

April xx, 2022

The Honorable Rosa DeLauro
Chair
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

The Honorable Kay Granger
Ranking Member
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

The Honorable Patrick Leahy
Chair
Committee on Appropriations
U.S. Senate
Washington, DC 20510

The Honorable Richard Shelby
Vice Chair
Committee on Appropriations
U.S. Senate
Washington, DC 20510

Dear Chair DeLauro, Ranking Member Granger, Chair Leahy, and Vice Chair Shelby:

As a broad community of research organizations, professional societies, universities, and private companies, we write to urge you to provide the highest possible fiscal year (FY) 2023 302(b) allocation for the Commerce-Justice-Science (CJS) Appropriations Subcommittees to robustly fund the basic and applied research and education programs in the CJS portfolio. Significant resources are urgently needed for CJS agencies, which are vital for addressing the great challenges facing our nation, including the threat of climate change; enhancing innovation, economic growth, and prosperity; and promoting equity and justice. This important work involves many agencies and programs, including the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the National Institute of Standards and Technology (NIST), the Office of Science and Technology Policy (OSTP), the Census Bureau, the Department of Commerce statistical agencies, and the Department of Justice (DOJ) Office of Justice Programs.

As the country's largest source of funding for basic research, the federal government has a unique role in supporting R&D crucial for our national needs and keeping the United States at the forefront of innovations that improve our health, grow our economy, and enhance our quality of life. However, relative to GDP, federal spending on R&D is at its lowest point since 1953.^{1,2} Moreover, while the U.S. was once the uncontested leader in science and technology globally, we have seen our competitive advantage erode as other nations have dramatically increased their investments in research. For example, between 2010 and 2019, R&D expenditures in China have grown by approximately 11 percent annually, nearly double the rate of the U.S.³ If our country is

¹ [U.S. and Global Research and Development. The State of U.S. Science and Engineering 2022. Science and Engineering Indicators, January 2022](#)

² [Research and Development: U.S. Trends and International Comparisons. Science and Engineering Indicators Report, January 2020](#)

³ [U.S. and Global Research and Development. The State of U.S. Science and Engineering 2022. Science and Engineering Indicators, National Science Board.](#)

to remain a leader in fields such as artificial intelligence, space exploration, quantum science, and other critical areas, the nation must recommit to strong investments in research and technology, including CJS programs. In both the short and long term, such investments are central both to our prosperity and global leadership.

To this end, CJS agencies and programs figure prominently in the significant competitiveness legislation being debated by the House and Senate. As proposed in the U.S. Innovation and Competition Act (USICA) and the America COMPETES Act, NSF has officially announced the creation of a new Directorate for Technology, Innovation, and Partnerships (TIP) focused on use-inspired research and solutions to societal and economic challenges. The bills before Congress also would initiate new and expanded programs at the Department of Commerce to accelerate innovation and domestic manufacturing. Given the scope and ambition of these efforts, significant additional appropriations for CJS will be needed to realize the potential of these new initiatives while not diverting resources from existing R&D programs that form the foundation of the U.S. research enterprise.

Research and education programs within the CJS bill are also vital for addressing national crises. Basic and applied science programs supported by CJS agencies including NSF and NIST have been an invaluable part of the nation's efforts to address the COVID-19 pandemic. Decades of investments by federal research agencies built a public-private foundation of partnerships to advance scientific knowledge that allowed the nation to rapidly develop technologies to counter this novel disease. For example, research projects sponsored by NSF beginning in the 1980s contributed to the development of new molecular imaging techniques that were instrumental in studying the structure of SARS-CoV-2 and consequently in the development of vaccines that target the virus's spike protein.^{4,5} Moreover, as the pandemic has unfolded over the last three years, CJS agencies have funded myriad lines of research that have advanced our understanding of the virus and developed ways to protect our health, including groundbreaking research on airborne viral transmission and the development of more sensitive and accurate COVID-19 tests.^{6,7} Robust and sustained funding for the CJS research agencies remains critical to ensure that our nation has the scientific and technical capacity to address public health threats.

Agencies within the CJS portfolio have major roles in addressing the threat of climate change and other environmental challenges. NSF, NASA, and NOAA together fund over 60 percent of our nation's federal investment in environmental research, as well as funding a large portion of our civilian observational capabilities. They support research to model global warming, understand its effects on the Earth's ecosystems, advance mitigation and adaptation efforts, and

⁴ [NSF Statement on Nobel Prize in Chemistry 2017](#)

⁵ [Moore, J.P. and I.A. Wilson. Decades of basic research paved the way for today's 'warp speed' Covid-19 vaccines. STAT, 5 January 2021](#)

⁶ [Lednicky, J.A. \(2020\). Viable SARS-CoV-2 in the air of a hospital room with COVID-19 patients. International Journal of Infectious Diseases, 100: 476-482. DOI: 10.1016/j.ijid.2020.09.025.](#)

⁷ [Commerce Department awards \\$54 million in American Rescue Act grants to increase access to advanced manufacturing opportunities. NIST News Release, 28 February 2022](#)

develop clean energy technologies.^{8,9,10} CJS agencies also collaborate with others across the federal government to help advance coordinated efforts to assess and address the effects of climate change on all aspects of our society and develop effective strategies to become a climate-ready nation.¹¹ For example, disaster resilience research headed by NIST, including investment in post-disaster impact research and pre-impact mitigation, help address threats from high-winds, fire, or flood. Research programs supported by the CJS bill are therefore central to addressing global environmental crises.

A robust CJS allocation will allow the Department of Commerce to fund programs that are important to the future of the U.S. economy and society. Programs such as the American Community Survey continue to collect high quality socioeconomic and demographic data that scientists and policymakers use to inform basic, clinical, and applied research and research training activities.¹² The competitiveness legislation being considered by Congress seeks to stimulate innovation and strengthen the U.S. manufacturing base by directing the Department to create new regional technology hubs and expand existing manufacturing partnerships.¹³ Such activities at the Department would also complement the research, innovation, and technology programs of the new NSF TIP Directorate. To fulfill their potential and benefit American workers, additional funding will be needed for these programs to stimulate new economic activity, train the future workforce, and create jobs.

CJS research programs also play an important role in advancing equity and racial justice. As our nation continues to struggle with structural and systemic racism, research supported by DOJ, including the National Institute of Justice, provides important insights on a range of topics including the study of hate crimes, prison and sentencing reform policies, and policing strategies. These research programs provide vital data and reinforce other efforts across the government to address racial prejudice and other injustices in our society. In addition, DOJ research programs are exploring other questions with important societal implications, including police response to homelessness and the prevention of school violence.¹⁴

In sum, we respectfully urge you and your colleagues to provide a robust CJS 302(b) allocation in fiscal year 2023. With sufficient resources, the Subcommittees will be able to make the R&D investments necessary to meet our nation's challenges and aspirations.

Sincerely,

⁸ [Climate Prediction, NOAA National Center for Environmental Information](#)

⁹ [Global Climate Modeling, NASA Goddard Institute for Space Studies](#)

¹⁰ [NIST Alternative Energy](#)

¹¹ [U.S. Global Change Research Program](#)

¹² [American Community Survey](#)

¹³ [U.S. Department of Commerce: Manufacturing. Accessed March 2022](#)

¹⁴ [National Institute of Justice, Accessed March 2022](#)