

## Talking Points for the 2023 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.

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### **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.
- In FY 2022, NSF research awards reached 2,000 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.**

- Since 1960, growth in U.S. employment in science and engineering has increased by an average rate of 4 percent per year, outpacing the 1 percent annual growth rate in total U.S. employment.
- Nearly 22 million U.S. jobs require science or engineering expertise at the bachelor's level.
- Workers in science and engineering occupations tend to have higher incomes and lower unemployment rates than workers in other kinds of jobs.
- In FY 2022, an estimated 352,000 people (researchers, postdoctoral fellows, trainees, teachers and students) were supported directly by NSF. More than 60,000 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, other countries are boosting investments in science. China, India, and other countries in Asia are ramping up investments in R&D.

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

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

**We urge you to provide the National Science Foundation at least \$11.9 billion in Fiscal Year (FY) 2024.**

- 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.
- Recognizing that the debt limit deal has provided a framework for non-defense discretionary funding levels for the next two years, we urge Congress to fund NSF at the highest possible amount building on the FY 2023 funding level of \$9.9 billion.

**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 supporting scientific research.**

- Thank you for providing \$9.9 billion to NSF in FY 2023, an increase of roughly \$1 billion, and ensuring budget increases for NIH, USGS, EPA, DOE Office of Science, and NOAA.
- We applaud the passage of the landmark CHIPS and Science Act, which 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.
- We urge you to support increased federal investments in scientific research and education. These increases are needed to strengthen America's capacity to innovate.