

December 14, 2023

The Honorable Patty Murray
Chair, Committee on Appropriations
U.S. Senate

The Honorable Kay Granger
Chairwoman, Committee on Appropriations
U.S. House of Representatives

The Honorable Susan Collins
Vice Chair, Committee on Appropriations
U.S. Senate

The Honorable Rosa DeLauro
Ranking Member, Committee on Appropriations
U.S. House of Representatives

Dear Chair Murray, Chairwoman Granger, Vice Chair Collins, and Ranking Member DeLauro,

Representing nearly 200 research organizations, academic institutions, science and professional societies, higher education associations, and private industries, we urge Congress to include \$13 billion in a supplemental spending package to advance U.S. national security, energy security, and economic competitiveness through research and economic development activities. Supplemental funding would bolster key activities at the National Science Foundation (NSF), the Department of Energy (DOE) Office of Science, the Department of Commerce-led Regional Technology and Innovation Hubs (Tech Hubs), the National Aeronautics and Space Administration (NASA), and the National Institute of Standards and Technology (NIST).

These federal agencies have a successful track record of delivering science- and technology-based solutions to solve national, societal, and geostrategic challenges. Congress has supported legislation to further expand their missions in driving regional innovation, accelerating technology transfer and adoption, training the next-generation workforce, and creating the jobs of the future. These federal agencies cannot meet these goals without additional funding. A few highlights of funding opportunities include:

- **Regional, Place-Based Innovation.** Commerce's Tech Hubs and NSF Regional Innovation Engines are novel public-private partnerships designed to transform the economies of different regions around the country. Through a competitive process, NSF announced 16 finalists for NSF Engines and Commerce made 31 designations for Tech Hubs. These wholly complementary programs leverage existing assets in urban, suburban, and rural areas throughout all 50 states and advance research development, manufacturing and supply chains, and targeted workforce initiatives to position regions to be global leaders in technologies that are critical to our economic and national security. However, Commerce and NSF only have funding to fully support a fraction of these promising teams. For example, in FY 2024, Tech Hubs would receive less than 20 percent of the amount authorized for the first two years of the program. Failure to deliver would leave many qualified regions and communities behind and stifle our nation's ability to compete in future industries.
- **Trustworthy AI.** NSF, DOE, and NIST drive innovation in AI and machine learning while also minimizing risk and setting global standards for its ethical and safe use. Recognizing that these three agencies have been investing in AI, significant new investments are needed to meet the requirements of the Biden Administration's Executive Order on the safe, secure, and trustworthy development and use of AI and ensure U.S. leadership.

- **Workforce Development.** NSF, DOE, Tech Hubs, NIST, and NASA are also critical to training STEM talent needed to meet growing demands for labor in emerging technology fields, such as quantum, AI, biotechnology, and advanced computing. Government and business leaders estimate that hundreds of thousands of new workers will be needed to meet U.S. demand. For example, NSF estimates 64,000 additional workers are needed by 2030 just in AI-related jobs. Additional funding is needed to support existing and launch new innovative workforce development programs.
- **Groundbreaking Research and Technology.** NSF, DOE, NIST, and NASA continue to pursue curiosity-driven, Nobel Prize-leading discoveries to plant the seed for the next industries of the future. Equally important, these federal agencies maintain world-leading research infrastructure at national laboratories, research universities, and other research organizations to accelerate the pace of innovation and attract and retain the best scientific and engineering talent. Funding for most foundational research programs has been stagnant or declining over the last decade and Congress has authorized increases to reverse the decline of these fundamental research programs.

As Congress considers national security and domestic supplemental funding requests, a down payment on leading federal science and technology agencies is an investment in U.S. global leadership. There is bipartisan recognition that U.S. leadership in science and technology has led to decades of economic growth but the U.S. is falling behind its competitors. A narrow window of opportunity exists to maintain and reclaim leadership in key science and technology areas from China and other strategic competitors, but it requires new, bold investments.

Specifically, a supplemental funding package should include:

- **\$5 billion for NSF.** This supplemental funding is needed to meet urgent needs in emerging technologies and the workforce efforts to scale our science and innovation ecosystem to meet our competitive needs. These include scaling the Regional Innovation Engines program to enable more full phase funding for the many promising teams that NSF has identified for transformative investments in their region's competitiveness and economic development; expanded work in artificial intelligence to enable the National AI Research Resource that will power AI research around the country in academia and industry as well as investments in the National AI Research Institutes and other research and workforce programs that are addressing AI needs for trustworthiness and applications for a large range of sectors; and programs to address other emerging tech needs such as those in advanced wireless and spectrum sharing, biotechnology, and resilience. The funding would also support STEM education and workforce programs as well as core research and infrastructure to ensure the science and technology ecosystem can scale to truly meet our competitive needs.
- **\$2 billion for DOE Office of Science.** This supplemental funding would help DOE launch a major new AI for Science, Energy, and National Security initiative; Microelectronics Science Research Centers and a more focused research program in next-generation semiconductors to meet unique DOE missions; expand quantum science and technology programs especially in quantum networking and communications; invest in additional Energy Earthshot Research Centers and innovative research university projects to tackle the hardest decarbonization challenges; expand the scope of fusion energy research and development to meet the bold decadal goal; launch test beds and workforce development programs in advanced computing; and accelerate the construction and upgrades of world-leading science facilities used by more than 36,000 researchers each year from academia, industry, and other federal agencies.

- **\$2.5 billion for Tech Hubs at Commerce.** This funding would bring Tech Hubs to its fully authorized level for the first two years of the program. Tech Hubs are intended to invest in restoring the United States as a global leader in the development and deployment of key technologies that are critical to our national and economic security, including AI, quantum, biotech, and more. Tech Hubs are also expected to drive strategies that keep jobs and capital growth in local communities and avoid overconcentration in the same leading cities. The program has already identified 31 qualified regions out of hundreds of applicants. These regions have demonstrated that they have the unique industry, workforce, and innovation components to be world leaders but for additional support from Commerce to bring the pieces together and scale. Funding is needed beyond the \$500 million downpayment in the FY 2023 supplemental to realize the true vision of this program by providing more support for the initial awardees to continue building, as well as to fund some of the many other qualified regions throughout the nation that have stepped up, organized across sectors, and competed for this program.
- **\$2.5 billion for NASA:** At a time when China is challenging the U.S. for space leadership with a space station, planned lunar missions and lunar base, and its own Mars sample return project, a decline in U.S. funding is putting our nation at risk of losing our long dominant position in space. While China's space program can be very opaque, progress on NASA's major projects in human spaceflight, space technology, and major science missions will have significant impacts on global space leadership for the next 50 years. New emerging technologies are an opportunity but also pose unique risks and national security and economic threats in space, and with a burgeoning space commercial sector, Congress should fund NASA programs to protect national security and strengthen its role in the creation of space technologies for the human spaceflight program and broader science applications.
- **\$1.6 billion for NIST:** Supplemental funding for NIST would bolster our nation's research and development, manufacturing, and supplier ecosystem to better compete with China. Additional investments would expedite innovation and streamline the nation's ability to bring new technologies to market, especially in key emerging technology areas such as biomanufacturing, AI, microelectronics, and quantum sensors, as well as support existing and new Manufacturing USA Institute and Hollings Manufacturing Extension Partnerships. In addition, an October 2023 Executive Order directs NIST to develop guidelines and best practices to promote consensus industry standards for the development and deployment of safe, secure, and trustworthy AI systems. New resources will be needed to execute this new mandate. Finally, NIST currently has a backlog of over \$900 million in deferred maintenance at their two laboratories and therefore is in desperate need of construction funds to adequately support their operations.

Thank you for your leadership in maintaining U.S. competitiveness. We look forward to working with you on advancing these critical science and technology programs.

Sincerely,

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