



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.”<sup>1</sup> 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.”<sup>2</sup>

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<sup>3</sup>, 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

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<sup>1</sup> <https://nces.nsf.gov/pubs/nsb20221/u-s-and-global-research-and-development>

<sup>2</sup> [https://www.nsf.gov/nsb/publications/2021/merit\\_review/FY-2020/nsb202145.pdf](https://www.nsf.gov/nsb/publications/2021/merit_review/FY-2020/nsb202145.pdf)

<sup>3</sup> <https://nces.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

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



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  
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Virginia Commonwealth University  
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West Virginia University  
Woods Hole Oceanographic Institution  
Worcester Polytechnic Institute (WPI)  
Yale University