

## **Testimony of Arati Prabhakar**

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before the House Science, Space, and Technology Committee

Hearing on

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Technology Enterprise”

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I would like to thank Chairman Lucas, Ranking Member Lofgren, and the members of this committee for the invitation to address the subject of research security.

Before my current role as the President’s science and technology (S&T) advisor and Director of the White House Office of Science and Technology Policy (OSTP), I spent half my professional life in public service, including as Director of the Defense Advanced Research Projects Agency (DARPA) and the Director of the National Institute of Standards and Technology (NIST). The other half of my career has been in the private sector, in a couple of companies and a decade in early-stage venture capital.

When President Biden asked me to step into my current role, I immediately said “yes”. I’ve been able to contribute to American innovation from so many different places, and I know that it takes the whole ecosystem—public and private—to do big things for our country. That is how we create the advances that change Americans’ lives.

OSTP is the one place that works with, looks across, and supports the entire S&T ecosystem. Our mission is to strengthen America’s science, technology, and innovation, and to make sure the enterprise is aimed at our country’s great aspirations. These include strengthening our economy, achieving robust health and opportunity for every person, meeting the climate crisis, and bolstering global peace and stability.

Today, the global strategic environment is characterized by fierce military and economic competition among many actors. I will focus on the People’s Republic of China (PRC), because it is the only competitor with both the intent to reshape the international order and the ability to harness significant military and economic power to advance that objective. This is evident in the PRC’s actions ranging from its conduct in the South China Sea, to atrocities in Xinjiang, to its state-centric approach to product standards.

Technology and research and development (R&D) are central to this competition. I would like to put the PRC’s efforts in perspective and then outline the actions of the Biden-Harris Administration.

The PRC’s spending on R&D has grown from \$14 billion in 1996 to \$670 billion in 2021 in purchasing power parity, according to the Organisation for Economic Co-operation and Development (OECD). This is an unprecedented surge, which puts the PRC into second place behind the United States’ \$800 billion in R&D expenditures in 2021. The

PRC's spending is more than 40 percent greater than the entire European Union's R&D funding.

The PRC is pouring this funding into many fields and research facilities. Both diplomatic reporting and observations among U.S. researchers indicate how the PRC is seeking to become the focal point for many areas of R&D. These efforts include offers to host R&D activities and facilities, invitations to participate in PRC experiments, and diplomatic efforts to host major scientific meetings and conferences in critical and emerging technology areas.

The PRC's R&D and manufacturing priorities include its intent to be the world-leading developer in areas such as:

- Artificial intelligence
- Quantum information sciences
- Semiconductors
- New materials
- Smart manufacturing and robotics
- Brain science
- Genetics and biotechnology
- Deep space exploration

You will note many similarities if you compare their list to prior and current U.S. Critical and Emerging Technologies lists.

Every developing and developed economy pumps funding into R&D, pursues global partnerships, and seeks to trade in high-tech goods. What distinguishes the PRC is its use of illicit as well as licit means to acquire foreign technologies, its engagement in unfair competition in targeted industries, its mandatory strategy of military-civil fusion, and a general lack of transparency.

To face down this challenge, President Biden has taken unprecedented action.

To protect national security, this Administration has levied record fines for export control violations, established new export controls on semiconductors, and expanded controls on outbound investment from the U.S. in certain sensitive technologies and products. We are rebuilding America's lead in semiconductors with the bipartisan CHIPS and Science Act. The Department of Justice has pursued numerous cases related to trade secret theft and economic espionage. These actions are oriented toward industry, the source of high-tech products and significant technology development.

To address risks to research security, the Administration is implementing National Security Presidential Memorandum 33 (NSPM-33) and provisions of the CHIPS and Science Act. Here, the purpose is to make sure that universities and other academic institutions understand the altered global landscape and fulfill their responsibilities as the first line of defense against illicit activity. Unlike proprietary R&D, most academic research is intended for publication and thrives in a global exchange of ideas. But some

research can lie close to applications with national security implications. Access to data can lead to unauthorized transfer and use. The PRC has funded hidden parallel labs to replicate research. And as the PRC learns to conduct better and better leading-edge research, it is unfortunately the case that it will use some of that work to America's detriment.

Members of the academic research community are still catching up to the changes in geopolitics. Many of the things that researchers were encouraged to do only a decade ago, like help establish laboratories in the PRC, are now being discouraged. This is why we must be abundantly clear with the research community about the ways that the PRC and the Chinese Communist Party have changed; how the PRC's policies and practices differ from U.S. industrial and defense R&D efforts; and the ways in which some research activities in the PRC take and exploit U.S. data or technologies to contribute to human rights abuses, the Ministry of State Security's surveillance apparatus, and military aggression. It is essential that we address these issues.

The accompanying increase in scrutiny of U.S. researchers' ties to the PRC has given rise to another essential issue. For many Asians and Asian Americans, research security efforts run the risk of exacerbating anti-Asian sentiment, which had already increased during the COVID-19 pandemic. That is why the Biden-Harris Administration has been clear that we cannot and will not pursue policies or processes that worsen xenophobia.

In addition, as captured in NSPM-33, "the open and collaborative nature of the United States R&D enterprise underpins America's innovation, S&T leadership, economic competitiveness, and national security." It is crucial that we maintain that open and collaborative environment to compete effectively in the global race for science and technology.

We are implementing research security with these things in mind, along with our partners in the National Security Council, the Office of Management and Budget (OMB), and the members of the National Science and Technology Council Subcommittee on Research Security. This includes the release of NSPM-33 implementation guidance in 2022, which consisted of multiple rounds of public consultation with outside stakeholders, research organizations, and members of the Asian-American community.

Late last year, OMB finalized and the National Science Foundation posted common disclosure forms for use by all agencies as developed by the National Science and Technology Council and required by NSPM-33. This month, OSTP released guidance on the use of these common forms to provide additional clarity to researchers, research institutions, and agencies on how they can use the information disclosed in the forms to make informed decisions about research funding and performance. The forms also make clear that federally funded researchers cannot be members of malign foreign talent recruitment programs, as required by the CHIPS and Science Act of 2022. In addition, these forms help reduce the overall reporting burden for recipients of federal funds by having clear and consistent requirements across government agencies.

We are completing work on the research security programs requirement after receiving extensive public comments on a draft published in the Federal Register in March 2023. These requirements for research security programs at universities will provide clear standards on research security training, cybersecurity, export control training, and foreign travel security. It is vital that these programs be more than a checkbox—that they achieve increased awareness of research security threats and enable researchers and academic institutions to respond appropriately.

Additionally, we have released guidelines on foreign talent recruitment programs, as required by the CHIPS and Science Act of 2022. These guidelines intend to limit conflicts of interest with foreign governments for federally funded researchers, while not disrupting the United States' ability to engage in productive scientific exchanges that are in the national interest.

In all of these situations, it is our responsibility as the government to establish clear lines about what is and is not acceptable so that our scientists and engineers can focus on delivering the progress that will maintain America's leading position.

There is no question that the PRC is a formidable actor in technology and R&D, with rapid growth, funding, focused efforts, and efforts to systematically collect information that could give it a strategic advantage. American R&D is still strong, but we are no longer the sole big player on the world stage, and we can't rest on our laurels.

The bipartisan support of this committee has helped ensure the United States' strong position in R&D across decades. I want to thank you for that consistent dedication. It has shaped the lives of Americans in every part of our Nation, creating jobs, improving health, changing how we connect and live and work, and making every one of us safer and more secure. We must get today's R&D right so that science and technology can continue to help create a better future.

Thank you, and I will be happy to hear your thoughts and questions.