



Message Points

Fiscal Year 2017 Commerce-Justice-Science Appropriations

- For Fiscal Year 2017, the Coalition for National Science Funding (CNSF) – comprising 120 scientific societies, universities and businesses – recommends **\$8 billion** for NSF and asks Congress to maintain its longstanding commitment to the only federal research agency that supports all disciplines of science.
- In a show of bipartisan support for NSF, 143 Members of Congress signed a Dear Colleague letter sponsored by Representative Butterfield (D-NC) and Representative McKinley (R-WV). This letter highlights the valuable research supported by NSF and recommends that Congress pass an appropriations bill that funds the agency at **\$8 billion**.
- In another show of bipartisan support for NSF, over 30 Members of Congress signed a Dear Colleague letter sponsored by Representative Price (D-NC) and Representative Hanna (R-NY). This letter encourages the House Appropriations Committee to fund as a whole the six directorates in the Research and Related Activities account. This provides the flexibility needed to take advantage of emerging scientific opportunities, based on input from **the scientific community, the higher education community, the National Academies, National Science Board, and other bodies**.
- These Dear Colleague letters demonstrate the bipartisan support that NSF has in Congress. The sponsors and signers of these two Dear Colleague letters understand the importance and necessity of making investments in fundamental scientific research a national priority.
- **The \$7.4 billion funding level proposed in the FY2017 CJS Appropriations bill is \$57 million below the FY2016 enacted funding level for the agency. This bill would reverse two consecutive years of hard fought, slow recovery in NSF's budget from the severe sequestration cuts in FY 2013. While we understand that we are in a climate of budget constraint, we do encourage Congress to make investments in fundamental scientific research a national priority. Specifically, we encourage you to work to provide additional funds for NSF in fiscal year 2017.**

NSF and Its Mission Are Vital to America's Research Enterprise

- As the cornerstone of America's research enterprise, continued Federal investment in the National Science Foundation (NSF) and the science it supports is absolutely critical if this nation is to remain at the forefront of scientific progress, innovation, and knowledge creation in the fields of science, engineering, and education.
- Research and education programs supported by NSF help develop the knowledge base needed to push the frontiers of science, mathematics, and engineering disciplines; contribute to the development of the future science and technology workforce; underpin new fields of inquiry; and promote interdisciplinary research and education.
- NSF is one of our nation's greatest tools for the promotion and advancement of scientific, mathematical, and engineering research and education. Although NSF accounts for only 4% of federal R&D spending, it supports nearly 50% of the nonmedical basic research at our colleges and universities. It funds research in new frontiers of scientific inquiry and contributes to creating a highly skilled, competitive workforce in science and engineering.
- NSF is the only federal agency with the unique and important mission of “promoting the progress of basic research in all fields of science and engineering.” Given its important mission, NSF invests 94% percent of its budget directly to support research. In any given year, NSF awards reach over 1,800 colleges, universities, and other public and private institutions in all 50 states, the District of Columbia, and Puerto Rico. In FY2017 NSF expects to reach 377,000 researchers, postdoctoral fellows, trainees, teachers, and students.
- NSF is tasked with keeping the nation at the forefront of discovery in all fields of fundamental science and engineering. Through seven directorates, the agency funds research in traditional academic areas, as well as “high-risk, high pay-off” ideas – all of which are integrated with educating future scientists and engineers.
- **Social and Behavioral Sciences**
 - Science includes the study of social and behavioral phenomena. The discoveries made through SBE-funded research often have profound impacts on people's lives. As a result of this research, we are learning: how to respond to disasters; enhance teaching and learning in education, including STEM Ed; improve the safety of our troops in combat areas; reduce violence among our youth; improve public health; auction the airways efficiently; model water planning to enhance sustainability; improve the effectiveness of the criminal justice system; and help paralyzed people communicate. Scientists funded by SBE are trained in a wide range of disciplines and contribute substantially to the knowledge that benefits the U.S. taxpayer.

- NSF provides funding for 24% of all federally-supported basic research in U.S. colleges and universities. The Social, Behavioral, and Economic Sciences (SBE) Directorate — one of seven directorates at NSF — funds 55% of the university-based social and behavioral sciences research in the nation. Yet, it remains the smallest of the directorates, accounting for only about 4% of the entire NSF budget. This funding not only advances science, but is contributing to the local economies.
 - The world is changing rapidly, and this requires a deep understanding of humans, our social systems, and how we interact with the world around us, including how humans interact with the technologies that are developed. Without this science — without an understanding of the fundamental nature of who we are— policy making on major national issues cannot be based on evidence and billions of dollars is wasted. NSF’s SBE Directorate is the leader in funding the research that helps us understand the human element of almost every major public policy issue we face.
 - The collaboration of scientists across fields as well as the support of research ideas by multiple NSF Directorates is needed to address a number of questions; however, this research cannot replace the fundamental advancement of knowledge through each of the Directorates, including SBE. Basic science research supported through the SBE Directorate is essential to answering fundamental questions about human nature that are critical to addressing national challenges.
- **Geosciences**
 - Society cannot escape geological hazards or extreme weather events, but through scientific research we can minimize the effects of these disasters on our citizens, our infrastructure, and our economy. The National Science Foundation’s Geosciences Directorate funds research that deepens our fundamental scientific understanding of the causes and conditions that underlie geological hazards, such as landslides, earthquakes, and volcanoes, and extreme weather events, such as hurricanes, tornadoes, and disruptive space weather events. Advanced understanding of the fundamental causes of disasters will help future scientists develop better planning tools and warning systems for society.
 - Geosciences research helps us find and extract natural resources such as oil and natural gas and critical minerals, understand and protect our environment, monitor and prepare for natural disasters such as earthquakes, hurricanes, and drought, and learn about conditions on distant planets.
 - Basic geoscience research supported by NSF helps provide a comprehensive understanding of the Earth that spans billions of years, from how the planet formed to how its primary components – air, ice, land and water – affect our lives today.

- NSF provides 64% of all funding for basic geoscience research at universities in the U.S.
- The outcomes of geoscience research ensures that government officials, industry and the public have the best science available as decisions are made regarding the nation's conservation, management, energy, safety and security strategies.
- The geosciences are unraveling the Earth's mysteries and complexities for the future benefit of humankind.
- In 2012, there were approximately 330,000 geoscientists in the U.S. who contributed at least \$100 billion to U.S. GDP.

Investing in NSF is an Investment in America's Research and Technology Enterprise

- The Innovation Deficit threatens to jeopardize America's role as the world's innovation leader and undermine our economic strength and national security. Declining federal investments in research, compounded by sequestration-level discretionary budget caps, and other nations redoubling efforts to bolster their innovation ecosystems, combine to create potential for a serious innovation deficit in the United States.
- Many of our global competitors are increasing their financial support for scientific and engineering research, while the rate of growth for funding research in the U.S. is slowing. To put a finer point on this, the most recent OECD reports show China, for example, has more than tripled its R&D spending over the past 17 years and is projected to overtake the US in total R&D funding from all sources in 2019, just three years from now. The U.S. must maintain its leadership position in scientific research and education, and NSF is critical to this endeavor.
- Even under tight budget constraints, it is imperative to have robust annual budget levels for NSF. The federal government plays a crucial role in supporting the fundamental research necessary to build knowledge that improves lives, contributes to new technologies, and sparks the development of new products.

Merit Review

- All NSF grant proposals are reviewed utilizing two merit review criteria: Intellectual Merit and Broader Impacts. Grant proposals must advance knowledge (intellectual merit) and benefit society (broader impacts).
- For the last 66 years, NSF has used the merit review process to review and ultimately award the best scientific, engineering, and education research. NSF grant proposals are reviewed and evaluated by knowledgeable and accomplished scientists and engineers.

- The merit review process has resulted in funding some of the best scientific minds the world has known. More than 200 Nobel Laureates have received NSF support at some point during their careers.

Transparency and Accountability

- In recent years, NSF has implemented transparency and accountability policies to ensure that taxpayers can access user-friendly information about the exciting research the agency funds across all fields of science and science education.