

Statement of Paula Skedsvold, Executive Director, Federation of Associations in Behavioral and Brain Sciences on the

FY 2019 Appropriations for the National Science Foundation

submitted for the record to the

**United States House of Representatives
Committee on Appropriations
Subcommittee on Commerce, Justice, Science and Related Agencies**

Honorable John Culberson, Chairman

April 27, 2018

Chairman Culberson, Ranking Member Serrano, and Members of the Subcommittee:

The Federation of Associations in Behavioral and Brain Sciences (FABBS) appreciates the opportunity to submit testimony for the record in support of the National Science Foundation in the FY 2019 budget. FABBS represents twenty-one scientific societies and numerous university departments whose scientific members share an interest in advancing knowledge through the sciences of mind, brain, and behavior. Understanding the human element of our most pressing challenges through research in these sciences will improve the welfare of our nation, our society, and its people. Fundamental research funded by NSF helps to create a body of knowledge and build future generations of scientists whose work will be essential in keeping this country at the forefront of discovery. **FABBS joins the broader scientific community in urging Congress to fund NSF at \$8.45 billion or more for FY 2019.**¹

We sincerely thank the CJS Appropriations Subcommittee for its diligent work on the FY 2018 CJS and omnibus bills, and especially for providing NSF a \$300 million increase in FY 2018. As you know, every dollar is needed to ensure that the U.S. is able to maintain its leadership status in science and technology in an increasingly competitive global economy. When adjusted for inflation, NSF funding has dropped 4.2 percent since 2015 (not including FY 2018 funding), while other major research agencies experienced substantial increases during the same time period. Furthermore, funding for NSF has remained stagnant at a time period when we are seeing rapid growth in federal investment in R&D from our global competitors. Increasing federal support for NSF is vital in order to ensure the health, security and economic well-being of our nation.

Sustained Support for All Areas of Science

For years, the Subcommittee Chairman and Ranking Members have recognized the importance of funding fundamental research across all areas of science, and have ensured that the Research and Related Activities (R&RA) line in the NSF account is used to support the most promising scientific research, as identified through scientific advisors, merit review, and scientific opportunity. We are sincerely appreciative of your leadership in doing so. **For FY**

¹[Coalition for National Science Funding - FY 2019 Appropriations Request Letter](#)

2019, we urge you to not only provide increased, sustainable funding to NSF, but to also continue increased support for R&RA, while emphasizing that funding decisions should not be guided by politics, but rather by scientific need, merit, and the national interest.

With the encouragement of the CJS Appropriations Subcommittee Chairman, the National Science Foundation recently requested that the National Academies of Sciences, Engineering, and Medicine (the National Academies) convene an expert committee to study whether it is in the national interest for the federal government to fund fundamental SBE research. In their report published in 2017, the expert committee concluded that the SBE sciences “produce a better understanding of the human aspects of the natural world, contributing knowledge, methods, and tools that further the mission of the National Science Foundation to advance health, prosperity and welfare, national defense, and progress in science.”² Furthermore, the National Academies report concluded that the knowledge, tools and methods produced by the SBE sciences plays a critical role in advancing the mission of other federal agencies such as the Department of Defense, Department of Homeland Security, and the National Institutes of Health. The NAS committee also described how the SBE sciences contribute to the growth of businesses, industries, and the general U.S. economy.

Despite the importance and uniqueness of SBE research to addressing national challenges, the SBE Directorate has historically been — and remains — the smallest research directorate at NSF. As recently as FY 17, the SBE Directorate comprised 3.6% of the total NSF budget and 4.5% of the R&RA line. And yet, the SBE Directorate provides approximately 68% of federal funding for fundamental research in SBE sciences at academic institutions across the country.

Following are just a few examples of the numerous ways in which discoveries in the SBE sciences have benefitted our nation:

- Social network analysis has been used to predict hacker behavior and identify vulnerabilities in the nation’s cyber-networks.
- Research on non-verbal communication has helped the army improve the way it trains its soldiers and reduce the potential for cross-cultural conflict.
- Research on the underlying mechanisms enabling self-control has been used to help identify youth at high risk for poor academic, social, and health outcomes and improve interventions focused on positive youth development.
- Cognitive science and education research has been used to increase understanding of differences in learning and improve STEM education techniques, ultimately helping to broaden participation in STEM fields.
- Research on risk perception and communication has been used to improve understanding of how the public perceives and responds to warnings about natural hazards and disasters.

² [National Academies of Sciences, Engineering, and Medicine. \(2017\). The Value of Social, Behavioral, and Economic Sciences to National Priorities: A Report for the National Science Foundation.](#)

- Cognitive neuroscience research on brain plasticity has been used to improve early detection and treatment of brain disorders such as dyslexia, autism, and Alzheimer's disease.

All of NSF's fundamental research programs, including those in the SBE sciences, need sustained, predictable funding levels that allow scientists to investigate research questions over a period of time and attract the next generation to build upon that knowledge. Doing otherwise slows the growth of discovery, shrinks the community of experts, and undermines the very research that this country needs to address its priorities in national security, defense, health, education, economics, and more.

Core Discipline Research is Critical for the Success of Interdisciplinary Initiatives

We applaud NSF for encouraging interdisciplinary collaboration and innovation through the launch of its Big Ideas and Convergence Accelerators. However, it is crucial that funding for these new initiatives **does not come at the expense of continued funding for core discipline research** in any of the research directorates, including the SBE Directorate.

The discoveries fueled by fundamental SBE research provide a foundational understanding of human thought, feeling and behavior that is critical for making advances in several of NSF's Big Ideas — including harnessing the data revolution, the future of work at the human-technology frontier, and building an inclusive community of STEM learners. Furthermore, funding fundamental research through the NSF SBE directorate ultimately allows us to address a wide range of national challenges and spur innovation in multiple areas. For example, the underpinnings of game theory have been used to improve donor-recipient matches for kidney transplants, improve business models for tech giants such as Google and Facebook, and inform the development of counterterrorism policies. **In order for interdisciplinary research to be successful, the core research upon which it draws must be strong. An increase in NSF's 2019 budget would allow the agency to continue funding core disciplinary research, as well as invest in the Big Ideas.**

Increasing federal investment in fundamental scientific research across all sciences is critical to ensuring the security and prosperity of our nation and its people. Thus, **we urge you to provide the National Science Foundation with at least \$8.45 billion for FY 2019. Furthermore, we recommend that an increase in funding be used to supplement and not supplant fundamental research in all of the research directorates.** Along with the broader scientific community, we believe that increased funding for fundamental scientific research would help set NSF on a solid path with potentially transformative benefits to the country.

Thank you for considering this request.

FABBS Member Societies:

American Educational Research Association, American Psychological Association, Association for Applied Psychophysiology and Biofeedback, Association for Behavior Analysis, International Behavior Genetics Association, Cognitive Science Society, International Society for Developmental Psychobiology, Massachusetts Neuropsychological Society, National Academy of Neuropsychology, The Psychonomic Society, Society for Behavioral Neuroendocrinology, Society for Computers in Psychology Society for Judgement and Decision Making, Society for Mathematical Psychology Society for Psychophysiological Research, Society for Research in Psychopathology, Society for the Scientific Study of Reading, Society for Text & Discourse, Society of Experimental Social Psychology, Society of Multivariate Experimental Psychology, Vision Sciences Society

FABBS Affiliates:

APA Division 1: The Society for General Psychology; APA Division 3: Experimental Psychology; APA Division 28: Psychopharmacology and Substance Abuse; Arizona State University; Boston College- Psychology; Boston University- Psychology; California State University at Fullerton- Psychological and Brain Sciences; Cornell University- Psychology; Duke University- Human Development; Florida State University- Psychology & Neuroscience; Georgetown University- Psychology; Harvard University- Psychology; Indiana University Bloomington- Psychology; Indiana University Purdue University Indianapolis- Psychology; Johns Hopkins University- Psychological and Brain Sciences; Kent State University- Psychological Sciences; Lehigh University- Psychology; New York University- Psychology; Northeastern University- Psychology; Pennsylvania State University- Psychology; Princeton University- Psychology; Purdue University- Psychological Sciences; Rice University- Psychology; Southern Methodist University- Psychology; Stanford University- Psychology; Temple University- Psychology; University of California at Berkeley- Psychology; University of California at San Diego- Psychology; University of Cincinnati- Psychology; University of Delaware- Psychological & Brain Sciences; University of Houston- Psychology; University of Illinois at Urbana-Champaign- Psychology; University of Iowa- Psychological and Brain Sciences; University of Maryland at College Park- Psychology; University of Massachusetts at Amherst- Psychological and Brain Sciences; University of Michigan- Psychology; University of Minnesota- Psychology; University of North Carolina at Greensboro- Psychology; University of Pennsylvania- Psychology University of Pittsburgh- Psychology; University of Texas at Austin- Psychology; University of Texas at Dallas- School of Behavioral and Brain Sciences; University of Virginia- Psychology; Vanderbilt University- Psychological Sciences; Virginia Tech- Psychology; Wake Forest University- Psychology