CNSF
COALITION FOR
NATIONAL SCIENCE FUNDING

April 7, 2022

The Honorable Jeanne Shaheen
Chair
Subcommittee on Commerce, Justice,
Science, and Related Agencies
U.S. Senate Committee on Appropriations
Washington, D.C. 20510

The Honorable Jerry Moran
Ranking Member
Subcommittee on Commerce, Justice,
Science, and Related Agencies
U.S. Senate Committee on Appropriations
Washington, D.C. 20510

Dear Chair Shaheen and Ranking Member Moran,

As the Subcommittee begins deliberations on the Fiscal Year 2023 (FY23) Commerce, Justice, Science, and Related Agencies Appropriations bill, the Coalition for National Science Funding (CNSF) writes to respectfully urge that the National Science Foundation (NSF) receive an appropriation of **at least $11 billion** in FY23.

CNSF is an alliance of over 140 professional organizations, universities, and businesses, who are united by a commitment to the future vitality of the national science, mathematics, and engineering enterprise of the United States.

NSF needs critical resources in FY23 for the U.S. to support a thriving science and technology ecosystem and address major priorities such as technology innovation, climate change, and diversifying the future STEM workforce. Bipartisan majorities in Congress have noted the incredible importance of NSF to our nation's competitiveness and national security and called for major growth to NSF funding. NSF needs a substantial increase in its budget to achieve the goals envisioned in the America Creating Opportunities for Manufacturing, Pre-Eminence in Technology, and Economic Strength (COMPETES) Act and the U.S. Innovation and Competition Act (USICA), including the recently established Directorate for Technology, Innovation and Partnerships, which is designed to address the foremost challenges that society and the economy face today.

We ask Congress to make bold investments in the NSF this year, setting the agency on a course to advance domestic innovation and to keep pace with investments other countries are making in research and development. According to the National Science Board's (NSB) 2022 Science and Engineering Indicators, "the annual increase of China's R&D, averaging 10.6 percent annually from 2010 to 2019, continues to greatly exceed that of the United States, with an annual average of 5.4 percent from 2010 to 2019. Consequently, the share of global R&D performed by the United States declined from 29 percent in 2010 to 27 percent in 2019, whereas the share by

China increased from 15 percent to 22 percent."[1] Strong support for NSF in FY23 will provide crucial resources and attention to advancements in rapidly evolving technologies and is an indispensable element of the federal government's strategy to improve competitiveness and support national security.

NSF is well prepared to take on the enhanced competitiveness mission envisioned in Congressional innovation legislation and ramp up its investments in critical science and technology areas should it be given the resources to do so. Every year, NSF declines thousands of research ideas, and in fiscal year 2020, almost $4 billion worth of those proposals were rated very good but declined due to inadequate resources. As the National Science Board (NSB) notes, "…these declined proposals represent a rich portfolio of unfunded opportunities – proposals that, if funded, may have produced substantial research and education benefits."[2]

Funding of at least $11 billion in FY23 would allow NSF to:

- Expand the **geography of innovation** and build research capacity at emerging research institutions to ensure NSF funding and research benefits regions, from rural to urban, across the country;
- Increase **diversity, equity, and inclusion** in the sciences and engineering through programs to attract and retain historically underrepresented groups in academia and knowledge- and technology- intensive industries, including support for Historically Black Colleges and Universities and Minority Serving Institutions. According to the 2022 Science and Engineering Indicators[3], Blacks, Hispanics, and American Indians or Alaska Natives remain underrepresented among S&E degree recipients in almost all fields and degree levels relative to their representation in the general population;
- Empower tomorrow's **STEM workforce**, through NSF's K-12 STEM education, undergraduate and graduate education and training, education research, broadening participation, and informal education programs. These programs are the most powerful tool to build our domestic talent base and ensure our competitive edge while other nations are increasing investing in developing their own STEM workforces;
- Continue recovering from and **fighting against the coronavirus**. NSF investments – made over decades – in numerous technologies continue to be deployed to fight the coronavirus. For example, advances in artificial intelligence and big data allow researchers to map the spread of the coronavirus and share data with healthcare professionals, state and local leaders, and the public. NSF-supported research in molecular biology and microscopy contributed to the development of COVID vaccines. NSF engineering, social and behavioral science work underpins our vaccine delivery

[1] https://ncses.nsf.gov/pubs/nsb20221/u-s-and-global-research-and-development
[2] https://www.nsf.gov/nsb/publications/2021/merit_review/FY-2020/nsb202145.pdf
[3] https://ncses.nsf.gov/pubs/nsb20223

technology and public understanding of risk. NSF is playing a key role in rebuilding our economy after the pandemic and ensure that we are better prepared for the next public health crisis; and

- Ensure that NSF's support for scientific facilities and **research infrastructure** continue to provide cutting edge equipment to train the workforce our country needs to innovate, educate, and manufacture. NSF-supported facilities are the bedrock of many scientific disciplines, including the construction of groundbreaking telescopes, delivering the future of high-performance computing infrastructure, and pioneering fundamental physics experiments. NSF could also play a significant role, as it did in previous economic recovery periods, in investing in academic research facilities modernization.

We urge your support to ensure that the National Science Foundation receives at least $11 billion for FY2023. Thank you for considering our views. Please do not hesitate to let us know how CNSF can be a resource as you move forward with the appropriations process.

Sincerely,

The Coalition for National Science Funding

Identical letter to: Chair Cartwright and Ranking Member Aderholt

American Anthropological Association
American Association for the Advancement of Science
American Association of Geographers
American Association of Physicists in Medicine (AAPM)
American Association of Physics Teachers
American Association for Dental, Oral and Craniofacial Research
American Astronomical Society
American Chemical Society
American Crystallographic Association
American Educational Research Association
American Geophysical Union
American Institute of Biological Sciences
American Institute for Medical and Biological Engineering (AIMBE)
American Institute of Physics
American Mathematical Society
American Physical Society
American Physiological Society
American Political Science Association
American Psychological Association
American Society of Agronomy
American Society of Civil Engineers
American Society for Engineering Education
American Society of Mechanical Engineers
American Society for Microbiology
American Society for Pharmacology and Experimental Therapeutics
American Society of Plant Biologists
American Sociological Association
American Statistical Association
Arizona State University
Association for Psychological Science
Association for Women in Mathematics
Association of American Medical Colleges
Association of American Universities
Association of Public and Land-grant Universities
Association of Science and Technology Centers (ASTC)
Atlanta University Center Consortium
Battelle
Biophysical Society
Boise State University
Boston University

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Brandeis University
Brown University
Caltech
Cavarocchi Ruscio Dennis Associates
Coalition for Academic Scientific Computation
Columbia University
Computing Research Association
Consortium of Social Science Associations
Cornell University
Council of Graduate Schools
Council of Scientific Society Presidents
Council on Undergraduate Research
Crop Science Society of America
Dartmouth College
Duke University
Ecological Society of America
Entomological Society of America
Eversole Associates
Federal Science Partners
Federation of Associations in Behavioral & Brain Sciences
Federation of American Societies for Experimental Biology
Florida State University
Forge Policy Solutions
Geological Society of America
George Mason University
Georgia Institute of Technology
Harvard University
IEEE-USA
Incorporated Research Institutions for Seismology (IRIS)
Indiana University
Lehigh University
Lewis-Burke Associates LLC
Linguistic Society of America
Massachusetts Institute of Technology
Mathematical Association of America
Materials Research Society
Michigan State University
Michigan Technological University
Mineralogical Society of America
Museum of Science, Boston
National Association of Marine Laboratories
National Communication Association
National Postdoctoral Association
Natural Science Collections Alliance
New York University
Northeastern University
Northern Illinois University
Northwestern University
Optica
Pennsylvania State University
Population Association of America
Princeton University
PsySiP: Psychology of Science in Policy
Research!America
Rutgers, The State University of New Jersey
SACNAS
SAGE Publishing
Saint Louis University
Seismological Society of America
Silicon Valley Leadership Group
Society for American Archaeology
Society for Industrial and Applied Mathematics
Society for Industrial and Organizational Psychology
Society for Neuroscience
Society for Research in Child Development
Society for the Psychological Study of Social Issues (SPSSI)
Soil Science Society of America
SPIE
Stevens Institute of Technology
Stony Brook University
The Bagley Group
The Ohio State University
Tufts University
UCLA
UNAVCO
University of California System
University of Cincinnati
University of Colorado Boulder
University of Florida
University of Illinois System
University of Iowa
University of Michigan
University of Notre Dame
University of Oklahoma
University of Oregon
University of Pennsylvania
University of Pittsburgh
University of Vermont
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University of Wisconsin-Madison
US Ignite
Vanderbilt University
Virginia Commonwealth University
Washington State University
West Virginia University
Woods Hole Oceanographic Institution
Worcester Polytechnic Institute (WPI)
Yale University