



ACADEMIC SECURITY AND COUNTER EXPLOITATION PROGRAM

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THE OPEN SOURCE MEDIA SUMMARY

August 17, 2022

QUANTUM IN THE CHIPS AND SCIENCE ACT OF 2022

National Quantum Coordination Office (NQCO) | August 9, 2022

Ensuring that the National Quantum Initiative provides benefits to our society requires getting the science right, enhancing United States competitiveness, and enabling our people to participate in the opportunities created by this new field. Among other goals, National Security Memorandum on Quantum-Resistant Cryptography (NSM-10) codifies this strategy of accelerating U.S. R&D, critical partnerships, and workforce development programs. The CHIPS and Science Act of 2022, which President Biden signed today, authorizes new investments in core quantum research programs that will encourage transformative and fundamental scientific discoveries. The Act authorizes activities that (if appropriated) will accelerate the discovery of quantum applications, grow the quantum workforce, and enable cutting-edge R&D through new infrastructure. Accelerating the discovery of quantum applications: Identifying and understanding how quantum technologies will benefit society is critical, and the Quantum User Expansion for Science and Technology Program will ensure researchers have access to leading edge quantum computing resources.

Read the full article [here](#).

CHINA'S THREAT TO THE FED: CHINESE INFLUENCE AND INFORMATION THEFT AT U.S. FEDERAL RESERVE BANKS

Rob Portman, Ranking Member | U.S. Senate Committee on Homeland Security and Governmental Affairs July 2022

At the core of the health of the U.S. economy and the stability of the U.S. financial system is our central bank—the Federal Reserve System ("Federal Reserve"). Since 1913, the Federal Reserve has aimed to provide the nation with a safe, flexible, and more stable monetary and financial system. This report reveals a sustained effort by China, over more than a decade, to gain influence over the Federal Reserve and a failure by the Federal Reserve to combat this threat effectively. China has made no secret of its goal to supplant the U.S. as the global economic leader and end the U.S. dollar's status as the world's primary reserve currency. China has been willing to use every tool at its disposal in order to do so. As Federal Bureau of Investigation Director Christopher Wray warned, "the greatest long-term threat to our nation's information and intellectual property, and to our economic vitality, is the counterintelligence and economic espionage threat from China. It's a threat to our economic security—and by extension, to our national security." 1 He underscored that "China is engaged in a whole-of-state effort to become the world's only superpower by any means necessary."

Read the full article [here](#).



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THE U.S. ACCUSED A CHINESE MIT PROFESSOR OF SPYING. NOW CLEARED, HE HELPED DISCOVER WHAT MAY BE THE ‘BEST SEMICONDUCTOR MATERIAL EVER FOUND’

Nicholas Gordon | Fortune | August 16, 2022

A team of researchers has discovered what the Massachusetts Institute of Technology calls the “best semiconductor material ever found,” even better than silicon, the material used in just about every computer chip on earth. In July, scientists from MIT, the University of Houston, and other institutions announced they had proved that cubic boron arsenide performs better than silicon at conducting heat and electricity, opening up new possibilities for smaller and faster chips. The team includes China-born professor Gang Chen, the former head of MIT’s Department of Mechanical Engineering, who was the subject of a yearlong investigation by the Department of Justice before the agency dropped espionage charges because of lack of evidence. It could be decades before semiconductors based on cubic boron arsenide are used in commercially available chips—if they prove viable at all. But ultimately, the new material may help designers overcome the natural limits of current models to make better, faster, and smaller chips, and its discovery is the kind of research the U.S. risked missing out on with a now-disbanded crackdown on experts like Chen.

Read the full article [here](#).

THE BEST SEMICONDUCTOR OF THEM ALL?

David L. Chandler | MIT News | July 21, 2022

Silicon is one of the most abundant elements on Earth, and in its pure form the material has become the foundation of much of modern technology, from solar cells to computer chips. But silicon’s properties as a semiconductor are far from ideal. For one thing, although silicon lets electrons whizz through its structure easily, it is much less accommodating to “holes” — electrons’ positively charged counterparts — and harnessing both is important for some kinds of chips. What’s more, silicon is not very good at conducting heat, which is why overheating issues and expensive cooling systems are common in computers. Now, a team of researchers at MIT, the University of Houston, and other institutions has carried out experiments showing that a material known as cubic boron arsenide overcomes both of these limitations. It provides high mobility to both electrons and holes, and has excellent thermal conductivity. It is, the researchers say, the best semiconductor material ever found, and maybe the best possible one.

Read the full article [here](#).

CHINA OUTRANKS US IN KEY SCIENCE PUBLISHING

Zhang Zhihao | China Daily | August 13, 2022

For the first time, China has overtaken the United States as the world’s leader in both the quantity and quality of scientific papers published from 2018 to 2020, according to an annual report published by an institution affiliated with Japan’s science and technology ministry. Experts said the result was expected given China’s massive talent pool, growing research budget, and sustained social and political support for research undertakings. However, China-US sci-tech competition will likely intensify after the US approved the Chips and Science Act to boost its scientific competitiveness against China, they added. The report was published by Japan’s National Institute of Science and Technology Policy on Tuesday. The statistics were based on yearly averages between 2018 and 2020, and were compiled by analytics company Clarivate. Chinese research accounted for 27.2 percent, or 4,744 papers, of the world’s top 1 percent of highly cited papers from 2018 to 2020. The US accounted for 24.9 percent, or 4,330 papers, followed by the United Kingdom with 5.5 percent and 963 papers.

Read the full article [here](#).



INDIAN STUDENT NUMBERS IN THE UK SET TO CATCH UP WITH CHINESE

Nic Mitchell | *University World News* | July 28, 2022

India is expected to catch up with China as a main source of international students recruited to British universities within a few years, following a memorandum of understanding struck by the United Kingdom and India to recognise each other's higher education qualifications. Universities in the UK expect a surge in applications from Indian students, particularly for masters programmes, following the mutual recognition of qualifications agreement signed on 21 July 2022. In 2020-21 the UK attracted 84,555 Indian students, with 73% coming for masters courses mostly of one year's duration. The total number is up sharply on the 52,545 Indian students studying in the UK in 2019-20 and shows the gap narrowing between India and China as the two leading source countries for international students at British universities. China still sends the most foreign students to the UK, but the rate of growth is slowing: there were 139,130 in 2019-20, and 143,820 last year. However, numbers only tell half the story as the picture is more nuanced than simply UK universities replacing their previous reliance on Chinese with Indian students in terms of lucrative international tuition fees paid by overseas students.

Read the full article [here](#).

EMIGRATION OR RETURN? INTERNATIONAL MOBILITY AND THEODORE VON KÁRMÁN'S CHINESE STUDENTS AND ASSOCIATES

Zhang Zhihui | *Notes and Records: The Royal Society Journal of the History of Science* | August 10, 2022

This paper traces the experiences of about a dozen Chinese students/scientists who studied with the aerodynamicist Theodore von Kármán at the California Institute of Technology in the 1930s and 1940s. This special group provides an early instance of a situation that has attracted significant scholarly attention since the 1960s—educational migration of highly talented individuals and the difficult choices those individuals faced when they decided to stay abroad or to return home. This study deepens the scholarship on 'study abroad motivation' for international students and the push-pull factors related to returning to their homeland or staying abroad. Kármán tried to support his students' decisions whatever they were, without putting pressure on their decision to stay or to return. The thinking of the students was inevitably affected by changes in Sino-US relations and changes in US policy. All struggled to meet their obligation to homeland, family expectations and senses of personal honour against the advanced academic environment they had enjoyed. The stability of America's peaceful society and improved material standards of living compared with China made this a difficult decision. Different people balanced these competing demands differently. The key was how they decided to take advantage—or not—of the new circumstances.

Read the full article [here](#).

CHINESE STUDENT VISAS TO U.S. TUMBLE FROM PREPANDEMIC LEVELS

Sha Hua, Karen Hao, and Melissa Korn | *The Wall Street Journal* | August 11, 2022

The number of U.S. student visas issued to Chinese nationals plunged by more than 50% in the first half of 2022 compared with pre-Covid levels, with the U.S. losing ground as the most-coveted place for Chinese students to pursue higher education abroad. Even before the pandemic, Chinese students were shifting their study-abroad sights elsewhere, driven by doubts about whether they would feel welcome in the U.S. and the emergence of more domestic and international alternatives. Travel restrictions and heightened safety concerns during the pandemic accelerated that decline.

Read the full article [here](#).



JAPAN SCREENS FOREIGN RESEARCHERS FOR ESPIONAGE RISKS

Shiko Ueda | Nikkei Asia | August 13, 2022

Japan has set stricter screening requirements for foreign researchers entering the country, aiming to keep sensitive research and technologies from leaking to China and elsewhere. In order to apply for a Japanese visa, researchers and students need to obtain a certificate of eligibility from their schools and employers. The document includes such information as their purpose of travel and their planned address in Japan. The government last year began requiring additional information from those involved in sensitive research, such as sponsors and travel histories. Applicants also need to submit past research papers and home-country work histories. The move comes as China offers generous compensation to recruit foreign experts under its Thousand Talents plan. The U.S. and Europe are also taking steps to prevent technology leaks. The requirement has applied to relatively few people so far as Japan has limited arrivals to combat COVID-19. Of the 150,000 foreign nationals newly entering the country in 2021, just 89 did so on research-related visas.

Read the full article [here](#).

TOP EXEC, RESEARCHERS RESIGN FROM MOFFITT CANCER CENTER OVER CONCERN OF IP THEFT BY CHINA

Tina Reed | Fierce Healthcare | January 6, 2020

Several top executives stepped down from Moffitt Cancer Center in Florida—including President and CEO Alan List—following concerns about Chinese interference in research there. List, M.D., as well as center director Thomas Sellers stepped down from the Tampa-based facility, which is one of 51 National Cancer Institute-designated Comprehensive Cancer Centers, "for violations of conflict of interest rules through their work in China," officials said in a statement. Center officials said the resignations came after Moffitt "initiated an internal review of team members' collaborations with research institutions in China after the National Institutes of Health (NIH) warned all its grant recipients of foreign efforts to influence or compromise U.S. researchers." Timothy Adams, who is institute board chairman, will assume overall operational responsibilities while the center undertakes a national CEO search, officials said. The departures come amid mounting national concerns that China is recruiting researchers to share U.S. biomedical research secrets.

Read the full article [here](#).

CHINA IS THE WRONG INDUSTRIAL POLICY MODEL FOR THE UNITED STATES

Scott Kennedy | Center for Strategic and International Studies | August 9, 2022

The adoption of the CHIPS and Science Act is a watershed in U.S. economic policy. It is not because the United States has never practiced industrial policy before; in fact, the early development of semiconductors and the internet was due in large part to Defense Department support. And the U.S. federal and local governments have provided episodic aid for a variety of sectors and companies. It feels, though, as if a new era is beginning in which government support to strengthen the competitiveness of industries—for reasons of business, national security, public health, and the environment—will be seen as more necessary and normal than in the past. But as a new era dawns, it is important to get right both the goals and tools of industrial policy so that it is effective and consistent with international commitments. Otherwise, this change will leave the U.S. economy worse off than before. The United States needs to remember that it has not fallen behind China. The best overall measure of technology prowess is the Global Innovation Index.

Read the full article [here](#).



CHINESE KNOW-HOW WITHIN THE 'INTERNET OF THINGS' POSES A BRAND NEW RISK TO THE WEST

Bhagyashree Soni | Business Lend | August 10, 2022

The UK's transfer to ban Huawei from its 5G telecoms networks has introduced the controversy in regards to the safety risk from Chinese tools into the mainstream. There are rising considerations about western publicity to probably dangerous know-how: solely final month, British MPs and friends known as on the federal government to crack down on using surveillance tools from two Chinese firms, Hikvision and Dahua, which have already been blacklisted by Washington. However, there may be one risk that has gone below the radar: the tiny elements made by Chinese firms in units related by the Internet of Things. IoT merchandise, that are fitted with data-transmitting sensors and related over WiFi networks, have advanced from area of interest industrial purposes to being ubiquitous in properties, workplaces and a few autos. They are additionally a crucial part of our nationwide infrastructure. This is the know-how that may routinely flip our lights on when it will get darkish, or energy home surveillance cameras able to facial and object recognition. But the identical information collected and utilized by IoT units — on people' actions, for example — might simply be utilized by a hostile state reminiscent of China to affect, stress or threaten an adversary, firm or particular person.

Read the full article [here](#).

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