

Talking Points for the 2024 Biological Sciences Congressional District Visits

This information is provided for your reference and to help you craft a clear and well-informed message. You do not need to repeat these points verbatim nor do you need to say all of the talking points; use those that are appropriate or comfortable for you and convey them in your own words.

Investments in biological research advance our understanding of life and inform solutions to the nation's greatest problems

- Biological research is informing responses to important problems, including combating emerging wildlife diseases that can threaten human health; conserving biological diversity that maintains our ecosystems and provides clean air and water; increasing food production; developing new medical therapies; and informing wise management of our natural resources.

High quality science education is vital to our nation.

- Science education and training programs ensure that the next generation has the scientific, technical, and mathematical skills employers seek.
- Federal agencies support research fellowship programs that provide K-12, undergraduate, and graduate students with hands-on research experience, which is one of the best ways to develop scientific and technical skills.

The National Science Foundation (NSF) is the only federal agency that funds research in all fields of science and engineering.

- NSF invests in fundamental, basic research that sets the stage for transformative breakthroughs and leads to new ways of thinking about scientific, economic, societal, and technical challenges facing the United States and the world.
- NSF supports research and workforce development programs to train the next generation of scientists. These programs drive future economic growth and enhance our nation's security and global competitiveness.
- The agency supports 25% of all federally sponsored basic scientific research conducted by America's colleges and universities.
- Although NSF accounts for only 4% of federal research and development (R&D) spending, it supports nearly 56% of the nonmedical basic research at our colleges and universities.
- In FY 2023, NSF research awards reached 1,900 colleges, universities, and other institutions in all 50 states, the District of Columbia, and Puerto Rico.

Federal research programs are an important funder of biological research.

- NSF provides about two-thirds of federal support for fundamental biological and environmental research conducted at colleges, universities, and non-profit research centers across the nation.
- *Speak about the federal program that funds your research.*

Public investments in research yield a positive rate of return.

- Over the past decade, the U.S. science, technology, engineering, and mathematics (STEM) workforce grew both in number and in the percentage of the total U.S. workforce – from 22% to 24% between 2011 and 2021.
- In 2021, the U.S. STEM workforce comprised 36.8 million people in diverse occupations that require STEM knowledge and expertise, making up 24% of the total U.S. workforce.
- Workers in science and engineering occupations tend to have higher incomes and lower unemployment rates than workers in other kinds of jobs.
- In FY 2023, an estimated 353,000 people (researchers, postdoctoral fellows, trainees, teachers and students) were supported directly by NSF. More than 70,000 graduate students have been supported by NSF Graduate Research Fellowships since 1952.
- Federal research funding has given rise to numerous companies, such as Genentech, Ekso Bionics, Ginkgo BioWorks, and Google – to name just a few. Federal investments have also spawned entire new fields, such as genomics and its applications in forensics, agriculture, and medicine.
- *Include an example from your state.*

All scientific disciplines contribute to innovation and economic growth.

- Research is increasingly an interdisciplinary endeavor where tools from one field are borrowed by another field, and insights from one discipline help guide research in another (e.g., neuroscience, psychology, artificial intelligence and systems biology).
- To enhance our global competitiveness, we need a strong foundation of research across all scientific disciplines.

NSF-funded research has played a crucial role in our response to the COVID-19 pandemic.

- Fundamental research supported by NSF led to the development of critical diagnostic tools and medical devices being used to combat the pandemic. NSF funded the discovery of bacteria from thermal pools at Yellowstone National Park that contain thermostable enzymes that allow for the rapid copying of genetic material through a process called Polymerase Chain Reaction (PCR). This decades old process was integral to manufacturing a widely used clinical test for determining whether a patient has been infected with the SARS-CoV-2 virus.
- NSF-funded companies joined federal and local efforts to develop tests and diagnostic tools to combat COVID-19.

Federal support for research has been shrinking.

- Since 1976, federal investment in research and development (R&D) as a share of Gross Domestic Product has declined from 1.23 percent to 0.76 percent. Since 2010, federal R&D as a share of the U.S. economy decreased by nearly 25 percent.

- Meanwhile, foreign countries, especially China, are rapidly increasing investments in all fields of science, putting our nation's status as a leader in scientific discovery and innovation at risk. The annual rate of increase of China's R&D, is almost double that of the U.S.

Sustained investment in research is required if we are to solve our greatest problems.

- Predictable, and increased, annual investments allow federal research managers, scientists, and industry executives to efficiently and wisely set research priorities.
- Fluctuations in funding result in a backlog of unfunded but highly competitive research. This demoralizes researchers and slows the pace of discovery.

We urge you to provide the National Science Foundation at least \$11.9 billion in Fiscal Year (FY) 2025.

- NSF funding is essential to our nation's research infrastructure, such as natural history museums/collections, biological field stations, and ecosystem research centers.
- This appropriations request aligns with the FY 2023 authorization for NSF in the CHIPS and Science Act and is supported broadly by the scientific community.

Please also support robust federal funding for other important biological science programs, including the Agriculture and Food Research Initiative (AFRI) and programs administered by the National Institutes of Health, Environmental Protection Agency (Office of R&D), the Department of Energy, the U.S. Geological Survey, and the National Oceanic and Atmospheric Administration.

Thank you for completing FY 2024 appropriations and approving funding increases for DOE Office of Science, USDA's Agricultural Research Service, and NOAA.

We are disappointed that NSF received only \$9.1 billion in FY 2024, an 8% cut compared to its FY 2023 budget. Other agencies like NIH, USGS, EPA, and the National Institute of Food and Agriculture also received decreased funding in FY 2024.

- This is the first time that funding for NSF has decreased in a decade. The reduced allocation hurts research and undermines the nation's ability to address societal challenges.
- While we are thankful an agreement could be reached to complete the appropriations process, the decreased funding level for NSF will stall American innovation by diminishing prior research, workforce, and infrastructure investments. We understand the difficult choices faced in the current fiscal environment. However, the FY 2024 funding for NSF fell far below our competitiveness needs.
- Further, this cut ignores the bipartisan CHIPS and Science Act, which provided an exciting framework for growing federal investments in scientific research. Failure to meet the funding levels authorized in this law will lead to billions of dollars in lost opportunities.

The passage of the landmark CHIPS and Science Act demonstrated bipartisan commitment to our nation's scientific and technological enterprise. We urge Congress to follow through on its promise by funding NSF as close as possible to the levels authorized by the law. (The law authorizes \$16.7 billion for NSF in FY 2025.)