

Testimony of Research!America to the Senate Committee on Appropriations Subcommittee on  
Commerce, Justice, Science, and Related Agencies Concerning FY21 Appropriations for NSF  
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Research!America appreciates the opportunity to submit testimony for the record. We are the nation's largest nonprofit alliance advocating for science, discovery and innovation to achieve better health for all. We greatly appreciate the Subcommittee's dedicated stewardship over funding for such critical priorities as the National Science Foundation (NSF). As you consider Fiscal Year 2021 (FY21) allocations, we request that the National Science Foundation (NSF) receive at least \$9 billion, an increase of 8.7%, in FY21 to create jobs, support sustained economic growth, and bolster the wellbeing of Americans and people around the globe.

NSF's mission and portfolio are intentionally diverse because science investment can yield unknown discoveries, spanning biology, economics, engineering, mathematics, computer science, the social and behavioral sciences, and other high-impact disciplines. We strongly believe that robust funding for NSF is a sound approach for advancing the United States' strategic interests in an ever-more complex international landscape and meeting the aspirations of the American people.

### **What the NSF Provides**

The NSF is a key driver for our nation's R&D leadership, supporting strategically important research at more than 1,800 academic institutions in all 50 states, the District of Columbia, and three U.S. territories. NSF-funded research underlies core industries like IT and biopharmaceuticals, contributes to efforts to stop bad actors in cyber- and other forms of terrorism, and in other critical ways that advance our nation's interests. An estimated 303,000 students, teachers, researchers and postdoctoral fellows were empowered by the NSF in FY2019. Approximately 95% of NSF funding is allocated to grants or cooperative agreements to researchers through a competitive merit review process. Since 1950, NSF has supported more than 242 Nobel Prize winners, including six Nobel Laureates in 2019. The research supported by NSF bears on virtually every sector of our economy, support cyber- and other crucial areas of national security, and factor importantly into the productive use of big data and other highly promising avenues of research.

### **NSF Leverages American Ingenuity to Break New Ground in Science and Technology**

NSF supports the type of high-risk research that drives progress and has resulted in recent groundbreaking discoveries. For instance, researchers funded by the NSF developed a mathematical model that can predict dengue fever outbreaks up to four months in advance. This international research collaboration found a practical measurement for these predictions. The development of this model will help accurately predict outbreaks and enable public health officials to take preemptive steps for safeguarding vulnerable populations. This progress would not have been possible without NSF investment.

NSF-funded research continues to propel progress, often through collaboration across multiple fields. A team of NSF-funded scientists is developing wearable skin sensors that can analyze a person's sweat to get the same information that currently requires a more invasive procedure, such as drawing blood. Scientists are gathering data from these sensors to learn what sweat composition can tell us about health and wellness. Through NSF's continued support, cross sectors work together to produce cutting-edge research that pushes the fields of medicine, engineering, and biomedical science forward.

### **Americans Understand the Value NSF Delivers**

Since 1992, Research!America has commissioned national and state-level surveys to assess public sentiment on issues related to research and innovation. One of the most consistent findings over time has been Americans' support for basic research. In our most recent survey, fielded in January 2020, 86% of respondents agreed that "even if it brings no immediate benefits, basic scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government." Our surveys have also explored Americans' perspectives on the role of NSF-funded tools in advancing key national priorities. For example, a strong majority of Americans - almost 90% - believe it is important for scientists to inform elected officials about their research and its impact on society.

### **NSF is Essential to Training the Next Generation of American Scientists and Innovators**

The U.S.'s global leadership is directly tied to our strength in the fields of Science, Technology, Engineering, and Mathematics (STEM). NSF cultivates future American leaders in these strategically important disciplines. Since 1952, NSF has supported more than 60,000 students through Graduate Research Fellowships and has provided grant support to thousands of postdoctoral fellows and young investigators. The agency also engaged in unique public-private partnerships, including a recent partnership to develop online learning platforms for learners of different ages and skill levels. This collaboration will fund projects supporting schools, companies, nonprofits, and others to build a more STEM-educated workforce. Efforts like this set the stage for future success as our nation seeks to accelerate the pace of medical and scientific progress.

Research!America appreciates the complicated and complex task facing the Subcommittee as it seeks to prioritize funding in a manner that best serves the American people. We urge you to provide at least \$9 billion, an increase of 8.7%, for NSF in FY21. We hope you will call on our organization if additional information would prove useful.

Thank you for your continued leadership and consideration.

Sincerely,

Mary Woolley  
President and CEO  
Research!America