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February 10, 2021

Suzanne Plimpton, Reports Clearance Officer
National Science Foundation
2415 Eisenhower Ave.
Alexandria, VA 22314

Comments transmitted via email (splimpto@nsf.gov) and submitted via RFI website

Dear Ms. Plimpton,

The Federation of Associations in Behavioral and Brain Sciences (FABBS) appreciates the opportunity to submit comments on the 2022-2026 Strategic Plan for the National Science Foundation (NSF). FABBS is a coalition of 27 scientific societies that share an interest in advancing cognitive, brain, and behavioral sciences in support of furthering research, knowledge, and improving public health and welfare.

We are living through a period of dramatic disruption to every aspect of our daily lives forcing people, institutions, and infrastructures to rapidly adapt. Much of the groundwork for the ability to accomplish these changes has been years in the making, thanks to the federal investment in scientific infrastructure from sources including the NSF. FABBS commends the NSF for quick action to address the spread of COVID-19, funding over 1,000 RAPID and EAGER awards in 2020. Two outstanding examples include: the Johns Hopkins Coronavirus Resource Center for tracking the state of the pandemic in real-time, which has become a go-to resource for media, policy makers and individuals; and the Societal Experts Action Network, for providing decision-makers at all levels of government with evidence-based and actionable steps from the social, behavioral, and economic sciences.

Furthermore, the pandemic, political unrest, and calls for racial justice have all underscored the importance of the unique mission of the NSF to invest in fundamental and curiosity-driven science, not just in response to questions that we face, but also for those we may not yet have imagined.

The broad federal scientific infrastructure relies on the NSF to fill this critical role. These challenging times have reinforced the wisdom of the current NSF strategic plan, particularly 'Strategic Goal 1 - to Expand knowledge in science, engineering, and learning' and 'Strategic Goal 2 - Advance the capability of the Nation to meet current and future challenges'.



What are the interests, values, and emergent science and policy issues that the Strategic Plan should recognize?

The current NSF Strategic Plan is a meaningful and valuable document that serves the agency and the scientific community. Representing diverse disciplines within the behavioral and brain sciences, FABBS offers several specific opportunities to build on the existing document.

- **Diversity** - In the current strategic plan, NSF identifies 'Inclusion' as a *Core Value*. FABBS recommends enhancing this language to include diversity and a proactive effort to foster underrepresented communities in science. In addition to staff and grantees, NSF could emphasize valuing diversity in graduate education and the STEM workforce, as well as encouraging diversity in the scientific questions asked, and perspectives and approaches taken.

Beyond the demographic inclusion of underrepresented groups in the workforce, NSF should strengthen the attention to representative research samples and the sociocultural contexts of these groups. This scientific approach has been referred to as [multicultural psychology](#), which focuses on the mechanisms of cultural influences on behavior in groups underrepresented in research. [Diversity science](#), a related topic, considers the consequences of group differences, with an emphasis on understanding racial inequality.

- **Convergence Science** - FABBS encourages the NSF to build upon convergence science in the current strategic plan. Even with broad support for the concepts of convergence science, a shift will require incentives to move away from more traditional and siloed approaches. The NSF should provide some concrete examples of the steps necessary to build an interdisciplinary team around a common problem, as well as provide a model of what success would look like. When considering the opportunities and obstacles to advancing convergent science, the NSF should examine considerations within the scientific ecosystem. To what degree are journals discipline specific? How might convergent science impact chances of scholarly publication? How does typical academic training prepare scientists for interdisciplinary work?

The BRAIN initiative provides a useful example. The NSF's future activities in these areas would benefit from a focused and expanded effort on theoretically guided research on mind, behavior, cognition, and affect. The intersection of neuroscience, education, behavior, and cognition also deserves attention.

- **Clinically Relevant Research** – Many clinical scientists are doing research that fits well within NSF's mission and portfolio. However,



FABBS scientists are often confused about the opportunities for clinical scientists, including graduate students in the NSF GRFP and training awards. Along with the potential for overlap of NIH and NSF funding for the clinical sciences, gaps are also a risk. The clinical science community would benefit from a clear understanding of how the NSF and NIH fill complementary roles investing in clinically-relevant science. Along these lines, FABBS encourages additional investment in related research areas, such as mental health and well-being, and connections between social problems like systemic racism and inequity and their ties to mental health.

How can NSF help maintain US leadership in an evolving global research and education landscape?

Diversifying science and the scientific workforce – domestically and internationally – supports U.S. efforts to maintain its global leadership. Accordingly, the NSF should continue to facilitate international collaboration balanced with security. To this end, the NSF should identify external obstacles to international collaborations and remove barriers, where appropriate, for foreign students to be part of U.S. research efforts.

How can the plan best underscore the importance to the Nation of fundamental research and its broader impacts?

Undoubtedly, research funded by the NSF is foundational to numerous aspects of the focus on ‘health, prosperity, and welfare, and national defense.’ COVID-19 has made this abundantly clear. The NSF should emphasize its role in supporting STEM education and the STEM workforce, clarifying complementary efforts across federal agencies. The NSF should reiterate the unique mission to advance science including methodologies, training, and rigor and how this foundational role supports science, discovery, and innovation across the federal government. FABBS recognizes that the ability of the NSF to connect the dots from basic science to tangible benefits is intertwined with the scientific literacy of our nation.

When thinking about the importance of fundamental research, it is interesting to consider current incentive structures and the message that they send to the researchers themselves. For example, many FABBS scientists question the adequacy of evaluating the productivity of science by number and prestige of peer review journal articles, while recognizing that publishing is critical to their professional advancement. Increasing an understanding of the importance of the NSF requires expanding incentives and rewards for effective science communication to local communities, media, policy makers, practitioners, and the broader public. This would benefit the ultimate goal of increasing the impact of science.



The NSF has made important progress creating opportunities to translate knowledge to market in technology. FABBS encourages the NSF to consider how a similar effort to translate/ incorporate the behavioral and cognitive sciences to policies and practices that improve quality of life would look. Two examples come to mind. In the article "[*Should the Science of Adolescent Brain Development Inform Public Policy?*](#)", Laurence Steinberg, who has received funding from the NSF, explains how new knowledge about adolescent brain development has the potential to impact a wide range of policy questions. A second example can be found in [*The Merit Review Process Fiscal Year 2019 Digest*](#). In explaining the decrease in applications to the NSF in FY 2019, this report mentions the decision of two science directorates to remove grant deadlines, inviting proposals throughout the year. This decision led to a decrease in applications received and consequently increased success rates. These two examples demonstrate the value of behavioral and developmental science to inform policy and practice.

Finally, in the process of updating the strategic plan, FABBS encourages the NSF to further clarify what is meant by "broader impacts" for the purposes of evaluating grant and fellowship proposals. According to [*The Merit Review Process Fiscal Year 2019 Digest*](#), grant application reviewers too often indicate "broader impacts are acceptable" when evaluating proposals. The NSF, applicants, and reviewers all have a role to play in improving the value of the articulation and assessment of the broader impacts of grant proposals. Recognizing that the broader impacts criterion was established legislatively in the COMPETES Act (42 USC §1862p–14), FABBS encourages the NSF to see the criterion as an opportunity to challenge researchers to articulate the value of their work when considering the full spectrum of possible contributions to advance science, disseminate knowledge, spark innovation, and increase diversity.

Thank you for the opportunity to provide this feedback. We would welcome the opportunity to discuss any of these points further and be a resource as you work to update the NSF strategic plan.

Best,

Juliane Baron
Executive Director