AMERICAN ACCOUNTABILITY FOUNDATION

CHINESE SCIENTIST INFILTRATION THREAT ASSESSMENTS

AMERICAN ACCOUNTABILITY FOUNDATION

RESEARCH MEMORANDUM

To: Interested Parties

From: Thomas Jones, President American Accountability Foundation

Date: January 19, 2025

Re: **Initial Research Findings, Chinese Infiltration of United States Research Enterprise**

Detailed below are the initial results from research into infiltration of the United States research enterprise by scientists and engineers from the People's Republic of China. The results are sobering; there are numerous examples of active members of the Chinese Communist Party being appointed to sensitive positions at U.S. universities and Chinese researchers being placed in positions that will allow them to transfer technology and research to the People's Liberation Army and cultivate relationships with critical defense researchers in the U.S.

The American Accountability Foundation recently began a research project analyzing the men and women who the United States Government has allowed into the country on research scholar visas from the People's Republic of China. This report presents initial findings from the first tranche of individuals AAF has reviewed.

AAF's goal in this research is to take America's discussion of the threat posed by China academics from somewhat academic macro level discussions – of which there are plenty – and crystalize it into specific actionable examples of men and women who have infiltrated sensitive parts of the military research infrastructure in the United States and spur policy makers to address the problem. Unfortunately for our country, our findings show that there are specific and serious national security threats posed by the universities' persistent recruitment of research associates and postdoctoral fellows under the J-1 Visa Program.

This initial report details specific men and women whose background and research area make them a likely asset to the Chinese Communist Party.

Methodology

For this initial round of research, we began reviewing researchers at universities with military labs on campus, the top ten federal research funding recipients, the Ivys, and the National Labs. After that narrowing, we did an initial review of the raw data of the approximately ten thousand individuals to review the research areas of individuals to de-prioritize in the database those which were in less critical research areas (journalism, arts, etc.). After that filtering, we prioritized for this initial round the most pressing research areas (hard sciences with obvious national security / homeland security applications) and triaged those individuals for review to see if there was sufficient publicly available information to warrant a deeper investigation and report writing. We also simultaneously researched in China

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individuals whose background (age, clear strong ties to China, etc.) made them prime candidates for research independent of their university background. Finally, we also prioritized for research in China individuals who we identified as problematic because of their activities in the United States.

Initial Findings

The reports attached present twenty-one individuals who because of the dual-use threat of their research, close ties to the military research sector in China, and/or clear ties to the Chinese Communist Party should be expelled from the United States or never be re-admitted.

- ◊ Qianying Cao, a postdoctoral research assistant at a Brown University mathematics lab funded by multiple military services, led the CCP chapter on her campus in China.
- ◊ Bijuan Chen, a leading condensed matter physicist (optics, sensors, quantum computing) researcher at Purdue, who comes to the United States from HPSTAR, a research lab blacklisted by the Department of Commerce – Bureau of Industry and Security for activities "contrary to the national security or foreign policy interests of the United States."
- ◊ Jingao Xu, an expert in drone research technology at Carnegie Mellon, where DoW runs a software research lab, who led the CCP chapter on his campus.
- ◊ Yingkai Dong who is a leading expert on exoskeletons that could enhance infantry operations, was also an active supporter of the CCP in China.
- ◊ Zongliang Xie is working a Lawrence Berkeley National Lab on advanced materials research with military applications and funding.
- ◊ Cen Zhang a Georgia Tech (a university with a history of CCP issues) AI and Machine Language expert who recently was part of the team that won a DARPA Artificial Intelligence Cyber Challenge.
- ◊ Jinghan Gao at the University of Florida who has worked on DoW underwritten research on semiconductors that has applications for radar and hypersonic technologies.
- ◊ Xuewen Dong at Stevens Institute of Technology, where DoW runs a lab, who is doing leading research on edge computing with application for drones and unmanned vehicles, who comes to the U.S. from a university affiliated with the defense infrastructure in China.
- ◊ Peihao Geng at Penn State, which hosts a defense lab, who has partnered with Los Alamos Laboratory on AI and LLM enhancement of advanced laser welding. Geng also comes from a flagged university in China.
- ◊ Chunyin Zhu who is a senior member of a CCP affiliated party in China (and who we have imagery of posing next to a hammer and sickle) is currently working on advanced chemistry research at Indiana University.
- ◊ Xiaobin Zhao at USC who is working on quantum sensing and metrology, capabilities with significant military impact, worked at a PLA controlled defense conglomerate before coming to the U.S.
- ◊ Guangyao Chen a postdoctoral researcher at Cornell focusing on Artificial Intelligence, a research priority for both the U.S. military and the PLA.
- ◊ Xiaoyi Chen another Indiana University research, this time an expert in AI machine learning, who comes to the U.S. from PLA tied universities, and whose mentor at IU was raided by the FBI.

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- ◊ Xiangwei Guo a materials engineering postdoc at UW Madison who is part of a team leading advanced semiconductor research.
- ◊ Boa Xianyang at Harvard who is working on DoW funded polymers research that could enhance the PLA's capabilities in a broad variety of military materiel from vehicles to protective equipment to weapons.
- ◊ Ziang Yu at UW-Madison who is a postdoc working on nuclear materials research funded by the National Nuclear Security Administration.
- ◊ Ge Chen a Purdue electrical engineering postdoc working on electrical grid technologies whose mentor is a leading CCP official in China and has ties to their defense industry.
- ◊ Zebin Li at UW-Madison who is working on next-gen semiconductors and was a participant in China's notorious Thousand Talents program focused on recruiting overseas scientific talent for the CCP.
- ◊ Yujie Zhu at UW-Madison who is a leading expert in the development of next generation of semiconductors and came to the U.S. from a Chinese university with close ties to the CCP.
- ◊ Yu Zhao who was at Cornell and is an expert in critical biological technologies, including CRISPR, which could be weaponized.
- ◊ Xiaoyi Fan at Harvard who is one of the world's leading experts on Western Equine Encephalitis Virus, which NIH, CDC, and DHS classify as a priority pathogen representing a grave threat to human health.

Next Steps

As this research shows, America has a serious problem with the Chinese Communist Party exploiting the U.S. university system, and there is little attention being paid to the specific individuals at U.S. universities who represent a national security threat.

As we conducted the research, it became clear that Chinese nationals, with the acquiescence of university leadership, have taken over significant portions of the research infrastructure of university research departments. Many of the individuals highlighted above were hired by Chinese nationals who are in the country likely on an H-1B visa. Further, many labs are led and dominated by Chinese nationals. While we focused on the J-1 holders, focus on the H-1B holders similar to the J-1 holders would be a significant next step in addressing infiltration concerns, particularly since there is a significant appetite for addressing H-1B abuse.

There is more work to be done to address the threats to the United States, but this initial research report is a clear first step in demonstrating that there is progress to be made unmasking the research threat in our universities.

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ENGLISH NAME: Qianying Cao
CHINESE NAME: 曹倩影
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: BROWN UNIVERSITY

AGE: 34	**AREA OF EXPERTISE:** APPLIED MATHEMATICS
CHINESE UNIVERSITY: DALIAN UNIVERSITY OF TECHNOLOGY & OCEAN UNIVERSITY OF CHINA	**PHD:** ENGINEERING
U.S. UNIVERSITY LAB: THE CRUNCH GROUP [1]	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCH ASSOCIATE

EXECUTIVE SUMMARY: Dr. Cao is an active member of the Chinese Communist Party and was part of its leadership at Ocean University. She now is an integral part of the applied mathematics team at Brown University working a research lab that receives support for all branches of the United States military. The threat is clear and obvious.
DATE REVIEW COMPLETE: 12-19-2025

CCP ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

铭记党史，爱我中华

作者：林声龙 许玮澄 来源：工程学院 发布时间：2014-04-18 分享： 字体： 小 中 大

铭记党史 爱我中华

本站讯 4月17日下午,为重温党的光辉路程，传承党的光荣传统，由工程学院团委主办，工程学院研究会承办的"铭记党史，爱我中华"党史知识竞赛在崂山校区教学区四区举行。本次到场的嘉宾有：机电工程系本科生党支部书记卢菁松，海洋工程系本科生党支部书记曹倩影，土木工程系本科生党支部书记王琪，自动化及测控系研究生党支部书记杜晓斌。

"On the afternoon of April 17th, to review the glorious history of the Party and carry forward its glorious traditions, the "Remembering Party History, Loving My China" Party History Knowledge Competition, hosted by the Youth League Committee of the School of Engineering and organized by the Research Association of the School of Engineering, was held in Teaching Area 4 of the Laoshan Campus. Guests present included: Lu Jingsong, Secretary of the Undergraduate Party Branch of the Department of Mechanical and Electrical Engineering; Cao Qianying, Secretary of the Undergraduate Party Branch of the Department of Ocean Engineering; Wang Qi, Secretary of the Undergraduate Party Branch of the Department of Civil Engineering; and Du Xiaobin, Secretary of the Graduate Party Branch of the Department of Automation and Measurement & Control."[2]

Additionally, announcements by the university at her alma mater where she received her PhD. note Dr. Cao's leadership in the Chinese Communist Party.[3]

根据《中国海洋大学学生奖励条例（试行）》（海大学字[2007]54号）的有关规定，经院（系）推荐、学生工作处初审、班级测评、公开答辩，工程学院港口航道与海岸工程2010级曹倩影同学获得中国海洋大学2012-2013学年优秀学生标兵。 曹倩影，女，中共党员，工程学院港口航道与海岸工程2010级学生，曾担任校团委实习干事、学生会副部长，现任海洋工程系本科生党支部书记。 思想上，曹倩影同学作为一名中共党员，时刻注重发挥党员先锋模范作用，处处以党员的标准严格要求自己，积极进取，不断提高自身的道德素质和科学文化素质，连续三年其思想政治素质、科学文化素质、身心素质等级皆为"优秀"，三年学习成绩班级排名第一；课余时间，作为负责人带领团队成功申请并完成了中国海洋大学SRDP项目，取得优异成绩。积极投身志愿服务事业，积极组织并参与了"走进老年公寓"、"义卖报纸"、"清明节扫墓"等志愿服务活动。工作踏实肯干，尽职尽责，作为校企联络专员，积极协助招聘单位做好招聘工作，展示海大学子良好形象；性格开朗，乐于助人，积极搭建	Cao Qianying, female, member of the Communist Party of China, is a 2010 student of Port, Waterway and Coastal Engineering in the School of Engineering. She has served as an intern in the school's Youth League Committee and vice minister of the Student Union. She is currently the secretary of the undergraduate Party branch of the Department of Ocean Engineering. In terms of ideology, Cao Qianying, as a member of the Communist Party of China, always emphasizes playing an exemplary role, strictly demanding of herself according to the standards of a Party member, actively striving to improve her moral and scientific literacy. For three consecutive years, her ideological and political qualities, scientific and cultural qualities, and physical and mental qualities have all been rated as "excellent," and she has ranked first in her class academically for three years.

各种平台，促进同学间的交流和信息资源共享，强化班级凝聚力和优良班风学风建设，时刻以身作则，鼓励成绩优秀的同学关心帮助学习成绩有困难的同学，带领同学共同进步，得到了师生的广泛好评。 曹倩影同学曾获得2011-2012学年度和2012-2013学年度"优秀学生"、第206期党课"优秀学员"称号，曾两次获得社会实践奖学金、国家奖学金、学习优秀一等奖学金、青岛银行优秀大学生奖学金。	

WHY THE RESEARCH IS CONCERNING:

Dr. Cao is a research associate in the CRUNCH Group, a research group led by Professor George Em Karniadakis in the Division of Applied Mathematics at Brown University. The importance of mathematics to the United States military cannot be understated. As DARPA notes:[4]

> Mathematics is a pillar of national security.
>
> A decision-maker's ability to synchronize military activities across five domains (i.e., air, land, maritime, space, and cyberspace), and adapt to rapidly changing threat landscapes hinges on robust mathematical frameworks and effective problem formulations that fully encapsulate the complexities of real-world operational environments.

The United States military understands that and as the CRUNCH Group's website notes, "CRUNCH is supported generously by **AFOSR, DOE, ARL, ONR** and several industrial partners, including Ansys, Dassault/Simulia, Takeda, Hypercomp, PredictiveIQ." Cao is an integral part of that research enterprise recently commenting on her collaboration with the leadership of the lab, many of whom are supported by the military.[5]

> Excited to share our recent work on the Characterization and Inverse Design of Stochastic Mechanical Metamaterials Using Neural Operators (https://lnkd.in/epRyrQ5e)---full of promise across a wide range of engineering applications!
>
> We developed a data-driven machine learning framework (DeepONet) that enables efficient metamaterial design even with sparse experimental data. This approach opens new doors for intelligent material design.
>
> It has been a true privilge to work under the guidance of Prof. Horacio Espinosa, Prof.George Karniadakis, and Prof. Sridhar Krishnaswamy, whose mentorship and vision were invaluable. Deep gratitude to my incredible collobrators Hanxun Jin, Boyu Zhang, Enrui Zhang and Aniruddha—this wouldn't have been possible without your dedication and insight.

As detailed below Cao is part of a team receiving significant federal military research office support.

NOTABLE FEDERAL DEFENSE SUPPORT

As noted above the lab's integration with the military is strong. In fact as the lab notes, Dr. Karniadakis runs a research group on Fractional Partial Differential Equations for the ARO MURI project.

- **ARO, ONR, & AFSOR:** Cao recently published "Characterization and Inverse Design of Stochastic Mechanical Metamaterials Using Neural Operators"[6] under the leadership of her lab director George Em Karniadakis. As the funding acknowledgement in the paper notes, "H.D.E. acknowledged the financial support from the Air Force Office of Scientific Research (AFOSR-FA9550-20-1-0258), National Science Foundation (grant CMMI-1953806), Office of Naval Research (grant N00014-22-1-2133). G.E.K. would like to acknowledge support by the MURI-AFOSR FA9550-20-1-0358 project, and the ONR Vannevar Bush Faculty Fellowship (N00014-22-1-2795). S.K. acknowledged the support of the Office of Naval Research through grants N00014-15-1-2935 (for acquisition of the two-photon 3D Direct Laser Writer) and N00014-23-1-2529. H.J. acknowledged the two-photon printing training from Dr. Abhishek Amrithanath. The data

preparation assistance from Dr. Hongshun Chen is acknowledged." [7]

RISK ASSESSMENT

High

Dr. Cao is a huge national security risk. As research shows she is an active member of the Chinese Communist Party at her alma mater, taking a leadership role in the organization. The Crunch Group lab she is a part of has is at the cutting edge of mathematics research for numerous military service research labs giving her a clear pathway to transfer research to the PLA and to develop relationships with individuals in the military research community.

DATE REVIEW COMPLETE: 12-19-2025

SOURCES

[1] "The Crunch Group – The Collaborative Research Work of George Em Karniadakis," *Brown University*, accessed December 19, 2025, https://sites.brown.edu/crunch-group/

[2] "铭记党史，爱我中华," *news.ouc.edu.cn*, accessed December 19, 2025, https://news.ouc.edu.cn/2014/0418/c79a66535/page.htm

[3] "港口航道与海岸工程10级本科生曹倩影同学获12-13学年校优秀学生标兵," accessed December 19, 2025, https://coe.ouc.edu.cn/2013/1012/c8978a62871/page.psp

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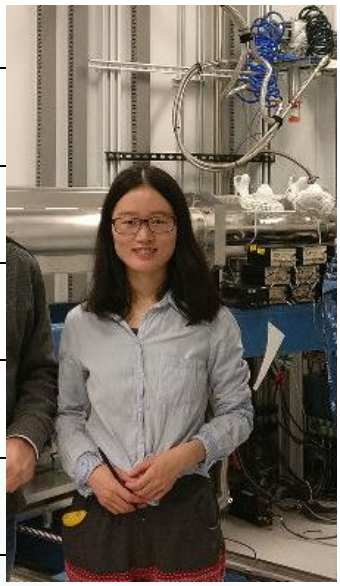

ENGLISH NAME: BIJUAN CHEN
CHINESE NAME: 陈碧娟
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: PURDUE UNIVERSITY

AGE: 36	**AREA OF EXPERTISE:** HIGH-PRESSURE CONDENSED MATTER PHYSICS
CHINESE UNIVERSITY: CHINESE ACADEMY OF SCIENCES	**PHD:** CONDENSED MATTER PHYSICS
U.S. UNIVERSITY LAB: TONGCANG LI RESEARCH GROUP	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCH FELLOW

EXECUTIVE SUMMARY: Dr. Chen is a leading researcher in condensed matter physics an area of research the Army has characterized as critical to fundamental developments in optics, sensors, and quantum computing, all vital national security concerns. Chen though, is closely affiliated with the Chinese research Institute, HPSTAR, which the U.S. Department of Commerce has banned Americans from doing business with because it acts in ways "contrary to the national security or foreign policy interests of the United States." Despite these obvious issues, Chen still has access to defense research, working in a DOD supported lab at Purdue as well as in her prior position at Harvard.

DATE REVIEW COMPLETE: 12-17-2025

WHY THE RESEARCH IS CONCERNING:

Dr. Bijuan Chen was awarded her PhD degree in condensed matter physics from Institute of Physics, Chinese Academy of Sciences, China, in June 2016 under the supervision of Prof. Changqing Jin, and obtained her bachelor's degree in 2011 at Sichuan University. From 2012 to 2015, she was awarded three times the Institute Chief Scholarship of IOP, CAS and two times the Excellent Student Cadre award of UCAS. From 2016 through 2022 she was a researcher at Center for High Pressure Science and Technology Advanced Research (HPSTAR).[1] Her research at HPSTAR predominantly focused on mixed-valence behavior, exotic magnetism, quantum phase transitions, and superconductivity in *f*-electron materials under extreme pressure, investigated using X-ray spectroscopy and neutron scattering—key areas of condensed matter physics.

Condensed matter physics has long been and remains a research focus and priority of the United States military. The Army in its annual budget justification for physics research noted,[2]

> This effort fosters research in many subfields of physics, including **condensed matter physics**, optical physics, atomic and molecular physics, and quantum information, with an emphasis on discovering new realms of quantum and optical phenomena. **Pursuit of fundamental physics in these subfields provides new opportunities for future developments in superior optics, ultra-sensitive sensors, and novel electronic architectures for classical and quantum computing.**

In 2019, Chen was the first author of an article on volume collapse in cerium, one of the most commonly found rare-earth metals. The study, conducted by Beijing High Pressure Technology Research Center [北京高压科学研究中心], where the lead was Ding Yang [丁阳]. Ding Yang is a recipient of the "Thousand Talents" stipend, which is a CCP-led program to recruit experts in science and technology from abroad, focusing on overseas Chinese nationals.

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA – WORK FOR PROHIBITED ENTITY

Importantly before Dr. Chen came to work in the United States as a researcher, she was a researcher at the Center for High Pressure Science and Technology Advanced Research, also known as HPSTAR.[3] The US Dept of Commerce classifies HPSTAR as "**License Policy: Presumption of denial**" "For all items subject to the EAR." [4]

EAR §744.11, which covers entities the U.S. believes are involved in activities "**contrary to the national security or foreign policy interests of the United States**." Further notes from the Federal Register: [5]

> "The ERC determined to add Beijing Computational Science Research Center, Beijing Jincheng Huanyu Electronics Co., Ltd., **Center for High Pressure Science and Technology Advanced Research**, Chengdu Fine Optical Engineering Research Center, China Jiuyuan Trading Corporation, Peac Institute of Multiscale Science, Sichuan Dingcheng Material Trade Co., Ltd., Sichuan Haitian New Technology Group Co. Ltd., Sichuan Zhonghe Import and Export Trade Co., Ltd., and Skyeye Laser Technology Limited to the Entity List under the destination of China on the basis of their procurement of U.S.-origin items for activities contrary to the national security or foreign policy interests of the United States. **These ten entities are owned by, operated by, or directly affiliated with the Chinese Academy of Engineering Physics (CAEP), which is the technology complex responsible for the research, development and testing of China's nuclear weapons** and has been on the Entity List under the destination of China since June 30, 1997 (62 FR 35334). "

As the Federal Register makes clear, Chen's parent organization in China is such an integral part of the PRC's defense s that transfer of technology to them is prohibited by default.

NOTABLE FEDERAL DEFENSE SUPPORT

Despite Chen having the formative years of her career in an agency that U.S. Government has declared acts in ways contrary to the national security interests of the United States, Chen still went to work with researchers working on defense related research.

Specifically, the labs she worked in at Harvard (before her recent transfer to Purdue) are led by a researcher who has long

running support from the United States military research enterprise.

- **Army Research Office:** As Chen's LinkedIn Profile notes,[6] she was a visiting researcher at Rutger's University. The ARO funded a grant for "New Quasi Low-Dimensional 4d and 5d Transition Metal Oxides with Correlated Electronic Properties - Synthesis and Characterizations" led by Rutgers researcher Martha Grennblatt.[7] Chen was actively involved in the research, being listed in the final report on three different published papers supported by the Army research.

Chen also worked under Norman Yao in his lab at Harvard.

- **ARO:** Yao is currently being supported by the Army Research Office as the paper Experimental Realization of Discrete Time Quasicrystals notes "N. Y. Y acknowledges support from the U.S. Department of Energy via the QuantISED 2.0 program (Geoflow), **the Army Research Office** (Grant No. W911NF-24-1-0079), and a Simons Investigator award.".[8] The research in the paper shows how scientists made a tiny piece of diamond behave like a **super-precise, multi-rhythm clock** at the quantum level. Inside the diamond are special defects that act like little spinning tops, and the researchers figured out how to get them to fall into several repeating time patterns at once—patterns that stay amazingly stable even when the system is being pushed and disturbed. In everyday terms, it's like creating a musical chord in time instead of in sound, and having it play perfectly over and over without drifting. Ultra-stable time patterns like these could one day help build **better navigation systems that don't rely on GPS, more sensitive detectors for hidden objects or weak signals**, and **more reliable components for future quantum computers and secure communications.**

Her current lab director at Purdue, Tongcang Li has a long history of Defense Department support.

- **DARPA:** "Engineering giant momentum asymmetry of the quantum vacuum." Project dates: 5/12/2020-5/30/2023. (Co-PI) Los Alamos National Laboratory, "Initial Studies on Ultracold Neutron Cooling and Focusing." Project dates: 6/19/2019 - 12/31/2019. (sole PI) [9]
- **DARPA:** "Designing quantum fluctuational meta-molecules for giant cooperative light- matter interaction beyond spectral boundaries." Project dates: 8/06/2018-8/05/2022. (Co- PI) [10]
- **Office of Naval Research (ONR),** "Investigating surface interactions with levitated optomechanics at the quantum limit." Project dates: 6/01/2018-8/31/2024. (PI)[11]

RISK ASSESSMENT

High

Dr. Chen is a leading researcher in an area of critical defense research who was trained at one of China's leading military research institutes, which the U.S. government has labeled as a hostile actor who behaves in a way contrary to U.S. national security interests. Dr. Chen still has ties to HPSTAR and her continued work in this critical area represents a significant threat for transfer of vital research information aiding the Chinese at the expense of the United States.

DATE REVIEW COMPLETE: 12-17-2025

SOURCES

[1] OLD_HPSTAR - 北京高压科学研究中心, accessed December 17, 2025, https://hpstar.ac.cn/hpstar_old/channels/208.html
[2] U.S. Department of Defense, Fiscal Year (FY) 2024 Budget Estimates: Army, Justification Book Volume 1a of 1, Research, Development, Test & Evaluation (RDT&E), Army—Volume I, Budget Activity 1 (Washington, DC: Department of Defense, March 2023), accessed December 17, 2025, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2024/Base%20Budget/rdte/RDTE-Vol%201-Budget%20Activity%201.pdf
[3] 北京高压科学研究中心, accessed December 17, 2025, https://hpstar.ac.cn/channels/819.html
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[11] Purdue University, "Seed for Success Acorn Awards – Office of Research," accessed December 17, 2025, https://www.purdue.edu/research/oevprp/researcher-resources/awards/seed-for-success/index.php?year=2018

ENGLISH NAME: XU, JINGAO
CHINESE NAME: 徐京傲
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: CARNEGIE MELLON UNIVERSITY

AGE: 30	**AREA OF EXPERTISE:** ADVANCING EDGE COMPUTING WITHIN DRONE-BASED SYSTEMS [1]
CHINESE UNIVERSITY: TSINGHUA UNIVERSITY	**PHD:** EDGE-ASSISTED REAL-TIME LOCALIZATION WITH MULTI-MODAL FUSION
U.S. UNIVERSITY LAB: COMPUTER SCIENCE DEPARTMENT OF CMU, WORKING WITH PROFESSOR MAHADEV SATYANARAYANAN	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Xu's admittance into the U.S. on a J-1 visa poses serious national security concerns. Dr. Xu's research focuses on drone technology and specifically on computing solutions that have shown direct application to warfighting. Further, Dr. Xu's lab at Carnegie Mellon university is directly involved in research for the United States Army and Navy, including his mentor being an advisor to a naval proving ground. Exacerbating all of these concerns is the fact that Dr. Xu was an active and enthusiastic member of the Chinese Communist Party before he was admitted to the United States.

DATE REVIEW COMPLETE: 12-05-2025

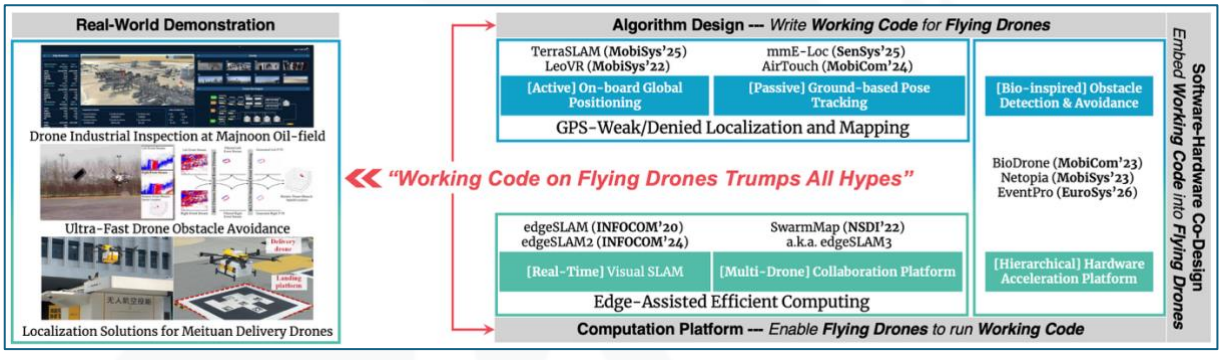
WHY THE RESEARCH IS CONCERNING:

As the recent conflicts around the world have shown, one of the newest emerging areas of combat is the use of unmanned vehicles, particularly aerial drones. Coordinated drone operations have become increasingly common and effective, using swarms of small, unmanned vehicles to attack adversaries, and all indications are they will play a prominent role in future conflicts.[2] Concerningly, Jingao Xu's research lies squarely in this emerging area of research.

Dr. Xu makes outlines the goals of his research very clear on his webpage:[3]

> *How can cutting-edge CV/AI advances empower running robots, flying drones, and soaring satellites (NOT just excel on datasets or in simulators)? The only way to answer this question is to build effective mobile systems. In the era of Low-Altitude Economy, building system supports to Enhance Drone's Intelligence and Autonomy is our current focus, that is, "Working Code on Flying Drones Trumps All Hypes" (inspired by Prof. Satya). In pursuit of making code operational and drones airborne, our group think this problem from the following three perspectives:*
>
> - *Algorithm/Model Front: Write Working Code for Flying Drones.*
> - *Computing/System Front: Enable Flying Drones to run Working Code.*
> - *Software-Hardware Co-Design: Embed Working Code into Flying Drones.*

If there were any doubt about the possible applications of Dr. Xu's research, he provided helpful graphics detailing the "Real World Demonstration" of the uses of his research.[4]



It takes little imagination to understand that drone technologies that can be used for "Drone Industrial Inspection" at an "Oil Field" can easily be repurposed to munitions payload delivery at an oil field to cripple critical infrastructure.

The expertise the Xu is developing in the United States has clear defense applications, and further when he returns to China he would be in a strong position to take the expertise he has developed and apply it quickly to enhancing the capabilities of the People's Liberation Army.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Dr. Xu's research expertise alone raises serious enough defense application concerns that the area of study alone should likely bar study in the United States. Unfortunately, additional findings raise further concerns about Xu's study at CMU. In addition to the national security concerns related to the application of Dr. Xu's research there are serious concerns about his placement at Carnegie Mellon. CMU is the home of the "Software Engineering Institute, ... a Federally Funded Research and Development Center (FFRDC)—a nonprofit, public-private partnership that conducts research for the United States government… the SEI conducts R&D in software engineering, systems engineering, cybersecurity, and many other areas of computing, working to introduce private-sector innovations into government."[5]

Unsurprisingly, SEI is a leading funder and supporter of drone research to support warfighting. Last year SEI was promoting the work of CMU professors to assist the Army with more accurate munitions targeting:[6]

> "[Project] Shrike is about improving small-unit capability on the front line," said Jeff Mattson, the SEI's Shrike project lead. The project draws on areas of SEI expertise: ML in edge environments with memory and connectivity constraints, as well as integration into a package that is easily deployable on most UAS platforms. These research areas can inform Army fires modernization efforts.

Dr. Xu's imagery noted above highlights his expertise and work in edge computing, the same research area Dr. Mattson

highlighted in the universities' work for the Army. Dr. Xu's overlap in a research area so critical to the United States Army should raise concerns that critical defense applicable expertise could be leaking to the Chinese.

Additionally, Xu is working directly under Dr. Mahadev Satyanarayanan. Dr. Satyanarayanan, and his lab have worked closely with the United States military laboratories (detailed below in the funding section of this report.) Dr. Satyanarayanan's cooperation and expertise prompted the United States Navy to bring him to the Dahlgren Proving Ground to strengthen the relationship with him and his lab.[7]

> "This has been an outstanding collaboration," said Dr. Mahadev Satyanarayanan, a professor in the School of Computer Science at Carnegie Mellon. "We came with a lot of knowledge of edge computing and Artificial Intelligence/Machine Learning, but we had almost no military knowledge or military-specific operational background. The Dahlgren team helped us gain a much deeper appreciation for these issues and the challenges of applying our research to these types of tactical environments."

Dr. Xu's close relationship with a researcher who is working closely with the military research community, and his expertise in defense critical research areas creates serious questions as to whether Dr. Xu should be in his position at CMU.

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

Research into Dr. Xu's activities in China raise compelling concerns that he is an active supporter of the Chinese Communist Party.

FINDINGS IN CHINA

- Xu is a confirmed CCP member. Served as graduate student counselor for Tsinghua's 2017 cohort, receiving the "Lin Feng Counselor Award" [林枫辅导员奖] and "12.9 Counselor Award [12.9 辅导员奖]."[8] [9]
- In 2017, authored article citing inspiration from Deng Xiaoping and Xi Jinping, quoting Xi's statement on "the necessity to rely on ideals and convictions that are the soul of Communist Party Members [“要靠铸牢理想信念这个共产党人之魂”]." Xu also praised the CCP having “over the past nearly 100 years, led the country out of poverty into prosperity[“在过去的近百年来，党带领国家从饥寒交迫走向繁荣昌盛”]”, and said to be “confident that the Party will “bring the country to the Great Rejuvenation now and in the future [“今后也必会依然带领国家走向伟大复兴”].”[10]
- In 2022 graduation speech, referenced "chip war" [“芯片战”] and "trade war" [“贸易战”] between China and U.S., celebrated Qinghua students "writing code on the motherland" [“把代码写在祖国的大地上”] and “serving the country through software [“软件报国”]."[11]
- Declared mission as counselor was nurturing students to be "both red and professional" [“又红又专”] when receiving the Lin Feng award in January 2022. He was photographed wearing Party badge at the ceremony.[12]

NOTABLE FEDERAL DEFENSE SUPPORT

The lab Xu works in has received repeated support from the United States military research offices. A sample is below.

- **U.S Army & U.S. Navy:** Xu's lab director published, the scholarly paper “Beyond Federated Learning: Survival-Critical Machine Learning” [13] which dealt with AI learning “on the edge” (e.g., aboard drones or remote sensors) in real time, rather than trained ahead of time in the cloud detailing the technologies utility for operating in

adversarial environments. As the acknowledgements note, "This material is based upon work supported by the U.S. Army Research Office and the U.S. Army Futures Command under Contract No. W519TC-23-C-0003, by the United States Navy under award number N00174-23-1-0001, and by the National Science Foundation under grant number CNS-2106862... **This work was done in the CMU Living Edge Lab.**" Dr. Xu works in the Living Edge Lab.[14]

- **DARPA:** A 2019 paper, "Augmenting Cognition Through Edge Computing" discussed how when processing is done close to a user's device (rather than in a distant data center) it could dramatically improve "augmented cognition." It showed how wearable devices plus nearby servers can give real-time help with tasks and boost human memory. As the acknowledgements note, "The work of Mahadev Satyanarayanan was partly supported by DARPA under contract HR001117C0051." [15]

RISK ASSESSMENT

High

Dr. Xu is an expert on defense critical technology research, working in a lab that is actively working with the United States military. His access and proximity gives him the ability to share critical research with the PRC and to develop relationships with individual working closely with the U.S. military on sensitive research. Further his history of active support for the Chinese Communist Party makes him sympathetic to the national goals of the party and a likely partner for Chinese foreign espionage activities in the United States.

DATE REVIEW COMPLETE: 12-09-2025

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ENGLISH NAME: YINGKAI DONG
CHINESE NAME: 董尹凯
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: HARVARD UNIVERSITY

AGE: 23	**AREA OF EXPERTISE:** EXOSKELTON RESEARCH
CHINESE UNIVERSITY: SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY	**DEGREE:** ROBOTICS ENGINEERING
U.S. UNIVERSITY LAB: HARVARD SLADE LAB	**TITLE AT U.S. LAB:** RESEARCH FELLOW

EXECUTIVE SUMMARY: Both the United States and China covet the capability of enhancing their soldier's operations (increased load capacity, greater endurance, finer object manipulation etc.) through exoskeleton augmentation. Yingkai Dong is a leading researcher in this space, conducting cutting edge research to augment human physical activity, with a direct application to warfighting. In addition to the threat of technology transfer from Dong's research is his strong, active, and public support in China for the Chinese Communist Party. The features combined make him a significant threat.

DATE REVIEW COMPLETE: 12-05-2025

WHY THE RESEARCH IS CONCERNING:

Enhancing the physical capabilities of soldiers, whether it is endurance, strength or agility would be a significant advantage, particular for ground combat troops. Mechanical augmentation of the human body is one of the most obvious and fruitful ways to achieve that capability. Yinkai Dong is a leading researcher in this area of research and has published extensively on mechanical augmentation of human function with a particular focus on the hand.[1] This is a capability that the United States military has identified as transformative. In the United States Army's *Infantry* magazine they note:[2]

> Robotic exoskeletons are electronic devices that attach to a human user's body and contain actuators that deliver mechanical power to augment movement. One class of these devices facilitates upper-limb movements such as reaching, grasping, or lifting with the arm or hand. … In my opinion, robotic exoskeletons represent more than an enhancement to current infantry. Military, robotic exoskeletons can create a distinct kind of heavy infantry unit that can improve current U.S. Army combined arms teams.

It is also important to note, that the leadership of Dong's lab, Dr. Patrick Slade, is among the leading researchers in the world on exoskeleton research. As detailed below in the federal funding section, Dr. Slade has been supported by the Army's soldier research center. This should be unsurprising when one takes a moment to note the striking similarity in the imagery from Slade's lab promotional videos (left below)[3] and visualization of soldier augmentation from the Army (right below).[4]

Additionally, the People Liberation Army's interest in this technology is not speculative. Reporting in China highlights the PLA's deployment of technologies that have troubling similarities to the type of technologies Dong works on.

As the reporting notes,[5] "not only does the exoskeleton increase soldiers' weight-carrying capacity in high altitude terrain, but, crucially, is elevated to provide a clear combat advantage"["在氧气稀薄的高海拔地区，外骨骼不仅提升单兵负重能力，更直接转化为持续作战优势"]

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

According to a university recruitment video, Dong is a 2020-cohort student in the Robotics Engineering program within SUSTech's Department of Mechanical and Energy Engineering, residing in Zhixin College, with political status listed as "CCP probationary member" (中共预备党员).[6] A SUSTech official communication confirms Dong as a "CCP probationary member" and describes him as an outstanding student cadre conducting research on robotic hands and adaptive grasping, with multiple invention and utility model patent applications, and participation in summer research at Tsinghua University and an academic year exchange at MIT. Dong was recognized as one of SUSTech's "Top 10 Outstanding Undergraduate Graduates" in 2024.

Dong applied to join the Communist Party during his first month at SUSTech in 2021"董尹凯同学在入学第一个月就递交了入党申请书，经过书院的培养、考察和发展，他在去年底正式加入中国共产党，成为了一名光荣的中共预备党员。",[7] undergoing freshmen military training as well.

暑期青马班 / Summer Youth Marxist Training Program

He is also the member of the "Young Marxists'（青马班）Training Program" an initiative by China's Communist Youth League to raise "politically solid, theoretically grounded, and highly capable" individuals as "reliable successors to socialism with Chinese characteristics". Dong also entered the summer research internship program of Tsinghua University as the single SUSTech freshman, and conducted research on the adaptive gripping mode of linear plain clamps. In March 2022, after passing the preliminary review of materials and two interviews, he was successfully selected for the MIT exchange program of the Southern University of Science and Technology and went to MIT to carry out a one-year exchange activity. SUSTech also dedicating an article to Dong's volunteer and research work, SUSTech has described him to be "striving to innovate, serve the country with science and technology, and become the person needed by the party and the country" ["科技报国，成为党和国家需要的人"].

Notably, Dong is listed among patent developers of an adaptive robot fingers prototype, submitted in 2018 by Tsinghua University. The timeline is potentially dangerous - as the patent application was granted after or during Dong's time at MIT, suggesting a potential technology transfer.[8]

NOTABLE FEDERAL DEFENSE SUPPORT

- **U.S. Army Natick Soldier Research, Development and Engineering Center:** Steven H. Collins who is Slade's peer at Stanford and a leading researcher in the exoskeleton research area, published "Comparing optimized exoskeleton assistance of the hip, knee, and ankle in single and multi-joint configurations" which "was supported by the U.S. Army Natick Soldier Research, Development and Engineering Center (Grant number W911QY18C0140)" Slade and Collins are still frequent collaborators, having written a paper on the subject last year, providing Dong with a pipeline to collaborate with Army researchers.[9]

RISK ASSESSMENT

High

Yingkai Dong's research could literally enable the Chinese army to build super-soldiers for a war in Taiwan or elsewhere. He is a leading researcher in this space whose post at Harvard gives him the ability to collaborate with some of the world's leading exoskeleton scientists and engineers. Further his documented support for the Chinese Communist Party makes him incredibly receptive to supporting the PLA's research and espionage activities.

DATE REVIEW COMPLETE: 11-09-2025

SOURCES

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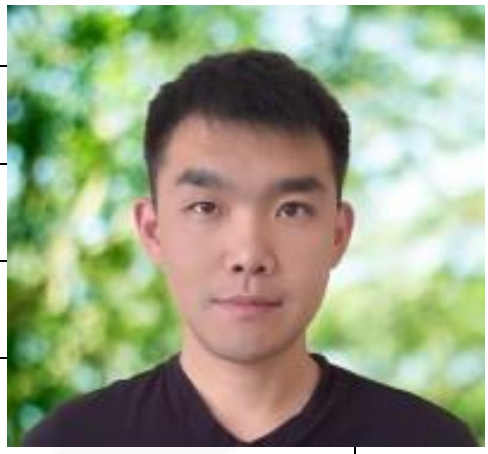

ENGLISH NAME: XIE, ZONGLIANG
CHINESE NAME: 谢宗良
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: LAWRENCE BERKELEY NATIONAL LABORATORY

AGE: 29	**AREA OF EXPERTISE:** HIGH TEMPERATURE ELECTROSTATIC ENERGY STORAGE CAPACITORS
CHINESE UNIVERSITY: XI'AN JIAOTONG UNIVERSITY	**PHD:** ELECTRICAL ENGINEERING
U.S. UNIVERSITY LAB: MOLECULAR FOUNDRY	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Zongliang Xie's admittance into the U.S. on a J-1 visa raises security concerns due to his field of research. Xie's research presents notable dual-use implications due to its focus on high-performance polymer-based materials and thermal-resilient electronics. These materials are relevant to the development of military applications, including high-power radar systems, directed-energy platforms, and electronic components for aerospace and defense systems. Further concern is raised from Xie's academic background at Xi'an Jiaotong University, an institution flagged as high-risk due to its affiliation with CCP research initiatives.

DATE REVIEW COMPLETE: 12-12-2025

WHY THE RESEARCH IS CONCERNING:

Xie's work features high-performance polymer-based materials engineered for durability, efficiency, and stability under elevated thermal and electrical stress.[1] Xie's focus is on Electrostatic energy storage (EES). His goal is to find low-density, cost-effective, and flexible materials that can replace conventional polymers to create high-durability materials. He also focuses on the scalability of these advanced polymers and their integration into high-endurance capacitors and high-intensity electronic systems. These technologies enhance the next generation of power electronics by offering improved energy density and reliable operation in harsh or high-temperature environments where traditional materials fail.

These materials carry significant military application implications, evidenced by the Air Force research lab's support for this research noted below. The same high-temperature, high-capacity polymer materials that support civilian innovations, such as electric power systems and industrial high-power electronics, also closely align with the needs of military weapons systems.

Defense applications typically require compact, robust capacitors and power systems for radar, electronic equipment, directed energy systems, aerospace, and missile guidance electronics. The performance improvements studied by Xie's research could enhance the endurance and resiliency of these systems. Due to these factors, it contributes knowledge and capabilities that can be retrofitted for military technologies.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

The University in China that Xie attended, Xi'an Jiaotong University, has been flagged as a high-risk institution by the U.S. House Select Committee on the Chinese Communist Party due to its affiliation with the State Administration for Science, Technology, and Industry for National Defense (SASTIND).[2] SASTIND is an entity that coordinates China's defense research and weapons development outside the People's Liberation Army

(PLA). It oversees sensitive research and development and integrates academic institutions into China's military industrial complex.[3] Universities tied to SASTIND play a role in advancing technologies that support military modernization and dual-use research initiatives. This designation means that individuals trained at or collaborating with these institutions must be viewed with scrutiny. The U.S. House Select Committee asserts that "SASTIND plays a critical role in managing China's defense R&D outside the PLA, coordinating weapons development, setting technical standards for defense industries, and integrating efforts across provincial and national levels."[4]

This intensifies concerns about Xie's current involvement in research at the Lawrence Berkeley National Laboratory. This laboratory is at the forefront of American innovation in science and technology. And has been a repeated target of foreign espionage operations including by the Chinese just a few months ago.[5]

Xie's involvement in federally and militarily funded research projects should be particularly concerning. It raises questions about the flow of technical knowledge, access to national security researchers, the potential for technology and knowledge transfer, and the risk that U.S.-funded technology in fields such as high-performance polymers and thermal-resilient electronics could indirectly support foreign defense programs. Given the strategic importance of these material systems for energy storage, high-power electronics, and aerospace applications, collaborations with individuals who have high-risk academic ties carry potential national security implications.

NOTABLE FEDERAL AND DEFENSE SUPPORT

While at the Molecular Foundry facility at the Lawrence Berkeley National Laboratory, Xie has worked on several projects funded by federal and defense agencies. A few examples are below:

- **AFOSR:** The Air Force Office of Scientific Research (AFOSR) is the research arm of the U.S. Air force. Its stated

mission is to discover, shape, champion, and transition high risk basic research to profoundly impact the future Air and Space Force.[6] Xie worked in conjunction with an associate on "Machine learning-accelerated discovery of heat-resistant polysulfates for electrostatic energy storage"[7] who had Air Force funding. In the acknowledgments, support was acknowledged from the Air Force Office of Scientific Research (AFOSR) through the Air Force's Young Investigator Research Program (FA9550-20-1-0183; programme manager: M.-J. Pan and D. Barbee).

- **DOE:** The Lawrence Berkeley National Laboratory conducts research with funding from the U.S. Department of Energy (DOE). Xie's research is no different. In the work on "High-performing polysulfate dielectrics for electrostatic energy storage under harsh conditions"[8] the U.S. Department of Energy is acknowledged with: "This work was funded by the US Department of Energy, Office of Science, Office of Basic Energy Sciences, Materials Sciences and Engineering Division under contract no. DE-AC02-05CH11231." Also acknowledged in this work is Dr. Feng from Xi'an Jiaotong University for technical support. This is the same institution identified as contributing to China's defense science and weapons development ecosystem that Xie attended. Furthermore, the same project also acknowledges Dr. Cheng from Tsinghua University, another Chinese university flagged by the Select Committee as high risk due to its affiliation with SASTIND.

RISK ASSESSMENT

High

Xie is conducting research in fields that have potential military applications. He is doing so at Lawrence National Laboratory, a lab with a substantial amount of federal funding. The Chinese University, which Xie attended, is a high-risk institution due to its ties with the CCP military's adjacent research. To make matters worse, in research Xie has worked on at the Lawrence Berkeley National Laboratory, funded by the DOE, multiple professors from high-risk Chinese universities are also collaborating on this research. With these facts in

mind and the sensitivity that should be in place to ensure national security, Xie is a high risk.
DATE REVIEW COMPLETE: 12-12-2025

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ENGLISH NAME: CEN ZHANG
CHINESE NAME: 张岑
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: GEORGIA TECH

AGE: 30	**AREA OF EXPERTISE:** SOFTWARE SECURITY AND VULNERABILITY DETECTION
CHINESE UNIVERSITY: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA	**PHD:** COMPUTER AND INFORMATION SCIENCE
U.S. UNIVERSITY LAB: SYSTEMS SOFTWARE & SECURITY LAB	**TITLE AT U.S. LAB:** GROUP LEADER

EXECUTIVE SUMMARY: Dr. Zhang is a group leader for Georgia Tech's software security lab. Dr. Zhang works on vital cybersecurity and artificial intelligence research that is funded by U.S. national security/defense organizations. In addition to national security groups, Zhang's work has also led him to participate in competitions with leading artificial intelligence companies like OpenAI and Microsoft, recently winning a DARPA cyber competition. Zhang's prior work with Chinese entities and his influential role at Georgia Tech is highly concerning given the nature of computer sciences impact on U.S. national security.
DATE REVIEW COMPLETE: 12-05-2025

WHY THE RESEARCH IS CONCERNING:

With a focus on artificial intelligence and cyber security, Georgia Institute of Technologies Systems Software & Security Lab (SSLAB)'s work is vital to U.S. national security interests. Groundbreaking research on cybersecurity and AI cannot be allowed to fall into the hands of the Chinese Communist Party. A recent publication from the Department of War underscored the need for the U.S. to stay ahead of the Chinese in the AI race: "Tull also said that, while he's glad to see how Socom [Special Operations Commmand] has embraced the need to integrate AI, the level of that embrace must be absolute to keep up with the pacing threat from adversaries like China. "You're talking about the ability to pull ahead [and] stay ahead; **and [if you fall behind in AI development] I'm not sure that you can catch up,**" he said."[1]

SPECIFIC ADDITIONAL RESEARCH FINDINGS THAT RAISE CONCERNS

Dr. Zhang's work has led him to participate in DARPA's Artificial Intelligence Cyber Challenge (AIxCC), a competition with collaborators like DEF CON, Black Hat USA, OpenAI, Microsoft, and Google.[2] [3] Dr. Zhang's inside knowledge of leading defense collaborators and AI platforms is a significant threat in the race between China and the U.S. for AI superiority.

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

Cen Zhang has worked on several pieces of research which were directly funded by entities in China. These Chinese entities include the National Key Research and Development Program of China, the Natural Science Foundation of China, and the Strategic Priority Research Program of the Chinese Academy of Sciences (CAS).[4] CAS has been implicated in military technology breakthroughs in high-yield explosives and nuclear weapons developments in China.[5]

NOTABLE FEDERAL SUPPORT

- **ONR:** Zhang's lab is funded by the Office of Naval Research.[6] ONR has a program that specifically focuses on the design and construction of complex software and

hardware systems that promote security, safety, reliability, and performance.[7]

- **SNL:** Research at Zhang's lab is also funded by Sandia National Laboratories.[8] This lab is a contractor of the National Nuclear Science Association.[9]
- **DARPA:** The lab is also funded by the Defense Advanced Research Projects Agency.[10] DARPA is focused on creating breakthrough technologies dealing with U.S. national security interests.[11]
- **NSF:** The National Science Foundation is also a funder of the SSLAB at Georgia Tech. NSF funds computer and information science research that advances cutting-edge innovation in the computer science field.[12]

RISK ASSESSMENT

High

As a leading researcher in software security and vulnerability detection, Dr. Zhang poses a significant risk to the safety of innovative computer science research in the United States. Dr. Zhang's close work on projects involving vital national security programs/contractors and leading tech companies is highly concerning. Dr. Zhang's research work funded by entities associated with the Chinese Ministry of Science further poses significant risks to information security. Dr. Zhang should be removed from the United States as he poses a clear and present danger to secrets concerning cyberwarfare and artificial intelligence development.

DATE REVIEW COMPLETE: 11-17-2025

SOURCES

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ENGLISH NAME: GAO, JINGHAN
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: UNIVERSITY OF FLORIDA

AGE: 30	**AREA OF EXPERTISE:** HIGH TEMPERATURE RESISTANT HEATING, ALUMINUM SCANDIUM NITRIDE (ALSCN), ENERGY-EFFICIENT STORAGE, SEMICONDUCTORS.
CHINESE UNIVERSITY: XI'AN JIAOTONG UNIVERSITY	**PHD:** ELECTRICAL ENGINEERING
U.S. UNIVERSITY LAB: INTERDISCIPLINARY MICROSYSTEMS GROUP	**TITLE AT U.S. LAB:** POSTDOCTORAL ASSOCIATE

EXECUTIVE SUMMARY: Jinghan Gao research on high-temperature-resistant materials and related work in energy-efficient storage and semiconductor technologies represent a serious dual-use risk technology and national security concerns. These areas can enhance sensors and electronic components, which have applications in advanced military systems, such as radar systems, hypersonic technologies, and aerospace applications. Additional concerns arise from Gao's background at Xi'an Jiao Tong University, a high-risk institution in China. Lastly her labs' work for U.S. defense agencies raises security concerns.

DATE REVIEW COMPLETE: 12-11-2025

WHY THE RESEARCH IS CONCERNING:

Dr. Gao has been involved in research focused on high-temperature stability materials, an area with direct relevance to environments characterized by extreme thermal and electromagnetic stress. Examples of such work include "Aluminum Scandium Nitride as a Functional Material at 1000 °C"[1] and "Unprecedented enhancement of piezoelectricity of wurtzite nitride semiconductors via thermal annealing."[2] While such materials research can support legitimate civilian and industrial applications, it also has applicability in military and defense systems that operate under similarly harsh conditions. The military application of her work is not theoretical, but rather evidenced by the facts (detailed later in this report) that Gao has published research which has been underwritten by DARPA and the Army Research Office.

The most significant potential military applications of this work are in radar systems and advanced electronics used in aerospace and hypersonic platforms. These systems require materials that can maintain performance and reliability at elevated temperatures. Materials capable of withstanding high temperatures are enablers for next-generation radar, guidance systems, power management electronics, and signal-processing technology used in modern weaponry.

Beyond aerospace and hypersonic systems, this research has broader applicability to military sensors, field electronics, and high-performance capacitors. The ability to adapt civilian materials for military use cases raises further concern, as it lowers barriers to rapid retrofitting and integration into defense systems.

Overall, Gao's involvement in high-temperature stability materials research represents clear dual-use potential for defense and national security utilization. With the strategic importance of resilient electronics in warfare, Gao's research should be cause for concern, especially given the rest of her profile.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Gao attended Xi'an Jiao Tong University, an institution that has been flagged as high risk by the U.S. House Select Committee on the Chinese Communist Party due to its close institutional ties to the CCP and its formal relationship with the State Administration of Science, Technology and Industry for National Defense (SASTIND).

> "SASTIND-affiliated universities maintain specialized labs, programs, and departments dedicated to military research. SASTIND plays a critical role in managing China's defense R&D outside the PLA, coordinating weapons development, setting technical standards for defense industries, and integrating efforts across provincial and national levels. Subordinate to the Ministry of Industry and Information Technology (MIIT), SASTIND also shares personnel and functions with the China Atomic Energy Authority and the China National Space Administration."[3]

Given the nature of the relationship between Xi'an Jiao Tong University and the CCP, her attendance at the institution is noteworthy.

Gao's time at the University of Florida was spent at the Interdisciplinary Microsystems Group (IMG), whose research focuses on micro- and nanosystems for healthcare, energy, security, aerospace, transportation, consumer electronics, and other industries.[4] This group receives generous funding from multiple federal agencies and conducts research on sensitive and defense-related fields. Gao's advisor at IMG, Roozbeh Tabrizian, has conducted research focused on F micro- and nano-electro-mechanical systems (RF N/MEMS), nonlinear, nonreciprocal, and hybrid NEMS for sensing and information processing, and emerging ferroelectric materials and devices.[5]

Specifically, his research has applications for sensors and radar systems. These are either directly related to or adjacent to Gao's research areas, which is a concerning fact when considering the lab's sponsors.

NOTABLE FEDERAL DEFENSE AND MILITARY SUPPORT

The Interdisciplinary Microsystems Group (IMG), where Gao has worked,[6] has received notable funding from U.S. federal and defense agencies. A few examples are below:

- **DARPA:** The Defense Advanced Research Projects Agency (DARPA) is a U.S. Department of Defense agency that funds research to create technological breakthroughs for national security. Gao's advisor at IMG, Roozbeh Tabrizian,[7] has been a recipient of multiple rounds of funding and awards from DARPA.[8] Gao has also worked on DARPA-funded research projects such as "Aluminum Scandium Nitride as a Functional Material at 1000 °C."[9] This research has potential military applications, including high-resiliency sensors and components for enhancing aerospace and missile reliability.
- **ARO:** The Army Research Office (ARO) drives cutting-edge and disruptive scientific discoveries that will enable crucial future Army technologies and capabilities through high-risk, high pay-off research opportunities.[10] Both Gao and her mentor have worked on research with funding from ARO, with an example being: "Unprecedented enhancement of piezoelectricity of wurtzite nitride semiconductors via thermal annealing."[11] The dual-use applicability of research like this could enhance the precision of radar systems and navigation systems.

RISK ASSESSMENT

High

Gao's research on high-temperature stability materials has clear defense implications. These technologies support not only civilian industries but also advanced military systems that must operate under extreme thermal stress. These materials are relevant to radar systems, aerospace electronics, and guidance technologies. All of these depend on components that can maintain performance at elevated temperatures.

These risks are elevated by Gao's academic and research affiliations. Xi'an Jiao Tong University has been flagged as a high-risk institution due to its ties to SASTIND, which oversees China's defense research and development, as well as weapons development. Her later work at the University of Florida's IMG places her near defense-relevant technologies. Combined with her advisor Roozbeh Tabrizian's work on RF MEMS and radar-related sensing systems, the overlap raises significant concerns regarding the national security implications associated with her research.

DATE REVIEW COMPLETE: 12-11-2025

SOURCES

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[9] Venkateswarlu Gaddam et al., Aluminum Scandium Nitride as a Functional Material at 1000 °C, Advanced Electronic Materials (2025), https://doi.org/10.1002/aelm.202400849

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ENGLISH NAME: DONG, XUEWEN
CHINESE NAME: 董学文
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: STEVENS INSTITUTE OF TECHNOLOGY

AGE: 44	**AREA OF EXPERTISE:** MACHINE LEARNING AND CYBERSECURITY APPLICATIONS
CHINESE UNIVERSITY: XIDIAN UNIVERSITY	**PHD:** COMPUTER APPLICATION TECHNOLOGY
U.S. UNIVERSITY LAB: DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING	**TITLE AT U.S. LAB:** VISITING SCHOLAR

EXECUTIVE SUMMARY: Xuwen Dong's study in the United States represents a threat stemming from his research focus on edge computing, autonomous systems, and machine learning. His research into mobile intelligent vehicles could provide optimization for technologies such as unmanned aerial drones, autonomous ground vehicles, and advanced predictive targeting or navigation systems. Compounding the concern is Dong’s institutional affiliation with Xidian University, which is affiliated with the Chinese Communist Party.

DATE REVIEW COMPLETE: 12-10-2025

WHY THE RESEARCH IS CONCERNING:

Unmanned vehicles and drones are expected to have a significant impact on warfare in the 21st century. This fundamental transformation in the conduct of operational warfare continues to shape the new reality of the operational environment.[1] With the importance of such technology in mind, any research conducted on such materials should be viewed through the lens of national security.

Dong's research focuses on edge computing, which enables localized data processing, thereby enhancing processing speed and reducing latency. Specifically, Dong is using edge computing to optimize architectures for intelligent and autonomous systems, with a strong emphasis on task offloading and trajectory planning for autonomous aerial vehicles (AAVs) operating within multi-input multi-output (MIMO) mobile edge computing environments.[2] While these technologies have commercial applications, the enhancement of technical capabilities, increased computational power, and the enabling of real-time autonomous decision-making have obvious use cases for military applications.

An aspect of Dong's work involves location prediction and forecasting future motion trajectories for intelligent vehicles.[3] These capabilities would enable intelligent systems to anticipate movement, allowing for optimized resource allocation and minimized delays in dynamic operational environments. These advancements are particularly significant in contested or bandwidth-limited environments, where resilient, low-latency computation is helpful for autonomous platforms operating without continuous human oversight.

Dong's research further addresses intelligent resource load management and delay prediction within vehicle networks. These functions closely align with the requirements for coordinated autonomous systems, including swarming drones and unmanned ground vehicles. The ability to predict system behavior and adapt mobility strategies enhances mission reliability, attributes that are critical in defense and intelligence scenarios.

Additionally, Dong's application of machine learning techniques across multiple domains enhances the adaptability and predictive accuracy of these systems. Machine learning-driven optimization and prediction can reduce the need for human intervention while improving system performance in uncertain and rapidly changing environments.

With the emphasis on intelligent AAV vehicles in mind, this research has obvious military applications and raises concerns with substantial national security implications. The same technologies that enable efficient civilian autonomous transportation and smart infrastructure can also be leveraged for military surveillance, reconnaissance, targeting support, and coordinated unmanned operations.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Xuewen Dong's research, due to its contents, is not the only cause for concern. His funding sources and affiliations also raise significant concerns.

Dong is currently listed as a Professor at Xidian University.[4] Xidian has been identified as a high-risk institution by the U.S. House Select Committee on the Chinese Communist Party due to its deep institutional ties to the CCP and its affiliation with the State Administration of Science, Technology, and Industry for National Defense (SASTIND).

> "SASTIND-affiliated universities maintain specialized labs, programs, and departments dedicated to military research. **SASTIND plays a critical role in managing China's defense R&D outside the PLA,** coordinating weapons development, setting technical standards for defense industries, and integrating efforts across provincial and national levels. Subordinate to the Ministry of Industry and Information Technology (MIIT), SASTIND also shares personnel and functions with the China Atomic Energy Authority and the China National Space Administration."[5]

As a result, research conducted in collaboration with Xidian University warrants heightened scrutiny, particularly in technical domains with clear dual-use or military value.

Dong's research on location forecasting for mobile intelligent vehicles and joint trajectory planning and task offloading for MIMO AAV-aided mobile edge computing systems has been funded through Chinese government-related sources, which will be covered later in the report.

At the same time, Stevens Institute of Technology has received federal funding from U.S. agencies, including the National Science Foundation and the Department of Defense. These funding relationships are noteworthy and concerning. Integration into the U.S. research and defense ecosystem raises additional red flags. If Dong is involved in any U.S. research, particularly when conducted in collaboration with institutions linked to defense-aligned research programs, it is concerning.

NOTABLE CCP-RELATED SUPPORT

Dong's research into mobile intelligent vehicles and AAV location forecasting has been funded by the CCP state research initiatives. A few examples are seen below:

- **National Key R&D Program of China:** In an IEEE published work on "A Dynamic Task Offloading Scheme Based on Location Forecasting for Mobile Intelligent Vehicles,"[6] where the enhancement in the realm of location prediction modeling and forecasting is experimented upon, one of the funding agencies is listed as National Key R&D Program of China (Grant Number: 2023YFB3107500). This funding source is significant because the National Key R&D Program is not purely academic or neutral in nature. It is a state-directed initiative designed to advance technologies that align with China's long-term strategic priorities, including defense modernization, military-civil fusion, and emerging strategic capabilities.
- Another instance of National Key R&D Program funding is with another IEEE published work, "Joint Trajectory Planning and Task Offloading for MIMO AAV-Aided Mobile Edge Computing,"[7] where they are once again acknowledged. With Dong's association with a SASTIND-affiliated University and the funding received for AAV technologies, there is a likelihood of dual use and the advancement of

CCP AAV programs, even potentially furthering their defense arm.

RISK ASSESSMENT

High

As an authority in the field of cybersecurity, mesh programs, and machine learning, Professor Dong's research is aiding the development and sophistication of applications that will improve the intelligence capabilities of AAVs and intelligent mobile vehicles. With his funding sources directly stemming from CCP initiatives, he is connected to the CCP from both an institutional and a resource perspective, and as a result, he poses a high-level risk.

DATE REVIEW COMPLETE: 12-10-2025

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[7] Dong Xuewen et al., *Joint Trajectory Planning and Task Offloading for MIMO AAV-Aided Mobile Edge Computing*, https://ieeexplore.ieee.org/abstract/document/10772328

ENGLISH NAME: GENG, PEIHAO
CHINESE NAME: 耿培皓
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: THE PENNSYLVANIA STATE UNIVERSITY

AGE: 35	**AREA OF EXPERTISE:** WELDING MODELING W/IN A FRAMEWORK OF THIN-WALLED STRUCTURES
CHINESE UNIVERSITY: SHANGHAI JIAO TONG UNIVERSITY	**PHD:** MATERIAL SCIENCE AND ENGINEERING
U.S. UNIVERSITY LAB: MATERIALS PROCESSING & CHARACTERIZATION	**TITLE AT U.S. LAB:** ASSISTANT RESEARCH PROFESSOR

EXECUTIVE SUMMARY: Professor Peihao Geng's research focuses on AI-linked large language model (LLM) technology to enhance materials engineering, specifically lightweight materials with military implications. He has been involved in LLM-driven laser welding research conducted with the Los Alamos National Laboratory. Geng's research, with dual-use and defense applications, is funded by various military and federal agencies. These facts, along with his association with Shanghai Jiao Tong University, a high-risk institution in China, and China's overseas scientist recruitment program, raise serious national security concerns.

DATE REVIEW COMPLETE: 12-09-2025

WHY THE RESEARCH IS CONCERNING:

With the race to superiority on the Artificial Intelligence (AI) frontier at full speed, use cases such as LLM-enhanced laser welding and its relation to thermodynamics and kinetics are being explored. His research involves:

- Integration of LLMs to enhance prediction and process optimization for high-speed laser welding[1]
- Lightweight steel and dealing with underwater applications of such technologies[2]
- LLM-driven analysis of micro-pillar experiments[3]

The applications in this sphere of research involve the development of lightweight materials that could be applied to enhance the durability and performance of aluminum-steel resistance spot welds used in military vehicles, aircraft, and naval systems. With Geng having conducted LLM-driven welding research with the Los Alamos National Laboratory[4], the applicability to national security and military use cases is obvious. Geng is actively involved in ongoing research with his mentor on these topics, utilizing their knowledge and expertise in projects that receive federal backing to contribute to the advancement of materials engineering.

One of the specific research focuses of the lab where Geng has previously conducted research[5], the Materials Processing and Characterization Laboratory, is research on Thermodynamics and kinetics in materials modeling.[6] Given the potentially sensitive military applications of such research (ballistics, propulsion, and energetic materials), it is concerning that he is operating in these circles.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

While it should be abundantly clear that Geng's area of research is concerning and raises questions about why we allowed him to be involved at The Pennsylvania State University, there are additional findings that provide even more concern.

The laboratory where Geng has worked is run by Jingjing Li, a graduate of both Beihang University and Tsinghua University.

Beihang University has been flagged as high-risk by the Select Committee on the CCP due to its ties to the CCP, with its status as one of the Seven Sons of National Defense. This university runs major defense laboratories. Beihang also "adheres to the principle of educating talents for the Party and the nation" and "emphasizes the central role of the Party's political construction and adheres to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era as the fundamental guiding principle for running the university."[7]

Tsinghua, Xi Jinping's alma mater, has also been flagged as high-risk, due to its affiliation with the CCP's State Administration for Science, Technology, and Industry for National Defense (SATIND). SASTIND plays a critical role in managing China's defense R&D outside the PLA, coordinating weapons development, setting technical standards for defense industries, and integrating efforts across provincial and national levels. Subordinate to the Ministry of Industry and Information Technology (MIIT), SASTIND also shares personnel and functions with the China Atomic Energy Authority and the China National Space Administration.[8]

Furthermore, the University, where Geng is currently listed as an Associate Professor, Shanghai Jiao Tong University, is also flagged as high-risk due to its affiliation with SASTIND. Li's field of research overlaps with Geng's, focusing on AI-assisted laser welding and thermodynamics.

Both Peihao Geng and his mentor, Li, have conducted research at Los Alamos National Laboratory.[9] This lab is operated by Triad National Security LLC under the National Nuclear Security Administration Contract. Professor Li has also conducted research at the Argonne National Laboratory.

The consequences of Chinese nationals working with National laboratories, where nuclear research is being conducted, could be serious. As reported by the Associated Press, according to a congressional report, "China is exploiting partnerships with U.S. researchers funded by the Department of Energy to provide

the Chinese military with access to sensitive nuclear technology and other innovations with economic and national security applications."[10]

These connections and risks of dual use, coupled with the potential military applications of the research being conducted at the Materials Processing and Characterization Laboratory, are seriously concerning.

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

Geng holds a bachelor's degree in Materials and Control Engineering from Qingdao University of Science and Technology (2013), a master's degree in Materials Processing from Shandong University (2015), and a Ph.D. in Materials Science and Engineering from Shandong University (2019).

On the Shanghai Jiaotong University website, Geng is listed as the "Overseas Representative [海外负责人] under the Ministry of Education's "Chunhui Plan" [春晖计划] - a Chinese government program explicitly designed to facilitate international collaboration and leverage overseas Chinese researchers.[11] The Chunhui Plan (春晖计划, "Spring Sunshine Plan") is a Chinese Ministry of Education program established in 1996 that provides funding for overseas Chinese scholars to conduct collaborative research with Chinese institutions while based abroad, facilitating knowledge and technology transfer back to China. The 2023-2025 listing suggests that Geng directly facilitated knowledge transfer back to the Chinese state while conducting research in Pennsylvania State and Osaka.

NOTABLE FEDERAL AGENCY AND DEFENSE SUPPORT

Geng and his mentor have received support from the United States military and Federal agency research offices. A sample of such funding is below.

- **U.S. Navy:** within the scholarly article with which Jingjing Li was a part of "Mechanical properties of pure elements from a comprehensive first-principles study to data-driven insights"[12] predicts the ideal mechanical strength of different chemical elements. This is done to measure how strong, hard, and break-resistant each element

would be if it were flawless. Using advanced physics-based simulations, the researchers calculated properties such as tensile strength, shear strength, and hardness across multiple crystal structures. The result is a consistent, reliable set of performance values for elemental materials. Within the acknowledgments section of this paper, there is a funding acknowledgment from the Office of Naval Research (ONR) via Contract No.: N00014-21-1-2608 (A. M. Beese).

- Another example of such funding for Li can be found within the scholarly article "Computational investigations of the formation of intermetallic compounds in Al/Cu joints"[13] which covers simulating atomic interactions and the formation of structure processes. This is done to understand which combinations are thermodynamically stable and how atoms arrange themselves in these combinations. Their findings shed light on the behaviors that govern alloy formation, which helps predict material properties like strength, durability, and how the materials might perform under stress. The acknowledgment section of this paper names "financial support by the U.S. National Science Foundation (NSF) via Award No. CMMI-2226976 and the U.S. Office of Naval Research (ONR)."
- **DOE:** The Department of Energy (DOE) is an agency that has provided funding for Geng and Li. A University article, "Doing a lot with a little: New AI system helps explain laser welding defects"[14] featured Geng and Li's research into the use of AI to assist in welding strategies. They are utilizing AI (LLMs) to create usable mathematical equations that predict how laser welding behaves under various conditions. The article acknowledges "This research was supported by the U.S. Department of Energy Efficiency and Renewable Energy and the U.S. National Science Foundation."

RISK ASSESSMENT

High

Professor Geng is an expert in the rapidly accelerating AI space in industrialization. His research into LLM-assisted laser welding to create more durable and lightweight materials puts him on the cutting edge of the industry. Given his pivotal role in the frontier of materials development, the significance of his research and findings cannot be overstated. Geng's involvement with the Los Alamos Laboratory, coupled with his current association with a SASTIND-affiliated University, and his role in Chinese overseas recruitment programs, is highly significant from a national security perspective.

DATE REVIEW COMPLETE: 12-09-2025

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ENGLISH NAME: ZHU, CHUNYIN
CHINESE NAME: 朱纯银
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: INDIANA UNIVERSITY

AGE: 43	**AREA OF EXPERTISE:** SYNTHETIC ORGANIC CHEMSITRY AND NANOMEDICINE[1]
CHINESE UNIVERSITY: JIANGSU UNIVERSITY (PROFESSOR)	**PHD:** CHEMISTRY
U.S. UNIVERSITY LAB: DEPARTMENT OF CHEMISTRY	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Zhu presents a high national-security risk rooted in his deep, sustained integration into the CCP-aligned united-front political system while maintaining academic ties to the United States. His senior leadership roles within the China Democratic League, a CCP-subordinate united-front organization, demonstrate long-term political reliability, policy participation, and alignment with Party objectives. The risk is amplified by his prior postdoctoral appointment at Indiana University, an institution that maintains a Cooperative Research and Development Agreement (CRADA) with the Naval Surface Warfare Center (Crane), creating a credible access pathway to U.S. defense-adjacent research environments. Taken together, his political positioning, current employment at a PRC institution, and prior U.S. academic access raise concerns about influence, information exposure, and trustworthiness.

DATE REVIEW COMPLETE: 12-16-2025

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

(Zhu pictured in top right corner in a green shirt showcasing a Communist China flag alongside the banner for the Sixth Branch of the China Democratic League at Jiangsu University)

Zhu is a member of the China Democratic League and holds multiple leadership positions within the organization. His academic profile at Jiangsu University identifies him as a provincial middle-career scholar and an organic-synthesis specialist with work in visible-light catalysis, transition-metal catalysis, heterocycle synthesis, and related reaction-methodology development.[2] His political roles are extensive, WeChat and local government sources confirm Zhu serves as Secretary General and Organization Committee Member of the Jiangsu University Democratic League Committee［秘书长兼组织委员］

and Director of the Education Special Committee [民盟教育专委会主任].[3] [4] He is also a contributor to municipal political participation channels.[5] He has been recognized by the Jiangsu Provincial Democratic League Committee as an "advanced individual". ["先进个人"][6] Finally, Zhu is a participant in high-visibility political commemoration events such as a 2025 united-front commemoration of the Anti-Japanese War victory anniversary where he expressed ["铭记民盟组织在抗日救亡历史洪流中与中国共产党风雨同舟，肝胆相照、共御外侮的光荣历程"] "remembering the Chinese Democratic League's cooperation with the CCP in fighting against Japan and other foreign aggression".[7]

SPECIFIC FINDINGS THAT RAISE CONCERNS

Zhu collaborated with Silas Cook during his post-doctoral stay at Indiana University, publishing a paper on the "total synthesis of artemisinin" and patenting the associated product.[8] Silas Cook remains a Professor at Indiana University, demonstrating that strong ties Zhu fostered during his tenure from 2009-11 may still exist in some capacity to this day to the University and its faculty.[9]

Indiana University Department of Chemistry partnered with NSWC (Naval Surface Warfare Center) Crane in 2018 for research on the interconversion of molecular conformer switches.[10] This establishes a connection between the United States military and the Chemistry department, a connection that can potentially be taken advantage of by Zhu. Zhu, an avowed and active communist, having proximity to defense research and defense researchers creates a significant risks for asset cultivation or transfer of sensitive technology.

RISK ASSESSMENT

High

Dr. Zhu is high risk because he combines deep, demonstrable integration into the CCP's united-front political apparatus with prior and continuing access to U.S. academic institutions that maintain defense research agreements. His senior leadership roles in the China Democratic League indicate long-term political reliability and active participation in CCP-aligned policy and influence activities, rather than passive or

incidental affiliation. This risk is compounded by his postdoctoral tenure at Indiana University, where enduring professional ties and the department's collaboration with the Naval Surface Warfare Center (Crane) create a plausible pathway to sensitive knowledge or networks. Even though his chemistry research is not exclusively military, the convergence of political loyalty, current PRC institutional employment, and prior U.S. access raises concerns about influence, trustworthiness, and potential exploitation of academic channels.

DATE REVIEW COMPLETE: 12-16-2025

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ENGLISH NAME: ZHAO, XIAOBIN
CHINESE NAME: 赵晓斌
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: UNIVERSITY OF SOUTHERN CALIFORNIA

AGE: 34	**AREA OF EXPERTISE:** QUANTUM INFORMATION, QUANTUM OPTICS[1]
CHINESE UNIVERSITY: NORTHWESTERN POLYTECHNICAL UNIVERSITY	**PHD:** AMPLIFICATION, PURIFICATION, AND SUPERPOSITION OF ORDERS IN CONTINUOUS-VARIABLE SYSTEMS
U.S. UNIVERSITY LAB: ZHUANG GROUP, DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Zhao presents a high national-security risk because his research in quantum sensing, metrology, and communications directly supports technologies critical to next-generation military systems, including areas explicitly identified by the U.S. government as strategically sensitive. The risk is heightened by his funding from PRC state programs operating under military-civil fusion and his prior work with AVIC, a PLA-controlled defense conglomerate. Together, his advanced quantum expertise, PRC institutional ties, and exposure to U.S. research ecosystems create a credible pathway for technology transfer that could materially accelerate China's military capabilities.

DATE REVIEW COMPLETE: 12-11-2025

WHY THE RESEARCH IS CONCERNING:

Dr. Zhao is an expert in research that is critical to the capabilities of tomorrow's People's Liberation Army and poses a serious threat to U.S. technological dominance. Specifically, Zhao is an international expert in quantum technologies and if China gains an advantage in the quantum technologies where Zhao is working, it will significantly weaken core U.S. military advantages.

Zhao through his research at University of Hong Kong and University of Southern California has researched areas such as:[2]

- Quantum amplification and purification of noisy coherent states
- Experimental super-Heisenberg quantum metrology with indefinite casual order
- Heisenberg-limited metrology with coherent control configuration

Put more simply, these research areas have national security/military implications as they improve technology such as quantum sensing (navigation without GPS, submarine detection, intelligence, surveillance, reconnaissance), quantum communications and cryptography, and quantum radar/imaging (stealth aircraft, hidden object detection).

Next generation threats from quantum sensing could include allowing China to navigate precisely without GPS, detect submarines previously hidden, and conduct far more effective surveillance and reconnaissance. Quantum radar and imaging could expose U.S. stealth aircraft, undermining decades of investment in air-dominance platforms. Quantum communication and cryptography breakthroughs could enable unbreakable Chinese command-and-control networks while potentially allowing them to penetrate or bypass U.S. secure systems, fundamentally shifting the strategic balance.

The United States Government Fast Track Action Subcommittee on Critical and Emerging Technologies of the National Science and

Technology Council explicitly names quantum information and enabling technologies as part of its "Critical and Emerging Technologies List".[3] The report explains the threat as such:

> *"Critical and emerging technologies (CETs) are a subset of advanced technologies that are potentially significant to U.S. national security. The 2022 National Security Strategy identifies three national security interests: protect the security of the American people, expand economic prosperity and opportunity, and realize and defend the democratic values at the heart of the American way of life."*

Zhao and his research pose a threat to the security of the American people by potentially arming our chief political adversary, China, with expertise on quantum technologies which can be used to strengthen their military apparatus and threaten American technological superiority.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Before arriving in the United States, Zhao attended Northwestern Polytechnical University. This university is known as one of the "Seven Sons of National Defense" and is implicated in working with China's state-owned weapons manufacturers and defense conglomerates.[4] In 2021, a Chinese National was convicted of conspiracy to unlawfully export $100,000 of anti-submarine warfare products to Northwestern Polytechnical University.[5]

Zhao's lab at USC is run by Quntao Zhuang, a Chinese national who graduated from Peking University, a university explicitly identified as supporting the CCP's effort to bolster its military and intellectual strength.[6] [7] The lab focuses on quantum communication, sensing and computing applications.[8] Additionally, Zhao has worked on research projects which took funding from Chinese state institutions such as the National Science Foundation of China, Innovation Program for Quantum Science and Technology, and grants from Chinese Universities such as the University of Hong Kong.

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

In 2013, Zhao worked at the Aviation Industry Corporation of China (AVIC). AVIC was determined by the Department of War to be controlled by the People's Liberation Army.[9] This presents a serious risk of military-related technology transfer as Zhao has preexisting connections to a PLA controlled military oriented corporation.

RISK ASSESSMENT

High

Dr. Zhao is assessed as high risk because his expertise directly advances quantum technologies, such as quantum sensing, metrology, radar, and secure communications, that sit at the center of next-generation military power and strategic competition. His research strengthens capabilities that could nullify U.S. advantages in stealth, undersea warfare, navigation, and secure command-and-control systems, making it uniquely valuable to adversaries seeking asymmetric leverage. These risks are significantly amplified by his prior work at AVIC, a PLA-controlled defense conglomerate, his history of funding from Chinese state science agencies involved in military-civil fusion, and his work within a USC quantum lab led by a Chinese national trained at Peking University, an institution identified by Congress as supporting CCP military and intelligence goals. Collectively, this combination of critical dual-use technical expertise, direct historical ties to PLA-aligned entities, and ongoing proximity to U.S. quantum research presents a credible pathway by which sensitive knowledge could be transferred to the PRC, materially enhancing China's military modernization and undermining U.S. national security advantages.

DATE REVIEW COMPLETE: 12-11-2025

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ENGLISH NAME: CHEN, GUANGYAO
CHINESE NAME: 陈光耀
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: CORNELL UNIVERSITY

AGE: 29	**AREA OF EXPERTISE:** MULTIMODAL PERCEPTION, AGENTIC REASONING, AI FOR SCIENCE[1]
CHINESE UNIVERSITY: PEKING UNIVERSITY	**PHD:** COMPUTER SCIENCE
U.S. UNIVERSITY LAB: CORNELL UNIVERSITY AI FOR SCIENCE INST., W/ PROFESSOR FENGQI YOU	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Chen poses a high national-security and dual-use risk due to his expertise in adversarial machine learning, OOD detection, multimodal perception, and automated AI-agent generation—capabilities that can be used to evade U.S. AI-based defense and intelligence systems, mislead autonomous platforms, and enable coordinated cyber or disinformation operations. This risk is amplified by his training at Peking University, PRC government funding, and collaborations with PRC universities and Huawei, placing his work squarely within China's military-civil fusion ecosystem. Taken together, his technical focus and institutional ties create a credible pathway for transferring adversarial-AI knowledge that could be used to compromise or weaponize AI systems critical to U.S. national security.

DATE REVIEW COMPLETE: 12-09-2025

WHY THE RESEARCH IS CONCERNING:

Dr. Chen specializes in adversarial machine learning, out-of-distribution (OOD) detection, multimodal perception, and automated AI-agent generation—capabilities that directly affect the reliability and vulnerability of AI systems. In a paper titled "AutoAgents: A Framework for Automatic Agent Generation", which Chen was the lead author on, it speaks to this capacity for automated AI agents to directly affect the reliability of AI systems:

> "Unlike the previous two methods, AutoAgents places a heightened emphasis on the reliability of its generated agents and strategic plans, thereby enhancing task execution effect through the utilization of collaborative refinement actions and the integration of self-refinement actions , as illustrated in Table 1."[2]

This expertise and research focus is concerning because it equips Chen with highly transferable expertise in evading, subverting, and autonomously scaling AI systems, capabilities that the PRC explicitly seeks for military-civil fusion applications. In an article from the Hill, Sam Bresnick and Cole McFaul state:

> "We reviewed dozens of procurement documents published by the People's Liberation Army which reveal that the Chinese military is directly soliciting and using advanced U.S. chips, including those designed by Nvidia, to develop AI-enabled military capabilities.
> In addition, the PLA is deploying Chinese AI models trained using American hardware to advance its modernization and, eventually, gain a battlefield advantage over the U.S.
> These documents clearly state the PLA's intention to use Nvidia chips for a wide range of tasks.
> For example, one contract for an "intelligent optoelectronic target recognition system," which combines AI and sensors to automatically detect, identify and track militarily relevant objects, specifies the use of Nvidia computing resources."[3]

While the emphasis on the article is surrounding NVIDIA chip procurement by the CCP, the article speaks to the notion that those with artificial intelligence expertise will be highly valued by the CCP for their use in developing future military applications.

These techniques for adversarial open-set recognition, out-of-distribution detection, and model-boundary manipulation that Chen possesses can be directly repurposed to help an adversary bypass U.S. defense-AI perception systems, defeat autonomous-system safeguards, and inject undetected malicious inputs into intelligence or cybersecurity pipelines.
The United Kingdom Government has published an analysis detailing the "Cyber security risks to artificial intelligence" where they explicitly mention inadequate threat modeling being able to be poisoned:[4]

Vulnerability:	**Exploitation:**
Inadequate Threat Modelling (AI) - Insufficient identification of potential threats, vulnerabilities, and attack vectors in the AI system, leading to overlooking vulnerabilities and inadequate system design (Bradley, 2020; European Union Agency for Cybersecurity., 2020; Zhang et al., 2022).	Adversaries exploit unanticipated threats and attack surfaces, injecting poisoned data during data preparation or collection, impacting the model design phase (Bradley, 2020; Hu et al., 2021; Zhang et al., 2022).

At the same time, frameworks like AutoAgents dramatically lower the barrier to deploying autonomous, multi-agent AI systems capable of coordinated planning, cyber intrusion support, or automated information operations—capabilities China has openly prioritized for both military modernization and influence campaigns. A report from the National Institute of Standards and Technology states:[5]

> "Automated model-based red teaming employs an attacker model, a target model, and a judge [73, 239, 292]. When the attacker has access to a high-quality classifier that judges whether model output is harmful, it may be used as a reward function to train a generative model to generate jailbreaks of another generative model. Only query access is required for each of the models, and no human intervention is required to update or refine a candidate jailbreak. The prompts may also be transferable from the target model to other closed-source LLMs"

This speaks to the risk of the expertise of someone with AutoAgents knowledge transferring it to China.

If this expertise were transferred to the PRC's defense or intelligence ecosystem, it could materially enhance China's ability to identify vulnerabilities in Western AI systems, build more resilient offensive AI tools, and automate campaigns that target U.S. infrastructures, platforms, and decision-making processes. The combination of adversarial AI research and scalable agent-generation technology makes this knowledge particularly sensitive and clearly dual-use in ways that pose elevated national security risks.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Chen got his PhD at Peking University has been identified by the Select Committee on the Chinese Communist Party as helping to bolster China's military and intelligence-gathering capabilities.[6] The Committee explained: [7]

> The **CCP's** Military-Civil Fusion strategy aims to integrate civilian and military sectors across various domains, including higher education. Although the PRC state could require all of the PRC 3,000 higher education institutions to participate in Military-Civil Fusion, some universities are more deeply integrated with military and defense activities than others. The categories below aim to illustrate the spectrum of military involvement in China's university system.
> ...
> Category 3: SASTIND Co-Supervised Universities: These universities are co-supervised by the State Administration for Science, Technology and Industry for National Defense (SASTIND), an arm of the Chinese government whose stated purposes include "strengthen[ing] military forces with additional personnel and more advanced equipment" and which seeks to leverage these universities for defense purposes. This category includes about 60 top national universities like Tsinghua and Peking University, as well as some provincial institutions.

Additionally, Chen has worked on research funded in part by the National Key R&D Program of China, and the National Natural Science Foundation of China. Further, Chen worked on research sponsored by "The Industry Alignment Fund-Industry Collaboration Projects (IAF-ICP)".[8] The IAF-ICP is a strategic R&D collaboration within Singapore, awarded to researchers with proposals that are deemed to have potential positive economic impact and relevance to building up Singapore's R&D ecosystem.[9]

Chen's[10] top co-authors are Fengqi You (his mentor at Cornell, research on Data Science, Machine Learning)[11], Ruixuan Li (Huazhong University of Science and Technology, research on Peer-To-Peer Networks, Network Security, Cloud Computing)[12], Mengyue Geng (Peking University, research on Feature Extraction, Computer Vision)[13], Wayne Zhang (Chinese University of Hong Kong, research on Machine Learning, Pattern Recognition, Neural Networks and Artificial Intelligence)[14], Lin Du (HuaWei Technology, research on Computer Vision, Object Recognition, Machine Learning).[15]

RISK ASSESSMENT

High

Dr. Chen is high risk because his core expertise—adversarial machine learning, OOD detection, multimodal perception, and automated AI-agent generation—directly enables the subversion, evasion, and exploitation of AI systems that underpin U.S. defense, intelligence, cybersecurity, and autonomous platforms. His methods can be used to bypass AI-driven threat-detection systems, mislead autonomous sensors, and generate coordinated AI agents capable of supporting cyber intrusions or disinformation operations—capabilities the PRC explicitly seeks for military-civil fusion. These technical risks are magnified by his academic training at Peking University and collaborations with PRC-affiliated researchers and Huawei personnel, as well as his participation in research funded by Chinese national research programs that support strategic technology development. Combined with his integration into a U.S. research environment and proximity to federally funded AI work through his mentor's lab, Chen represents a credible vector through which sensitive adversarial-AI knowledge could be transferred to the PRC, strengthening China's military and intelligence capabilities and undermining U.S. national security.

DATE REVIEW COMPLETE: 12-09-2025

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ENGLISH NAME: CHEN, XIAOYI
CHINESE NAME: 陈潇漪
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: INDIANA UNIVERSITY

AGE: 31	**AREA OF EXPERTISE:** LLM PRIVACY, BACKDOOR ATTACKS & DEFENSES, AI FOR WEB SECURITY[1]
CHINESE UNIVERSITY: PEKING UNIVERSITY	**PHD:** COMPUTER SOFTWARE AND THEORY
U.S. UNIVERSITY LAB: LUDDY SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING, WORKING W/ PROFS, HAIXU TANG & XIAOFENG WANG	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Chen poses serious national security concerns. Her research presents notable dual-use and national-security concerns due to her specialization in AI machine-learning security and backdoor attacks. Further she has academic ties to PRC institutions with documented links to China's military and intelligence ecosystem, and she received funding from the Chinese Government during her time at Peking University. Raising extreme concern is the fact her mentor in the U.S. at IU, recently had his house raided by the FBI.

DATE REVIEW COMPLETE: 12-09-2025

WHY THE RESEARCH IS CONCERNING:

Chen in her time at Peking and the United States has focused her research on cyber security with an interest in AI. She has published a defensive paper on textual backdoor attacks and multiple *offensive* oriented backdoor attack papers, one in 2021 against natural language processing (NLP) models, and a second in 2023 also against NLP's.[2]

These NLP backdoor-attack papers describe *offensive* techniques for covertly sabotaging AI systems by poisoning their training data or embedding hidden triggers that cause the model to behave incorrectly only under very specific conditions. Because the triggers are semantically natural, clean-label, or nearly invisible to human reviewers, these attacks are difficult to detect and can persist even after substantial retraining. In a national-security context, that means an adversary with access to data pipelines, model-training workflows, open-source corpora, or fine-tuning stages could implant backdoors that quietly compromise AI systems used for intelligence analysis, threat detection, cyber defense, diplomatic translation, misinformation filtering, or automated decision support.

This risk is immediate; these papers describe methods that work with extremely small amounts of poisoned data (sometimes as little as 1–3 percent) and achieve near-perfect attack success rates while leaving the model's normal performance intact, making them ideal for stealthy long-term subversion.
In the wrong hands, expertise in clean-label NLP backdoors could be applied to compromise sensitive systems, plant persistent vulnerabilities, or help an adversarial state better understand how to corrupt Western AI models while avoiding detection.

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Chen attended Peking University for her PhD, which has been identified by the Select Committee on the Chinese Communist Party as helping to bolster China's military and intelligence-gathering capabilities.[3] Additionally, some of her research in

China has been funded by Chinese state institutions such as the National Science Foundation of China.[4]

Meanwhile, The NSA and other U.S. Government agencies have warned against the specific threats posed by Chinese entities towards critical infrastructure organizations.[5]

Finally, one of her listed mentors, XiaoFeng Wang, was terminated from Indiana in March 2025 under undisclosed circumstances and raided by the FBI on the same day.[6] [7] Feng attended Nanjing University for his Bachelors and Shanghai Jiao Tong University for his Masters. Shanghai Jiao Tong University has been identified by the Select Committee on the Chinese Communist Party as helping bolster China's military and intelligence-gathering capabilities.[8]

RISK ASSESSMENT

High

Dr. Chen is an expert on offensive AI backdoor attacks, methods that enable covert, persistent manipulation of machine-learning systems with minimal data poisoning and virtually no detectable footprint, capabilities that directly threaten U.S. intelligence, cyber defense, and critical-infrastructure AI pipelines. These technical risks are compounded by her training and funding ties to Peking University and other PRC institutions identified by Congress as supporting China's military and intelligence apparatus, as well as her association with mentors linked to FBI scrutiny and Chinese universities of concern. Taken together, her highly transferable offensive AI skillset and her institutional affiliations create a clear counterintelligence concern: she possesses the knowledge and background needed to assist the PRC in subverting or compromising U.S. AI systems, a priority area for Chinese cyber and intelligence operations.

DATE REVIEW COMPLETE: 12-09-2025

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ENGLISH NAME: XIANGWEI GUO
CHINESE NAME: 郭相伟
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: UW MADISON

AGE: 33	**AREA OF EXPERTISE:** MATERIALS ENGINEERING
CHINESE UNIVERSITY: ZHEJIANG UNIVERSITY, CHINESE ACADEMY OF SCINECES, UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA	**PHD:** MATERIAL PHYSICS AND CHEMISTRY
U.S. UNIVERSITY LAB: MESOSCALE COMPUTATIONAL GROUP	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Guo was one of three Chinese nationals that made up the postdoctoral researchers in the Mesoscale Computational Group at UW Madison.[1] This group is working towards material advancement in technology that could help develop next-gen semiconductors. Additionally, Guo attended a university in China known to work directly on defense applications. Guo's research is part of a real concern that the Chinese could overtake the United States in critical technology like semiconductors making Dr, Guo a high-risk visa holder.

DATE REVIEW COMPLETE: 12-16-2025

WHY THE RESEARCH IS CONCERNING:

The Mesoscale Computational Group studies how material structure changes under stress from sources like heat, stress, electricity, and other environmental conditions.[2] This research can have a direct impact on our military by advancing next-gen semiconductor technology.[3] As noted by *Microchip USA*, military-grade chips "must operate in conditions that would cripple consumer hardware: extreme temperatures, intense vibration, and even radiation exposure."[4] The Mesoscale Computational Group also utilizes advanced tools like AI (machine learning tools) to further their studies. Guo has worked on research with support from the Army Research Office, Air Force Office of Scientific Research, and DARPA.

SPECIFIC ADDITIONAL RESEARCH FINDINGS THAT RAISE CONCERNS

While Guo has worked on projects supported by U.S. defense interests, most of his funding support has come from Chinese laboratories and programs like the National Natural Science Foundation of China.[5] The National Natural Science Foundation of China is run by the Ministry of Science and Technology, a CCP controlled entity.[6]

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

The Mesoscale Computational Group's professor and postdoctoral researchers are all from high-risk Chinese universities. Professor Jiamian Hu and Yujie Zhu (fellow postdoctoral researcher) received their PHD's from Tsinghua University, a known defense collaborator and CCP hot bed.[7] Fellow researcher, Zebin Li, graduated with a MS from the Beijing Institute of Nanoenergy and Nanosystems (BINN), a university flagged as problematic by the House Select Committee on the CCP.[8] BINN is controlled by the state-run Chinese Academy of Sciences (CAS).[9] CAS has been implicated in military technology breakthroughs in high-yield explosives and nuclear weapons developments in China.[10] Guo himself attended Zhejiang University, a school with close ties to China's defense industry.[11] In May 2025, it was

reported Zhejiang University had developed stealth technology capable of evading a proposed U.S. missile defense system.[12]

NOTABLE FEDERAL SUPPORT

- **ARO:** The Army Research Office supported research Dr. Guo contributed to on non-volatile electric-field control of inversion symmetry.[13] This research is of interest to the Army because it provides a blueprint on how to produce smaller, faster, and more energy-efficient electronics that can survive harsh environments that current silicon technology cannot.
- **AFOSR:** The same paper supported by ARO from above was also supported by the Air Force Office of Scientific Research.[1] The Air Force is also interested in upgrading electronics materials to make them more durable under the harshest conditions.
- **DARPA:** Research on solitons by Guo was supported by the Defense Advanced Research Projects Agency.[14] This research opens the possibility for a new generation of super-fast, compact, and energy-efficient computer chips.

RISK ASSESSMENT

High

Dr. Guo's work on technology that could lead to significant technological advancements in national security and defense applications make him a high-risk visa holder. Combined with his field of study, Guo and his fellow research team's Chinese education background make them a massive national security liability in the United States. Guo likely received new insights from work supported by U.S. defense entities like DARPA, AFOSR, and the ARO that can now be brought to China.

DATE REVIEW COMPLETE: 12-11-2025

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ENGLISH NAME: Xianyang Bao
CHINESE NAME: 鲍先扬
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: HARVARD UNIVERSITY

AGE: 37	**AREA OF EXPERTISE:** POLYMER MECHANICS
CHINESE UNIVERSITY: WUHAN UNIVERSITY	**PHD:** INDUSTRIAL ENGINEERING
U.S. UNIVERSITY LAB: SUO GROUP, MECHANICS OF MATERIALS AND STRUCTURES	**TITLE AT U.S. LAB:** POSTDOCTORAL FELLOW

EXECUTIVE SUMMARY: Militaries are incredibly dependent on polymers, whether they be rubber parts or personal protective equipment, and the ability to make these products more resilient and less prone to fatigue and failure is a significant force multiplier. Dr. Xianyang Boa is a leading expert in developing these technologies. Bao has obtained a placement at the Suo Group at Harvard, a leading research institute in the study of polymers, and one with a long history of cooperation with and funding from the U.S. military labs. This close connection gives him access to insights into U.S. research priorities and military science and technology researchers and planners.

DATE REVIEW COMPLETE: 12-15-2025

WHY THE RESEARCH IS CONCERNING:

While research into cutting edge rubber polymers may not be as sensational as research into areas like Artificial Intelligence or quantum computing, for militaries that regularly operate in harsh environments with materiel composed of polymer based parts prone to fatigue and failure, improving the durability and resiliency of polymers can provide a decisive and critical advantage. Dr. Bao is a world leading expert in research into those types of materials. Specifically his expertise is in imporving the durability and robustness of rubbers. Harvard recently published an article highlighting his work:[1]

> "Improving crack resistance will extend the material's service lifetime and therefore improve its sustainability," said first author and former SEAS postdoctoral researcher Guodong Nian.
>
> Natural rubber is a durable polymer material that's in too many products to count: gloves, tires, shoes, medical devices, conveyor belts.
>
> … Their results blew away their expectations, said paper co-first author Zheqi Chen, a former SEAS postdoctoral researcher. The rubber became four times better at resisting slow crack growth during repeated stretching. It became 10 times tougher overall.
>
> … The paper was co-authored by Xianyang Bao (co-first) and Matthew Wei Ming Tan. The research had federal support from the National Science Foundation under the Materials Research Science and Engineering Centers (DMR-2011754) and the Air Force Office of Scientific Research under award No. GA9550-20-1-0397.

The military applications of this technology are obvious from aircraft to protective materials to transport vehicles, rubber less prone to fatigue can reduce failure and enhance operational capabilities.

Unfortunately, the United States Air Force Office of Scientific Research has been funding the research of a foreign national from China a nation with a lengthy history of stealing technology and a hostile posture towards the United States.

NOTABLE FEDERAL DEFENSE SUPPORT

Despite him being a foreign national from a hostile country, Dr Bao's research has been directly funded by the United States military.

- **Air Force Office of Scientific Research:** Two recent papers in which Dr. Bao is an author acknowledge the support of the AFOSR. The recent article "Unusually Long Polymers Crosslinked by Domains of Physical Bonds," of which Dr. Bao is the lead author, notes, "This work was supported by the National Science Foundation under MRSEC (DMR-2011754). **Z.S. acknowledges the support of the Air Force Office of Scientific Research under award number FA9550-20-1-0397.** M.W.M.T. gratefully acknowledges the financial support under the College of Engineering (CoE) International Postdoctoral Fellowship (IPF), which is jointly provided by the Ministry of Education, Singapore, and Nanyang Technological University, Singapore." Z.S. is Zhigang Suo, Bao's lab supervisor and the namesake of the lab in which Bao work, and through who the Air Force research funding would have flowed for this project.
- As noted above, funding from the Air Force also underwrote an additional research project in which Bao was a lead. The scholarly journal article, "Natural rubber with high resistance to crack growth" notes, similarly, "This work was supported by the National Science Foundation under MRSEC (DMR-2011754). **Z.S. acknowledges the support of the Air Force Office of Scientific Research under award number FA9550-20-1-0397.**"[2]

In addition to Bao's work and publishing being supported by the Air Force, the lab in which Bao works, the Suo Group, has a long history of receiving United States military research support going back decades. This is important because the lab will have developed strong relationships with funding agencies, providing access and understand of the U.S. military research priorities. Additionally the lab is relatively small, listing only six researchers,[3] indicating Bao will have close

relationship with the leadership of the lab who is receiving defense funding and working with the U.S. military.

- **2025:** "Polymers Resist Fatigue Crack Growth by Deconcentrating Stress Jason Steck, Christine Heera Ahn, and Zhigang Suo" [4] ACKNOWLEDGMENTS: This work was supported by the National Science Foundation (NSF) through the Harvard University Materials Research Science and Engineering Center (grant DMR-2011754) and by the **Air Force Office of Scientific Research** under award number FA9550-20-1-0397. J.S. and C.H.A. were supported by NSF Graduate Research Fellowships (grant DGE1745303).
- **2025:** "Why is the strength of a polymer network so low?"[5] Shaswat Mohantya, Jose Blanchet, Zhigang Suo, Wei Caia,* Acknowledgements: S.M. and W.C. acknowledge support from the Precourt Pioneering Project of Stanford University. S.M., J.B., Z.S., and W.C. acknowledge support from the **Air Force Office of Scientific Research** under award number FA9550-20-1-0397.
- **2025:** "How does a polymer glass resist fatigue crack growth?†"[6] Christine Heera Ahn, Zheqi Chen, Xianyang Bao and Zhigang Suo. Acknowledgements "This work is supported by NSF through the Harvard University Materials Research Science and Engineering Center (DMR2011754) and by the **Air Force Office of Scientific Research** (FA9550-20-1-0397). C. H. A. was supported by the NSF Graduate Research Fellowship (DGE1745303)."
- **2024:** "Non-faradaic junction sensing"[7] Yecheng Wang , Kun Jia & Zhigang Suo Acknowledgements Y.W. acknowledges the support of NSFC (12302225). K.J. acknowledges the support of NSFC (81974470). Z.S. acknowledges the support of the NSF through the Harvard University Materials Research Science and Engineering Center (DMR2011754) and the support of the **Air Force Office of Scientific Research** (FA9550-20-1-0397).
- **2012:** "Highly stretchable and tough hydrogels"[8] **The work at Harvard was supported by ARO (W911NF-09-1-0476),** NSF (CMMI-0800161), **DARPA (W911NF-10-1-0113),** NIH (R37 DE013033) and MRSEC (DMR-0820484). X.Z. acknowledges the support of the NSF Research Triangle MRSEC (DMR-1121107)

and Haythornthwaite Research Initiation grants. K.H.O. is supported by the National Research Foundation of Korea (NRF), funded by the Ministry of Education, Science and Technology (R11-2005-065). Z.S. acknowledges a sabbatical leave at the Karlsruhe Institute of Technology funded by the Alexander von Humboldt Award and by Harvard University."

- **2010:** "Theory of Dielectric Elastomers Capable of Giant Deformation of Actuation"[9] Xuanhe Zhao and Zhigang Suo "This work is supported by NSF through a grant on Soft Active Materials (CMMI-0800161), **by DARPA through a contract on Programmable Matter (W911NF-08- 1-0143)**, and by the Kavli Institute at Harvard University."
- **2008:** A theory of coupled diffusion and large deformation in polymeric gels [10] "**This research was supported by the Army Research Office through Contract W911NF-04-1-0170,** and by the National Science Foundation through the MRSEC at Harvard University. Visits of Z.S. to the Institute of Process Engineering, of Chinese Academy of Sciences, have been supported by a project entitled Research Collaboration on Multi-Scale Science of Complex Systems."

RISK ASSESSMENT

High

The United States military and Chinese military are dependent on various polymers that are ubiquitous and diversely integrated throughout their forces. Marginal improvements in such a broadly integrated area of military technology could have profound impacts on warfighting through more effective protective gear or parts on machinery that are less prone to failure in the field. Dr. Bao's research in this area is clearly of high utility evidenced by the fact that the Air Force Office of Scientific Research has supported research in this area. The opportunity for Dr. Bao to take the research expertise cultivated at Harvard and take it back to China for used in their military development.

DATE REVIEW COMPLETE: 12-18-2025

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ENGLISH NAME: ZIANG YU
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: UW-MADISON

AGE: 31	**AREA OF EXPERTISE:** NUCLEAR ENERGY
CHINESE UNIVERSITY: NORTHWESTERN POLYTECHNICAL UNIVERSITY	**PHD:** ENGINEERING PHYSICS
U.S. UNIVERSITY LAB: MICROSTRUCTURAL MATERIALS MODELING	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCH ASSOCIATE

EXECUTIVE SUMMARY: Dr. Yu's research presents serious national security risks as he has worked on research funded directly by the United States' top nuclear research organizations, including direct research support from the National Nuclear Security Administration, the agency responsible for America's nuclear weapons. Additionally, Yu presents security concerns as a graduate of Northwestern Polytechnical University, a known collaborator of the People's Liberation Army and one of the Seven Sons of Defense in China.

DATE REVIEW COMPLETE: 12-03-2025

WHY THE RESEARCH IS CONCERNING:

Research conducted by the Microstructural Materials Modeling division at the University of Wisconsin-Madison focuses on how advanced materials behave under extreme conditions like irradiation. [1] Within that department Dr. Yu works in the Zhang lab led by Dr. Yongfeng Zhang.[2] This work directly supports defense applications for more resilient materials for nuclear-powered submarines, space nuclear propulsion, hypersonic vehicles, missiles, and aircraft engines. The Chinese exploitation of U.S. nuclear research was recently highlighted by the Select Committee on China. The committee stated that federal funds went to "research collaborations with Chinese state-owned laboratories and universities that work directly for China's military."[3] The report specifically highlighted the role China's "Seven Sons of National Defense" play in these research collaborations.[4]

SPECIFIC ADDITIONAL RESEARCH FINDINGS THAT RAISE CONCERNS

The Microstructural Materials Modeling lab is led by professor Yongfeng Zhang. [5] Zhang is currently a senior member of the Center for Thermal Energy Transport under Irradiation (TETI), a project of the Idaho National Laboratory. The project aims to design next-generation nuclear fuels that can withstand unprecedented temperatures. [6]

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

Before arriving in the United States, Yu attended Northwestern Polytechnical University. This university is known as one of the "Seven Sons of National Defense" and is implicated in working with China's state-owned weapons manufacturers and defense conglomerates. [7] In 2021, a Chinese National was convicted of conspiracy to unlawfully export $100,000 of anti-submarine warfare products to Northwestern Polytechnical University. [8]

NOTABLE FEDERAL DEFENSE SUPPORT

- **NNSA:** Yu's research is directly supported by the National Nuclear Security Administration, the agency responsible for

the stewardship of America's nuclear weapons. In Yu's journal article, "Impact of chemical ordering on thermodynamic properties of point defects and Xe substitutional in U-10Mo" he notes, "This work was supported by the U.S. Department of Energy, Office of Material Management and Minimization, National Nuclear Security Administration"[9]

- **INL:** The lab is also funded by the Idaho National Laboratory, the leading nuclear research laboratory in the United States.[10] This laboratory works on projects ranging from building mobile nuclear reactors to testing nuclear power sources for space missions. [11]
- **USNRC:** In addition to the INL and NNSA, the lab is also funded by the Nuclear Regulatory Commission.[12] The USNRC is a body designed to safeguard people and the environment from the hazards associated with nuclear energy. [13]

RISK ASSESSMENT

High

As a leading researcher in engineering physics with close ties to several critical nuclear research organizations, Dr. Yu poses an immediate threat to U.S. security. Dr. Yu's attendance of one of China's leading defense universities only raises further concerns. Dr. Yu should be immediately removed from the United States as his presence is a direct threat to the operational security of U.S. nuclear research.

DATE REVIEW COMPLETE: 10-29-2025

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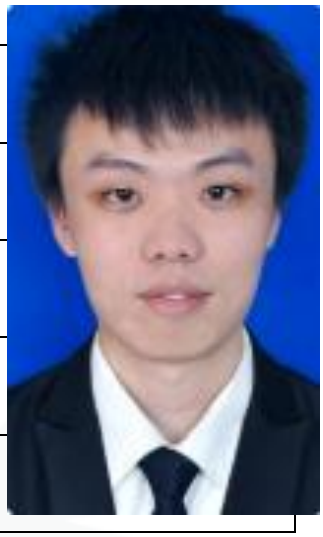

ENGLISH NAME: GE CHEN
CHINESE NAME: 陈戈
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: PURDUE UNIVERSITY

AGE: 33	**AREA OF EXPERTISE:** SMART GRID ENERGY SYSTEMS
CHINESE UNIVERSITY: UNIVERSITY OF MACAO, XI'AN JIAOTONG UNIVERSITY, HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY	**PHD:** ELECTRIC AND COMPUTER ENGINEERING
U.S. UNIVERSITY LAB: ELMORE FAMILY SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Chen's presence in the United States was and continues to be a significant risk to national security as his work could have direct implications on the security of U.S. defense systems and the power grid. Dr. Chen's work in computer engineering in a department partnered with multiple defense entities like the Air Force and Navy poses significant risks to U.S. cyber security. Concerningly, Chen also has known ties to China's defense industry and his mentor has known associations with the CCP.

DATE REVIEW COMPLETE: 12-15-2025

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

Dr. Chen attended the University of Macao, Huazhong University of Science and Technology, and Xi'an Jiaotong University. All these universities have exhibited red flags in recent years regarding spying and working with the PLA and CCP. In 2025, several Chinese nationals from Huazhong were arrested in an investigation surrounding the smuggling of biological materials into the University of Michigan. [1] Huazhong University has been identified as a high-risk entity known for intelligence gathering by the House Select Committee on the CCP.[2] Xi'an Jiaotong University has been identified by the Australian Strategic Policy Institute as a Chinese defense collaborator who works directly on China's Rocket Force program.[3] China's Rocket Force Program is administered by the People's Liberation Army and is responsible for China's land-based nuclear and conventional missile forces.[4]

Chen's most recent alma matter, University of Macao, has been accused of shifting its allegiance towards the CCP since Yonghua Song (his mentor) took over.[5] *Macao Business* reported that "academic freedom was further eroded" when pro-government leaders took over the University of Macao.[6] The same *Macao Business* article also covered accusations that scholars at the university were warned about discussing political issues under Yonghua Song's tenure.[7]

SPECIFIC ADDITIONAL RESEARCH FINDINGS THAT RAISE CONCERNS

Dr. Chen lists Yonghua Song as his mentor from his time at the University of Macao.[8] Song has appeared on CCTV (China's central government broadcasting services),[9] corresponded with Xi Jinping,[10] and interviewed with the Communist Party Member Network.[11] Song has obtained high ranking positions at universities throughout China, including Tsinghua University, Xi'an Jiatong University, Zhejiang University and is currently leading the University of Macao.[12] Tsinghua has grown a reputation as a breeding ground for young CCP elites (also linked to defense industry),[13] and Xi'an Jiatong University is known to work directly with the PLA,[14] and Zhejian University is

known as a Chinese military university.[15] [16] Most concerningly, Song was known to run a Chinese agency known to commit intellectual property theft (director of the Chinese National Office of Recruitment Programme of Global Experts).[17] Chinese foreign talent plans run by that office incentivize its members to steal foreign technologies needed to advance China's national, military, and economic goals.[18]

WHY THE RESEARCH IS CONCERNING:

Dr. Chen's research focuses on smart energy systems and AI-Driven optimization for power systems. This research is key to strengthening critical infrastructure like power grids in the United States. This research focuses on using AI to strengthen these systems which could cause vulnerabilities to cyber-attacks and adversarial AI (attack on critical infrastructure using our own AI or an adversarial version).[19] Dr. Chen works in the Elmore Family School of Electrical and Computer Engineering. This department of Purdue is currently partnered with Sandia National Laboratories, the National Security Agency, Naval Sea Systems Command, and the Air Force Research Laboratory.[20]

NOTABLE FEDERAL SUPPORT

Purdue's Electrical and Computer Engineering department is rife with partnerships with national security researchers, faculty and students, giving Chen an ideal opportunity to develop relationships with faculty and students that could benefit the PRC.

- **AFRL:** The Elmore Family School of Electrical and Computer Engineering is partnered with the Air Force Research Laboratory.[21] The AFRL is the primary research and development center for the U.S. Air Force and Dr. Chen's work could directly impact warfighting technologies for air, space, and cyber forces.[22]
- **NSA:** The department is partnered with the National Security Agency.[23] The NSA is known to focus a significant amount of its efforts on cybersecurity. Dr. Chen's background in computer engineering could be a valuable

tool in undermining cybersecurity measures as he returns to China.

- **NAVSEA:** The Elmore Family School is also partnered with the Naval Sea Systems Command, a division of the Navy.[24] The Naval Surface Warfare Center Crane (a part of NAVSEA) recently announced an AI partnership with Purdue University.[25] Dr. Chen may get access to sensitive research conducted by this program as part of his affiliation with the Elmore Family School.
- **SNL:** Elmore is partnered with Sandia National Laboratories, a U.S. government contractor that focuses national security issues like nuclear weapons stewardship.[26] Dr. Chen having any background on research efforts funded by Sandia would bring up grave national security concerns.

RISK ASSESSMENT

High

As a leading researcher in smart grid and artificial intelligence, Dr. Chen poses a significant risk to the safety of the technology infrastructure of the U.S. power grid and to military defense systems. Further, Chen's prior history with Chinese defense/intelligence gathering universities, as well as his mentor's relationship with the CCP made him a high-risk U.S. visa holder. Dr. Chen should never have been allowed access into the country.

DATE REVIEW COMPLETE: 12-11-2025

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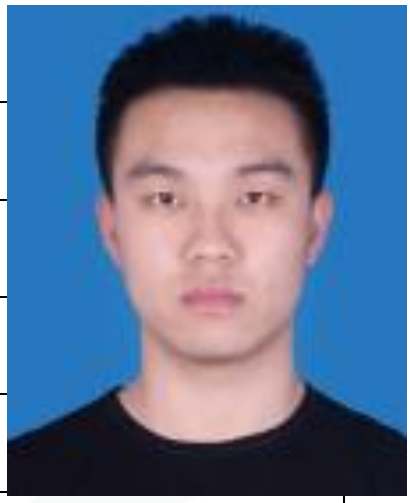

ENGLISH NAME: ZEBIN LI
CHINESE NAME: 李泽斌
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: UW MADISON

AGE: 31	**AREA OF EXPERTISE:** MATERIALS ENGINEERING
CHINESE UNIVERSITY: BEIJING INSTITUTE OF NANOENERGY AND NANOSYSTEMS, SICHUAN UNIVERSITY	**PHD:** INDUSTRIAL AND SYSTEMS ENGINEERING
U.S. UNIVERSITY LAB: MESOSCALE COMPUTATIONAL GROUP	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: During his time in the United States, Dr. Li has been part of a postdoctoral research team made up entirely of Chinese nationals. This group is working towards material advancement in technology that could help develop next-gen semiconductors. Additionally, Dr. Li attended a university in China directly controlled by the Chinese government. Also concerning, Dr. Li has participated in one of China's talent programs which are notorious for espionage and intellectual property theft activities. The U.S. cannot allow a high-risk researcher like Dr. Li into the country.

DATE REVIEW COMPLETE: 12-18-2025

WHY THE RESEARCH IS CONCERNING:

The Mesoscale Computational Group studies how material structure changes under stress from sources like heat, electricity, and other environmental conditions.[1] Dr. Li's expertise is in 3D printing and 2D materials which have direct implications on military lethality and readiness. The Department of War has adopted an additive manufacturing (3D printing) strategy that will "enable innovation" and "enhance warfighting readiness."[2] Dr. Li's work on 2D materials also extends into military applications with the work having great potential in the development of energy storage devices, sensors, and weapon systems.[3]

SPECIFIC ADDITIONAL RESEARCH FINDINGS THAT RAISE CONCERNS

Dr. Li research has received funding from the National Key R & D Project, National Science Foundation of China, and China's Thousand Talent's Program.[4] Dr. Li is the author of the scholarly "Triboelectrification-enabled thin-film tactile matrix for self-powered high-resolution imaging" which notes,

> This research was supported by the National Key R & D Project from Ministry of Science and Technology, China (Grant No. 2016YFA0202701 and 2016YFA0202703), National Science Foundation of China (Grant No. 51572030 and 51675069), Natural Science Foundation of Beijing Municipality (Grant No. 2162047) **and China Thousand Talents Program.**

The National Key R & D Project and National Natural Science Foundation of China are run by the Ministry of Science and Technology, a state-controlled entity.[5] In 2023, China even moved the Ministry of Science and Technology into a new centralized decision-making body that would report directly to the CCP.[6]

Most concerningly, the Thousand Talents program is known to encourage intellectual property theft and espionage.[7] The House Select Committee on the CCP even flagged a Chinese researcher who had participated in the same type of talent program as Dr. Li (researcher 4) and noted the risk that the program entails to U.S. information security.[8] The Thousands Talents Program is

so infamous for intellectual property theft that the Committee on Homeland Security and Governmental Affairs wrote an entire report on the program. The committee noted that federal agencies "discovered talent recruitment plan members who downloaded sensitive electronic research files before leaving to return to China."[9]

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

The Mesoscale Computational Group's professor and postdoctoral researchers are all from high-risk Chinese universities. Professor Jiamian Hu and Yujie Zhu (fellow postdoctoral researcher) received their PHD's from Tsinghua University, a known defense collaborator and CCP hot bed.[10] Fellow researcher, Xiangwei Guo attended Zhejiang University, a school with close ties to China's defense industry.[11] In May 2025, it was reported Zhejiang University had developed stealth technology capable of evading a proposed U.S. missile defense system.[12] Zebin Li, graduated with a MS from the Beijing Institute of Nanoenergy and Nanosystems (BINN), a university flagged as problematic by the House Select Committee on the CCP.[13] BINN is controlled by the state-run Chinese Academy of Sciences (CAS).[14] CAS has been implicated in military technology breakthroughs in high-yield explosives and nuclear weapons developments in China.[15]

NOTABLE FEDERAL SUPPORT

- **NSF:** Several of Dr. Li's projects have been funded by grants from the U.S. National Science Foundation. The research papers supported by NSF specifically focus on advancing high-precision 3D printing.[16]

RISK ASSESSMENT

High

Dr. Li's work on technology that could lead to significant technological advancements in national security and defense applications make him a high-risk visa holder. Combined with his field of study, Zhu and his fellow research team's Chinese university background make them a massive national security liability in the United States. Dr. Li likely received new

insights from work supported by the National Science Foundation. Dr. Li's work on advancements in 3D printing technology could have profound impacts on military readiness capabilities in the future.
DATE REVIEW COMPLETE: 12-11-2025

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ENGLISH NAME: Yujie Zhu
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: UW Madison

AGE: 30	**AREA OF EXPERTISE:** MATERIALS SCIENCE, ENREGY, AND APPLIED PHYSICS
CHINESE UNIVERSITY: TSINHGUA UNIVERSITY, NORTH CHINA ELECTRIC POWER UNIVERSITY	**PHD:** ELECTRICAL ENGINEERING
U.S. UNIVERSITY LAB: MESOSCALE COMPUTATIONAL GROUP	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: During his time in the United States, Dr. Zhu has been part of a postdoctoral research team made up entirely of Chinese nationals. This group is working towards material advancement in technology that could help develop next-gen semiconductors and advanced materials. Additionally, Dr. Zhu attended a university in China known to work on defense applications and have close ties to the CCP. The U.S. cannot allow high-risk researchers like Dr. Zhu into the country.

DATE REVIEW COMPLETE: 12-16-2025

WHY THE RESEARCH IS CONCERNING:

The Mesoscale Computational Group studies material structure changes under stress from sources like heat, electricity, and other environmental conditions.[1] Dr. Zhu specializes in the research of understanding and improving the performance of electronic and energy-related materials. Zhu's research has the capability of allowing further defense capabilities by pushing the limits of durability by allowing electronics to handle significantly more heat. *Fusion Worldwide* noted that reliable electronics are "essential in the aerospace and defense industry."[2] Furthering the importance of his research, Dr. Zhu has been supported by the U.S. Office of Naval Research, [3] the Department of Energy,[4] the National Science Foundation, and the Air Force Research Laboratory.[5]

SPECIFIC ADDITIONAL RESEARCH FINDINGS THAT RAISE CONCERNS

Dr. Zhu has received funding from the National Science Foundation of China.[6] The National Natural Science Foundation of China is run by the Ministry of Science and Technology, a CCP controlled government entity.[7]

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

The Mesoscale Computational Group's professor and postdoctoral researchers are all from high-risk Chinese universities. Professor Jiamian Hu and Yujie Zhu received their PHD's from Tsinghua University, a Chinese defense collaborator [8] known to groom young CCP elites.[9] Fellow researcher, Xiangwei Guo attended Zhejiang University, also a school with close ties to China's defense industry.[10] Underscoring Zhejiang's close relationship with the PLA's defense industry, in May 2025, it was reported Zhejiang University had developed stealth technology capable of evading a proposed U.S. missile defense system.[11] Rounding out the postdoctoral research team is Zebin Li, who graduated with an MS from the Beijing Institute of Nanoenergy and Nanosystems. The Beijing Institute of Nanoenergy and Nanosystems (BINN) has been flagged as problematic by the House Select Committee on the CCP.[12] BINN is controlled by the state-run Chinese Academy of Sciences (CAS).[13] CAS has been

implicated in military technology breakthroughs in high-yield explosives and nuclear weapons developments in China.[14]

NOTABLE FEDERAL SUPPORT

Dr. Zhu's research has put him in partnership with researchers directly funded by United States military research laboratories.

- **NSF:** Dr. Zhu has conducted research supported by the U.S. National Science Foundation.[15] The research paper in question (*Dynamical Phase-Field Model of Cavity Electromagnonic Systems)* discusses magnons, the possible replacement to typical electron powered signals.[16] This technology generates almost no heat and could lead to longer lasting batteries.
- **ONR:** The same paper's research was funded by NSF was also supported by the Office of Naval Research.[17] ONR has interest in the coherent interaction in cavity systems as this research can further sensitive measurement technologies. Sensitive measurement technologies can be used for submarines, surveillance, or for the detection of submarines. [18]
- **AFRL:** The Air Force Research Laboratory supported the same paper as ONR for the same navigational and surveillance technological advancements.[19]
- **DOE:** The Department of Energy supported two research papers from Dr. Zhu (including the paper supported by NSF, ONR, and AFRL from above).[20] The other paper supported by DOE conducted research into how external electric fields can be used to control physical properties of advanced 2D materials.[21] 2D materials can be used for energy storage devices, sensors, and weapons systems.[22]

RISK ASSESSMENT

High

Dr. Zhu's work on technology that could lead to significant technological advancements in national security and defense applications make him a high-risk visa holder. Combined with

his field of study, Zhu and his fellow research team's Chinese education background make them a massive national security liability in the United States. Dr. Zhu likely received new insights from work supported by U.S. defense entities like Office of Naval Research and the Air Force Research Laboratory that could have significant application to a wide variety of military applications in China.
DATE REVIEW COMPLETE: 12-11-2025

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ENGLISH NAME: ZHAO, YU	
CHINESE NAME: 赵宇	
COUNTRY OF ORIGIN: CHINA	
STATUS: J-1 VISA	
U.S. UNIVERSITY / LAB AFFILIATION: CORNELL UNIVERSITY	

AGE: 35	**AREA OF EXPERTISE:** LIPID & POLYMER DESIGN, PRECISION NANO-BIOLOGICS, VACCINE DEVELOPMENT[1]
CHINESE UNIVERSITY: NANKAI UNIVERSITY	**PHD:** BIOLOGICAL ENGINEERING
U.S. UNIVERSITY LAB: ENGINEERING DEPARTMENT AT CORNELL WORKING WITH PROF. SHAOYI JIANG	**TITLE AT U.S. LAB:** POSTDOCTORAL RESEARCHER

EXECUTIVE SUMMARY: Dr. Yu Zhao posed a high national-security risk because his research advances precision biological payload delivery, systems that are widely recognized as strategically sensitive. His expertise in spleen-targeted mRNA lipid nanoparticles, optimized endosomal-escape lipids, and multistage CRISPR delivery platforms can be repurposed beyond medicine to enable sophisticated biodefense or bioengineering applications. This risk is no longer theoretical: Zhao has returned to China and accepted a postdoctoral position under Zhejiang University's Hundred Talents Program, effectively placing U.S.-derived expertise inside a PRC system designed to absorb and operationalize advanced foreign research.[2] Combined with prior funding from PRC state programs operating under military-civil fusion, his relocation creates a credible pathway through which sensitive biotechnology know-how could materially strengthen China's state capabilities.

DATE REVIEW COMPLETE: 12-12-2025

WHY THE RESEARCH IS CONCERNING:

Zhao's work advances the core technological capabilities required for precise delivery of biological payloads, an area consistently falling under the scope of national security concerns by committees such as the National Security Commission on Emerging Biotechnology.[3] His contributions: ranging from organ-targeted mRNA lipid nanoparticles to enhanced endosomal-escape lipids and CRISPR-delivery systems, provide the underlying mechanisms that allow genetic material to be delivered safely, efficiently, and to specific tissues in vivo. These same mechanisms, however, also represent the foundational knowledge needed to alter immune function, deliver engineered genetic constructs, or enable rapid deployment of sophisticated biological agents. This type of delivery science is exactly what biodefense experts regard as *dual-use critical technology* because it determines not only what biological payloads can be created, but whether they can be effectively delivered.

The concern is not that Zhao's published studies constitute a direct threat, but that his deep technical expertise is readily transferable to applications beyond therapeutic development. Within China's military-civil fusion system, where medical, industrial, and defense research are deliberately integrated—specialists in LNP engineering and CRISPR delivery can accelerate programs related to biodefense, advanced vaccine platforms, population-scale genetic tools, and other strategic technologies. By moving into a PRC research ecosystem that explicitly prioritizes these capabilities, Zhao effectively increases China's ability to operationalize cutting-edge delivery platforms at scale. The sensitivity lies in the skillset: the ability to design, optimize, and target biological delivery vectors is a strategic asset, and its transfer strengthens areas the U.S. government has deemed vital to national security.

Additionally, the National Security Commission on Emerging Biotechnology, Chaired by Senator Todd Young highlights how biotechnology falling into Chinese hands can be disadvantageous

and specifically recommends that "Congress should direct the Department of Commerce (DOC) to consider country-wide export controls blocking the sale of specific, highly sophisticated U.S. biotechnology items to China that would pose a substantial risk to national security if used for military end-uses."[4]

SPECIFIC ADDITIONAL FINDINGS THAT RAISE CONCERNS

Zhao has worked on research funded in part by:[5]

- National Key Research Development Programs of China
- National Natural Science Foundation of China
- Thousand Talents Program for Young Professionals
- U.S. National Institutes of Health

Grants such from the National Natural Science Foundation and the Thousand Talents Program for Young Professions are directly tied to the Chinese Communist Party.[6] These "talent plans" are directly called out by the FBI saying:[7]

> "China oversees hundreds of talent plans. All incentivize its members to steal foreign technologies needed to advance China's national, military, and economic goals."

This is compounded by the fact that while in the United States, Zhao worked on research directly funded by the United States government, research which has now been brought back to China to strengthen our adversaries.[8] [9]

ACTIVITIES IN THE PEOPLES REPUBLIC OF CHINA

Zhao left his position at Cornell to accept a position at Zhejiang University with his position being "至今，浙江大学，药学院，药物制剂研究所，研究员", a researcher at the school.[10] He was brough to the school under the "Hundred Talents Program", "浙江大学"百人计划"研究员".[11] The Hundred Talents Program is a Chinese Academy of Sciences program that provides 2 million RMB (roughly a quarter of a million dollars) in support per person for research, equipment, and housing.[12] The confirmation shows Zhao's research focuses on smart nanobiopharmaceuticals and vaccine development. Highlighting the exact risk posted by the

United States continued reliance on Chinese scientists at universities.

RISK ASSESSMENT

High

Dr. Yu Zhao was and is high risk because he possesses highly specialized expertise in biological payload delivery, one of the most sensitive and strategically significant capabilities in modern biotechnology and has now taken that expertise back to the PRC under a state-linked talent program. His work on advanced lipid nanoparticles, organ-targeted mRNA delivery, and CRISPR transport systems gives him knowledge that can accelerate both therapeutic development and dual-use applications central to biodefense, immune modulation, and genetic engineering. Zhao's move to Zhejiang University through the Hundred Talents Program, combined with his prior funding from Chinese national science agencies, places him directly within China's military-civil fusion ecosystem, where such technologies are actively leveraged for state objectives. His skillset would materially strengthen China's ability to develop next-generation genetic delivery systems at scale—capabilities the U.S. government explicitly identifies as critical to national security, making the risk of strategic technology transfer both credible and significant.

DATE REVIEW COMPLETE: 12-12-2025

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ENGLISH NAME: FAN, XIAOYI
CHINESE NAME: 范晓毅
COUNTRY OF ORIGIN: CHINA
STATUS: J-1 VISA
U.S. UNIVERSITY / LAB AFFILIATION: HARVARD UNIVERSITY

AGE: 31	**AREA OF EXPERTISE:** STRUCTURAL BIOLOGIST WITH EXPERTISE IN STRUCTURAL VIROLOGY, IMMUNOLOGY, AND THERAPEUTIC DISCOVERY.
CHINESE UNIVERSITY: UNIVERSITY OF CHINESE ACADEMY OF SCIENCES	**PHD:** BIOPHYSICS
U.S. UNIVERSITY LAB: ABRAHAM LAB AT THE BLAVATNIK INSTITUTE	**TITLE AT U.S. LAB:** POSTDOCTORAL FELLOW [1]

EXECUTIVE SUMMARY: Dr. Fan is a leading researcher at Harvard conducting cutting edge research on Western equine encephalitis virus, a potentially catastrophic virus that poses such a high threat to human life that the NIH, CDC, and DHS have classified it as a priority pathogen. Making her research even more problematic is the PRC's focus on using seemingly civilian research, including biotechnology, to enhance the effectiveness of the People's Liberation Army.

DATE REVIEW COMPLETE: 12/10/2025

WHY THE RESEARCH IS CONCERNING:

Dr. Fan is a leading researcher at the Abraham Laboratory at Blavatnik Institute at Harvard Medical School, one of the nation's leading laboratories investigating how "viruses interact with cellular receptors" and how "viral polymerases replicate or transcribe viral genomes once viruses infect cells." While the lab and the university leadership will maintain that their work is purely therapeutic, the leap from therapy to weaponization in the are is modest. In fact recent research by Dr. Fan underscores the threat of bioweapons application of her work.

In an article on Harvard's website commenting on the journal article "Molecular basis for shifted receptor recognition by an encephalitic arbovirus"[2] in the prestigious journal Cell, Harvard noted,[3]

> New research shows how small shifts in the molecular makeup of a virus can profoundly alter its fate. These shifts could turn a deadly pathogen into a harmless bug or **supercharge a relatively benign virus, influencing its ability to infect humans and cause dangerous outbreaks.**

Importantly, the research was not related to some random virus, but was rather focused on one of the most dangerous and potentially catastrophic virus, Western equine encephalitis virus (WEEV.). As reporting on prior WEEV research by Fan noted the disease is a serious public health and national security threat, "**Case fatality rates for people were as high as 15 percent in North America** in the early and middle decades of the 20th century."[4]

Should there be any doubt as to the threat posed by Western equine encephalitis virus, the United States government, through the NIAID Biodefense Pathogens list developed by the National Institute of Allergy and Infectious Diseases, the Department of Homeland Security and the Centers for Disease Control and Prevention have WEEV as a priority pathogen.[5]

If the classification itself did not underscore the threat clearly enough, NIAID's publication, "NIAID Category B–C Progress Report" noted when assessing risk that WEEV (and other similar viruses):[6]

> Importantly, many of these viruses also **pose a serious health risk from intentional exposure as bioterrorist weapons due to their extreme infectivity following aerosolized exposure.** Vaccines or effective specific therapeutics are available for only very few of these viruses.

The United States Government has also regularly expressed extreme concern, including in the biotechnology sector, about the Chinese government's fusion of civilian and military science and technology research. Just last year, the International Security Advisory Board (ISAB) on Biotechnology in the People's Republic of China's Military-Civil Fusion Strategy advising the State Department, laid the threat bare:[7]

> The PRC has identified biotechnology as one of the fields that could allow a country to dominate the next Revolution in Military Affairs (RMA). MCF – the PRC's strategy to apply modern technologies to the RMA by developing the People's Liberation Army (PLA) into a "world class military" by 2049 – has identified biology as a research and development priority.

Research like that being conducted by Dr. Fan is exactly the type of research the PRC is prioritizing and exactly the threat that ISAB raised concerns about.

NOTABLE FEDERAL SUPPORT

The lab Dr. Fan works in, the Abraham Lab, is receiving significant support from the United States government providing further evidence the Fan's research is at the cutting edge.

NIH:

- R01AI182377 Feb 7, 2024 - Dec 31, 2028 "Structural and functional studies of alphavirus receptors"
- R21AI141940 Nov 9, 2018 - Oct 31, 2021 "Structural studies of herpesvirus DNA polymerases"

- DP5OD023084 Sep 22, 2016 - Aug 31, 2021 "Antibody therapeutics for human viral hemorrhagic fevers and prevention of late neurological syndromes" [8]

RISK ASSESSMENT

High

If COVID taught America anything it is that we are extremely suspectible to mass contagions, particularly those that are with high mortality rates. Dr. Fan's work, and Harvard's cultivation of it, present an opportunity for the People's Republic of China to further enhance their ability to create deadly viruses. Dr. Fan's work at Harvard creates the opportunity for a direct pipeline of virology expertise, particularly in areas with significant defense application, to be exported to the PRC.

DATE REVIEW COMPLETE: 12/10/2025

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