared Testimony  
of Michael Wessel  
before the joint  
Oversight and Research and Technology Subcommittees  
House Science, Space and Technology Committee  
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Chairs Abraham and Comstock. Ranking Members Beyer and Lipinski. Members of the Committee. I want to thank you for your invitation to appear before you today to discuss foreign nations' exploitation of U.S. academic institutions for the purpose of accessing and exfiltrating valuable science and technology research and development. It is an honor to appear before you.

My name is Michael Wessel and I am a Commissioner on the U.S.-China Economic and Security Review Commission. The Commission was created by Congress in 2001 in conjunction with the debate about the grant of Permanent Normal Trade Relations (PNTR) to China, paving the way for its accession to the World Trade Organization. The Commission was tasked with monitoring, investigating and submitting to Congress an annual report on the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China, and to provide recommendations, where appropriate, to Congress for legislative and administrative action.

The grant of PNTR ended the annual debate about whether to extend most favored nation status to China. But even as it passed PNTR, Congress created the Commission because it did not want to forego the annual review of our relationship with China. Since the creation of the Commission, our mandate has been extended and altered as the US-China relationship has evolved. I am the only Commissioner who has served from the Commission's creation and have witnessed this evolving relationship during that time.

The Commission is a somewhat unique body: We report to and support Congress. Each of the four Congressional leaders appoint 3 members to the Commission for 2-year terms. In 7 of the last 10 years, we have issued unanimous reports. In the 3 years where it was not unanimous, there was only one dissenting vote. In many ways, the challenges and opportunities posed by the relationship with China have united us in our analysis.

While appearing before you in my capacity as a Commissioner, the views I express are my own, although, of course, my views are informed by the work I and my colleagues do.

Today's hearing is very timely as China's leaders have solidified their power and, in turn, the ability to fulfill their plans to become a global technology leader, if not *the* global technology leader in the not-too-distant future. China has well-developed and aggressive plans in this area. Their plans are public and provide a clear roadmap for them to follow, and for us to assess.

Unfortunately, until only the last two years, public policy leaders either largely ignored China's public pronouncements or simply didn't properly assess their competence and commitment in reaching those goals. That has been a huge mistake and has led to rapid advancements by China in ways that have been fueled by U.S. omissions and commissions.

This hearing is also particularly timely in light of the President's actions to confront Chinese policies in the intellectual property arena. The press is writing about the threatened imposition of tariffs by both the U.S. and China, but has not focused sufficiently on the underlying issues that have plagued U.S. businesses and innovators for years. This hearing, in part, will help to shed light on some of those issues.

China is committed to achieving its goals and will engage in legal means if possible, and illegal means, if necessary to achieve those goals. There are many areas that fall under the jurisdiction of this Subcommittee that bear on China's future success, and ours.

Certainly, not everything is a zero-sum game. Important research and advancements in science, medicine, technology and innovation can improve the lives of people all around the globe. There is a global commons that must foster global participation by scientists and researchers allowing for sharing of basic and applied research. Many of the most troubling problems of yesterday, today and tomorrow will only be solved by collaboration.

That ongoing effort, unfortunately, is being undermined by the activities and operations of the Chinese government and those operating at its direction and on its behalf.

We must act to preserve our own technology and confront China's predatory and protectionist policies and actions if we are to ensure that that global commons can exist. That requires action now.

We must ensure that action to address the policies and practices of the Chinese government and those acting on its behalf or at its direction, does not devolve into approaches that undermine American ideals and interests. We cannot allow the debate and actions on this issue to fuel the targeting of Chinese citizens or people of Chinese descent. I believe that there can be broad, bipartisan support for common sense approaches that recognize that diversity strengthens, not weakens us.

From Albert Einstein to Hans Bethe<sup>1</sup>, and Chien-Shiung Wu<sup>2</sup>, foreign nationals have come to the U.S., long the world's leader in science, to pursue their studies. The positive impact of foreign nationals to the world of science and research continues today. Between 2000 and 2014, of the

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<sup>1</sup> Bethe was a German physicist who emigrated to the U.S. in the 1930s. Bethe would later earn a Nobel Prize in physics for discovering the reactions that generate energy in stars.

<sup>2</sup> Wu was born in China, became a U.S. citizen in 1954, and was the first woman elected to the American Physical Society. Wu would contribute greatly to the Manhattan Project and would later become the first woman to serve as the president of the American Physical Society.

72 U.S. Nobel Prizes awarded in chemistry, medicine and physics, 25 or 35% of them, were awarded to immigrants.

The Administration's recent Section 301 investigation on the activities by China to force our companies to transfer their technology to gain market access, as well as protectionist policies and outright IP theft, documents some of this. The decision to take action to counter these policies is long overdue. In the past, dialogue and pressure has been a substitute for action and, during that time, China has dramatically enhanced its capabilities and is either a near peer, or peer, in many technology domains.

When China joined the World Trade Organization in 2001, many economists overestimated or, indeed, were limited by ideological blinders in thinking China would just continue to compete against the U.S. in low-value products like toys and textiles. Last year, China ran a surplus in Advanced Technology Trade (ATP) with the U.S. of \$135.3 billion. The quantity and composition of our trade with China has changed dramatically since 2001.

Some of China's advances are the result of our naiveté and policy mistakes.

The U.S. has essentially failed to address Chinese industrial policies since its membership in the WTO. Before that, as early as the mid-1990s, the U.S. took only limited acts against Chinese intellectual property rights violations. Over the years, several memorandums of understanding were signed between our two countries meant to throttle back some of China's policies. But, their illegal acts continue and, indeed, increased in effectiveness. The China Commission has tracked these mistakes over the years. Numerous public and private reports have documented these violations as well as these industrial policies and their cost to the U.S. in terms of production, jobs and lost economic benefits.

The U.S. was naïve in thinking that China wanted to be just like us when it acceded to the WTO. We viewed the commitments from a "Western", free market, rule-of-law perspective. China simply had and retains a different view of what its commitments meant or, perhaps, simply had no intention of abiding by the promises they were making.

Our lopsided trade relationship with China has also fueled China's development and advances in the science and technology arena. Since China joined the WTO, we have amassed an accumulated merchandise trade deficit of roughly \$4.3 trillion. That is a transfer of wealth. It has allowed China to make massive investments in its future – many of which are to our nation's disadvantage.

There are policy errors we have made here that have made us vulnerable to many of China's approaches to advancing their aims. Regarding the specific topic of this hearing, the exploitation of U.S. academic institutions; public and private funding pressures have provided an incentive for our colleges and universities to embrace China's well-funded approach. As costs have risen and budgets have not kept pace, the willingness of international students to pay the

full cost of tuition is a powerful incentive for their being admitted to our universities and colleges. Coupled with generous funding for Confucius Institutes, grants and support for individual professors and graduate students, support for individuals through the “1,000 Talents Program”, as well as through other efforts; the temptations are great and China has capitalized on the desire for funding.

Funding limitations have put additional pressures on other research efforts and overall development of S&T in the U.S. According to the National Science Foundation’s 2018 Report on Science and Engineering indicators, the U.S. remains the world’s leader in S&T investment, but that lead is shrinking as China’s footprint grows. According to the report, U.S. R&D expenditures were \$496 billion while China was a close second at \$408 billion, growing at an average rate of 18% annually since 2000, as compared to only 4% annual growth in the U.S.

As I noted earlier, approaching the core issue before the Subcommittee today requires a recognition of the importance of international cooperation and engagement. But, it’s also way past time to directly confront many of the specific programs and policies that China utilizes to advance its own interests with the clear intent of doing so to the cost of U.S. interests.

My co-panelists today will speak to many of the specific actions and activities that threaten U.S. interests. I will focus much of my attention on the policies and programs that provide the framework for the actions.

Confronting China requires that we understand what their plans and programs are. They are quite public in their direction and goals. One only has to look at their 12<sup>th</sup> and 13<sup>th</sup> Five Year Plans, the so-called China 2025 program and other public pronouncements.

China has made clear that they want to advance their own capabilities in a number of key sectors for the future. But, they are not simply satisfied with advances. In many areas, they want to ensure that they have “national” champions who can dominate these sectors; they want to ensure that they have the capabilities to source their own needs from indigenous companies and they want to have companies that are significant players internationally. They are prepared to do whatever it takes to achieve these goals committing massive funds to accomplish them and engaging in legal and illegal activities in their pursuit.

### **What has China Targeted?**

China has targeted a broad range of industries for development and preferential status in their Five-Year Plans and other policy pronouncements. These range from agriculture to metals to autos to high technology and other sectors. As today’s hearing is focused primarily on technology issues, my comments will center around those sectors.<sup>3</sup>

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<sup>3</sup> See *China’s Technonationalism Toolbox: A Primer*, Katherine Koleski & Nargiza Salidjanova, U.S. China Economic and Security Review Commission, March 28, 2018. <https://www.uscc.gov/Research/china%E2%80%99s-technonationalism-toolbox-primer>

China's Made in China 2025 Initiative identified 10 key sectors the government would further support with the goal of fostering Chinese leadership in areas of technology with significant economic and national security implications. They include:

1. New Energy Vehicles
2. Next-Generation Information Technology
3. Biotechnology
4. New Materials
5. Aerospace
6. Ocean Engineering, High-Tech Ships
7. Railway
8. Robotics
9. Power Equipment
10. Agricultural Machinery

Each of these sectors in China have benefited from a whole-of-government approach to ensuring that Chinese companies stake out dominant positions in the global market. And, they are promoting the idea of “national champions”: Companies that have significant market share and presence in China to dominate the market.

These national champion companies, many of which are state-owned enterprises, are benefiting from strong state funding (including provincial and local level support), foreign talent and technology acquisition, an insulated domestic market and even industrial espionage.<sup>4</sup> China is effectively leveraging international openness, particularly that of the U.S. market, academic community and research institutes, to augment domestic capacity and capabilities with the ultimate goal of self-sufficiency in advanced technologies.

In the case of robotics and AI, two fields of study with the potential to fundamentally change the international economy as well as the future of war-fighting, China has released the Robotics Industry Development Plan and Next Generation Artificial Intelligence Development Plan with the goals of China assuming global leadership in the coming decades. For example, in industrial robotics, foreign companies have been providing the clear majority of installed robotics demanded in the Chinese market. China acquired Kuka AG, a leading German robotics maker, in 2016 to advance its efforts. China's state support is seeking to push competitors out of the market with the stated goal of having China's robotics companies meet 70% of that demand, up from roughly 30% last year, by 2025.

Since the release of these plans, tens of billions of dollars in subsidies and cheap capital have been provided to Chinese companies who have turned around and used that support to sustain

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<sup>4</sup> 2017 Annual Report to Congress, U.S.-China Economic and Security Review Commission.

domestic development and fuel overseas acquisitions of advanced competitors, recruitment of foreign experts, and funding for related research and development.

For example, China technology giant Baidu, labeled a national champion by China's Ministry of Science and Technology, has been provided a national AI engineering lab funded by China's National Development and Reform Commission, has set up research institutes in Silicon Valley, and recruited top U.S. AI academic researchers.<sup>5</sup> The impact? In the most recent annual report to Congress, our Commission found that China, led by Baidu, has reached near-parity with the U.S. in AI as a result of "robust state-support."

Money is also a powerful incentive to help China expand its capabilities which, they have made clear, are to dominate future industries. Just last week, Wired ran a story on how an ex-Google executive has opened a school in China, with the government's support. The article identified not only the former Google executive's involvement, but support of a number of American experts. The article indicated that the effort "aligns with a key strand of China's Next Generation Artificial Intelligence Development Plan announced last July.

"The plan envisions China's economy, military, and society invigorated and empowered by artificial intelligence. The government is seeking to build on a recent surge in AI investments from China's internet companies and others, which has created several startups worth over \$1 billion in areas including facial recognition and new types of computer chips. Government support for AI in China includes new funding, government contracts, and access to some state data troves. Growing China's AI talent base has also become a major theme, with the government supporting new programs from colleges and companies."<sup>6</sup>

### **How Are U.S. Academic Institutions and Personnel Part of China's Plans?**

China has a number of programs designed to gain access to, information from, and harvest the gains of, various engagements with U.S. academic institutions as well as students, professors and researchers. Many of the programs are both public in nature as well as coordinated through state-led and directed efforts at espionage and intelligence collection.

Perhaps the most well-known program advanced by China in higher education is the propagation and funding of Confucius Institutes. There are roughly 100 of these Institutes operating in the U.S. (see attached list). These Chinese-funded educational institutes housed at colleges and universities around the globe, are designed to teach Chinese language, culture and history. Similar to efforts led by Japanese institutions in the 1980s, when tensions between the U.S. and Japan were high, the Institutes are a tool of "soft power" and long-term influence.

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<sup>5</sup> In January of this year, Baidu announced it was hiring three world-renowned AI scientists who had previously worked at premier U.S. academic institutions: <http://research.baidu.com/baidu-research-announces-hiring-three-world-renowned-ai-scientists/>

<sup>6</sup> *Ex-Google Executive Opens a School for AI, With China's Help*, by Tim Simonite, Wired, April 5, 2018, <https://www.wired.com/story/ex-google-executive-opens-a-school-for-ai-with-chinas-help/>

“But the Confucius Institutes’ goals are little less wholesome and edifying than they sound – and this by the Chinese government’s own account. A 2011 speech by a standing member of the Politburo in Beijing laid out the case: ‘The Confucius Institute is an appeal brand for expanding our culture abroad,’ Li Changchun said. ‘It has made an important contribution toward improving our soft power. The ‘Confucius’ brand has a natural attractiveness. Using the excuse of teaching Chinese language, everything looks reasonable and logical.’”<sup>7</sup>

At a time of funding pressures on higher education, the attraction of Chinese money can be substantial. But, China is not engaged in a charitable endeavor: It is seeking to influence the current and future generations of America’s leaders, their views and their research. China has substantial influence, if not direct control, over the hiring of personnel, the curriculum and the materials that are utilized at the Institutes. As Peter Mattis with the Jamestown Foundation recently noted, “By facilitating U.S. universities investment in facilities, research collaboration, or programs, the CCP (Chinese Communist Party), creates a vulnerable relationship that can be used to apply pressure to the university unless the latter is prepared to walk away.”<sup>8</sup>

Last week, Texas A&M terminated its Confucius Institute after Congressmen McCaul and Cuellar raised questions about Texas university partnerships with the Chinese-government run entities. "These organizations are a threat to our nation's security by serving as a platform for China's intelligence collection and political agenda," McCaul and Cuellar said in a news release. "We have a responsibility to uphold our American values of free expression, and to do whatever is necessary to counter any behavior that poses a threat to our democracy."<sup>9</sup>

As Richard P. Suttmeier identified in a report prepared for the China Commission in 2014, “China’s overall engagement with U.S. S&T has undoubtedly played a major role in the development of Chinese wealth and power. This is especially true with regard to the exploitation of higher education opportunities at U.S. universities and the transfer of U.S. technologies as part of U.S. companies’ business decisions.”<sup>10</sup>

In 2015 testimony before the China Commission, David Major indicated that “PRC intelligence will target and exploit PRC college students overseas and foreign students studying in China, trade and cultural delegations, and attempt to first identify any ethnic Chinese (Han) that may be in a position to ‘help’ China....The Chinese approach or pitch in the majority of cases is ‘can you

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<sup>7</sup> *Ivory Towers. How China Infiltrated U.S. Classrooms*, by Ethan Epstein, Politico, January 16, 2018.

<sup>8</sup> *U.S. Responses to China’s Foreign Influence Operations*, Testimony of Peter Mattis before the House Committee on Foreign Affairs, Subcommittee on Asia and the Pacific, March 21, 2018.

<sup>9</sup> *Texas A&M System cuts ties with China’s Confucius Institute after congressmen’s concern over spying*, by Jackie Wang, Dallas Morning News, April 5, 2018. <https://www.dallasnews.com/news/higher-education/2018/04/05/congressmen-urge-ut-dallas-texas-universities-cut-ties-chinas-confucius-institute>

<sup>10</sup> *Trends in U.S.-China Science and Technology Cooperation: Collaborative Knowledge Production for the Twenty First Century*, by Richard P. Suttmeier, September 11, 2014. Prepared for the U.S.-China Economic and Security Review Commission.

help China?’ just a little. Unlike other serves that are looking for ‘bad people’ to do ‘bad things,’ China is looking for ‘good people’ to do ‘bad things’.”<sup>11</sup>

A number of specific cases have become public over the years regarding efforts to target U.S. academic institutions for intelligence collection. A couple of specific cases are:

- 2008 – John Reese Roth, University of Tennessee. Electrical engineering professor Roth was convicted of exporting “defense articles” without a license, and of wire fraud and conspiracy. Roth used Chinese students in research on a plasma-based flight-control device for drone aircraft under a U.S. Air Force contract. Two of those students illegally, gained access to sensitive information and exported it to China.<sup>12</sup>
- 2009 -- Ruopeng Liu, Duke University. Dr. Liu reportedly passed data from his time at Duke’s metamaterials lab to help create a “mirror” institute in China. This allegedly led to the 2010 creation of Kuang-Chi Science Limited, now a multi-billion metamaterials company in the wireless internet and mobile payment field.
- 2015 -- Chinese Professors among 6 defendants charged with economic espionage by the Department of Justice. The 32-count indictment, which had previously been sealed, charges a total of six individuals with economic espionage and theft of trade secrets for their roles in a long-running effort to obtain trade secrets for the benefit of universities and companies controlled by the PRC government.<sup>13</sup>

In 2006, China launched “Project 111” with the goal of recruiting 1,000 foreign experts in strategic sectors from the world’s top universities. Two years later, the “Thousand Talents Program” was introduced with a similar, but expanded goal of foreign expert recruitment. According to the FBI, the Thousand Talents program began with the goal of recruiting 2,000 foreign professionals over a five- to ten-year period and focused primarily on ethnic Chinese experts at western universities and research institutes.<sup>14</sup> That goal has since been expanded and extended and to-date, has brought more than 4,000 foreign experts (including non-ethnic Chinese scholars) to China.<sup>15</sup>

The package of benefits for those participating in the program are extensive. The qualifications sought are those “under 55 years of age who are willing to work in China on a full-time basis, with full professorships or the equivalent in prestigious foreign universities and R&D institutes,

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<sup>11</sup> Mr. David Major, *Testimony before the U.S.-China Economic and Security Review Commission: Hearing on PRC Intelligence and Espionage Operations*, June 9, 2016.

<sup>12</sup> *Former University of Tennessee Professor John Reece Roth Begins Serving Four-Year Prison Sentence on Convictions of Illegally Exporting Military Research Data*, U.S. Attorney’s Office, Eastern District of Tennessee, February 1, 2012

<sup>13</sup> *Chinese Professors Among Six Defendants Charged with Economic Espionage and Theft of Trade Secrets for Benefit of People’s Republic of China*, U.S. Department of Justice, Office of Public Affairs, May 19, 2015.

<sup>14</sup> *Chinese Talent Programs*, Federal Bureau of Investigation, Counterintelligence Strategic Partnership Intelligence Note (SPIN), September 2015 (UNCLASSIFIED)

<sup>15</sup> *China’s Technonationalism Toolbox: A Primer*, Koleski, Katherine and Salidjanova, Nargiza, U.S.-China Economic and Security Review Commission, March 28, 2018.

or with senior titles from well-known international companies or financial institutes.<sup>16</sup> Each participant will receive a one-time start-up payment of roughly \$158,000 in addition to salary based on previous levels and other significant benefits.<sup>17</sup>

The FBI's Counterintelligence Strategic Partnership has warned that these programs pose a threat to our nation's academic community:

*Chinese Talent Programs pose a serious threat to U.S. businesses and universities through economic espionage and theft of intellectual property. The different programs focus on specific fields deemed critical to China, to boost China's national capability in S&T fields. These subject matter experts often are not required to sign non-disclosure agreements with U.S. entities, which could result in loss of unprotected information...One of the greatest threats toward these experts is transferring or transporting proprietary, classified, or export-controlled information, or intellectual property, which can lead to criminal charges.*<sup>18</sup>

As the FBI's 2011 report, Higher Education and National Security: The Targeting of Sensitive, Proprietary and Classified Information on Campuses of Higher Education indicated, "(m)ost foreign students, researchers, or professors studying or working in the United States are here for legitimate and proper reasons. Only a very small percentage is actively working at the behest of another government or organization. However, some foreign governments also pressure legitimate students to report information to intelligence officials, often using the promise of favors or threats to family members back home." The report was issued to help inform "public and private entities about counterintelligence risks and national security issues."

The size of the foreign student population in the U.S. is significant. In the 2016-17 academic year, there were 1,078,822 international students studying in the U.S. China was the largest place of origin for these students, accounting for 32.5% of the total (roughly 350,000). The top fields of study for foreign students were engineering, business and management, and math and computer science. Chinese students were most likely to pursue these areas of study accounting for 57% of all Chinese students in the U.S.<sup>19</sup>

Chinese students have a significant presence on many campuses and in many labs where critical research is being done. Many of these labs received significant federal funding from the Department of Defense or the National Science Foundation.

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<sup>16</sup> *Recruitman, Program of Global Experts*, <http://www.1000plan.org/en/>

<sup>17</sup> *Ibid*

<sup>18</sup> *Chinese Talent Programs*, FBI, SPIN, 2015

<sup>19</sup> *2017 Open Doors Report on International Educational Exchange*, Institute of International Education and U.S. Department of State Bureau of Educational and Cultural Affairs, November 13, 2017.

- The Berkeley Artificial Intelligence Research (BAIR) Lab at the University of California at Berkeley is a leading AI facility working on advanced computer vision, machine learning, natural language processing and robotics. Roughly 20 percent of the PhD students at BAIR are PRC nationals.
- The University of Maryland’s Bing Nano Research Group works on materials science, focusing on energy storage, nano-manufacturing and biomaterials. Thirty of the 38 post-doctoral researchers and graduate students are from China. Every one of the visiting researchers and professors utilizing “J” visas are from China<sup>20</sup>. The lab receives support from 15 different federal agencies including NASA, DARPA, The Air Force Office of Scientific Research and the Department of Energy.

It is also important to recognize that education is counted as an export in our nation’s trade balance. With continued focus on our nation’s trade deficit, the contribution of \$39.4 billion in education expenditures by foreign students is significant. The goal must be to address the real risks we face without undermining or stifling the contribution of international students to our understanding of the world and their contributions to campus diversity and, in monetary terms, the contribution to our schools and our country.

The National Security Higher Education Advisory Board was created in September 2005 and is comprised of government and university officials. It is one venue for addressing some of these issues but has a broad mandate, that includes terrorism, homeland security and counterintelligence. As such, it is not as focused on the long-term economic and security threats posed by many of China’s activities many of which, on their own may appear innocuous but together, create enormous vulnerabilities for our long-term success in many of these critical technologies. The Committee may want to meet with members of the Board to assess their activities and determine whether enhanced activities are appropriate.

There are numerous bilateral scientific cooperation programs between our two countries.<sup>21</sup> In work at the China Commission over the years, we have questioned witnesses on the value of some of these programs. While, again, expanding global knowledge to address key problems facing nations around the globe is a proper goal, much of the testimony we have heard indicates that Chinese participants get much more value from these exchanges than do U.S. participants. Of course, some of that is understandable in light of the advanced nature of U.S. work in many sectors. But, as China’s capabilities expand, the lopsided nature of these exchanges raises

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<sup>20</sup> “The Exchange Visitor (J) non-immigrant visa category is for individuals approved to participate in work-and study-based exchange visitor programs. Participants are integral to the success of the program.” Department of State, J-1 Visa Exchange Visitor Program, <https://j1visa.state.gov/basics/>

<sup>21</sup> *China’s Program for Science and Technology Modernization: Implications for American Competitiveness*, Report prepared for the U.S.-China Economic and Security Review Commission by CENTRA Technology, Inc., January 2011. [https://www.uscc.gov/sites/default/files/Research/USCC\\_REPORT\\_China%27s\\_Program\\_forScience\\_and\\_Technology\\_Modernization.pdf](https://www.uscc.gov/sites/default/files/Research/USCC_REPORT_China%27s_Program_forScience_and_Technology_Modernization.pdf)

serious questions as to their utility. China is harvesting many of the gains and often utilizes any research to its advantage at the expense of U.S. interests.

### **Conclusion and Recommendations:**

Today's hearing is focused on the exploitation of U.S. academic institutions. These institutions are a critical component of our overall basic and applied research infrastructure and key to our nation's economic and national security. While we should continue to work to contribute to the world's efforts to address the most vexing problems facing the world, we must take greater steps to protect the fruits of our work. Efforts to infiltrate our universities and labs and exfiltrate their work must be a greater priority.

Sunlight is a great disinfectant and today's hearing is an important step in that process. Raising awareness of the potential risks associated with academic activities vis-à-vis U.S. interests is key. Coupled with that, there are some basic steps that can be taken:

- Schools engaged in research in critical technologies must implement appropriate cyber security measures to protect intellectual property and information. Laboratories receiving federal funding for research in these areas would have to periodically certify that they are adhering to appropriate standards.
- There must be greater monitoring and oversight of visa holders to ensure that the original terms of their being granted are adhered to. Universities and colleges should partner with appropriate government authorities to provide updated information on visa holders and the programs they participate in. The Administration should maintain a comprehensive and updated database regarding the field of studies of visa holders
- Participants in China's 1,000 Talent Program should be prohibited from receiving future federal support in terms of grants, loans or other assistance.
- Universities receiving federal support should report on any cooperative research programs or exchanges in the science and technology arena with Chinese-funded entities. Personnel participating in such programs should be required to review prepared materials from the law enforcement community on intelligence gathering efforts and methods of foreign countries and should be required to file periodic reports.
- Confucius Institute personnel should be required to file as foreign agents under the Foreign Agents Registration Act.
- Materials utilized at Confucius Institutes should include a disclaimer that it was prepared with the support, oversight and control of an entity associated with the Chinese Government.

Again, thank you for the invitation to appear before you today and I look forward to working with the Committee as it assesses this important issue.