NSF Funding Webinar - Social, Behavioral, and Economic Sciences

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Deputy Assistant Director, SBE
National Science Foundation
August 20, 2020
Welcome to all Attendees!

• Georgetown University
• Catholic University of America
• George Mason University
• Central Washington University
• NASEM
• NIIF
• SFS
• UC Berkeley
• University Maryland at Baltimore County
• University of the District of Columbia
• University of Virginia
• And more…
NSF in a Nutshell

• Created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..."

• Annual budget of about $8.1 billion (Fiscal Year 2019) funds approximately 24 percent of all federally supported basic research conducted by America’s colleges and universities
Leadership and Organization

Dr. Sethuraman Panchanathan
NSF Director

The National Science Board
# NSF Organization

## Directorates
- Biological Sciences
- Computer & Information Science & Engineering
- Education & Human Resources
- Engineering
- Geosciences
- Mathematical & Physical Sciences
- Social, Behavioral & Economic Sciences

## Office of the Director
- Legislative & Public Affairs
- General Counsel
- Integrative Activities
- International Science and Engineering
- Diversity and Inclusion

## Administrative Offices
- Budget, Finance, and Award Management
- Information & Resource Management
NSF Funds All Fields of Science & Engineering
NSF Support of Academic Basic Research in Selected Fields

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

All Science &... 24%
Physical Sciences 40%
Engineering 41%
Environmental Science 59%
Mathematics 61%
Social & Psychological... 67%
Biology 68%
Computer Science 82%
Directorate for Social, Behavioral and Economic Sciences

- **Archaeology**
- **Biological Anthropology**
- **Cultural Anthropology**
- **Human Networks and Data Science**
- **Social Psychology**
- **Cognitive Neuroscience**
- **Developmental Sciences**
- **Science of Learning and Augmented Intelligence**
- **Linguistics & Dynamic Language Infrastructure**
- **Perception, Action and Cognition**

- **Economics**
- **Accountable Institutions and Behavior**
- **Security and Preparedness**
- **Sociology**
- **Decision, Risk and Management Sciences**
- **Law and Sciences**
- **Methodology, Measurement and Statistics**
- **Science of Organizations Studies**
- **Secure & Trustworthy Cyberspace**
- **Ethical and Responsible Research**

- **Measuring**
  - The Nation’s Investment in R&D
  - The education and workforce characteristics of scientists and engineers
- **Developing indicators of the Nation’s competitiveness and innovation capacity**
- **Supporting research on the science and technology enterprise**

Office of Multidisciplinary Activities
- **Research Experiences for Undergraduates Sites**
- **SBE Postdoctoral Research Fellowships**
- **Science of Science: Discovery, Communication & Impact**
The STEM Workforce and Talent Landscape
NSF and SBE’s Response to the COVID-19 Pandemic

**RAPID funding mechanism**

**CARES Act**
- 73 awards = $9.5M
- With regular appropriations
  - 200 awards = $27M
University of Memphis
RAPID: Systemic Differences in Employee Outcomes from COVID-19 and the Effectiveness of Organizational Response

The COVID-19 pandemic has forced millions of employees to: (a) work remotely, (b) continue to work in low-paying “essential” work, at great risk to their own health, or (c) face sudden unemployment.

This research will study how these changes have impacted people from different demographic and socioeconomic backgrounds.
Social distancing measures have taken on a sense of urgency in population-dense metropolitan areas, which host a large portion of the COVID-19 cases.

This research captures how new forms of spatial behavior emerge, while testing how existing theories of spatial behavior hold under extraordinary circumstances. This will be done by capturing and coding immersive, first-person, geolocated video-diaries of metropolitan residents going about their daily streetscape activity, as life shifts to adapt to new social distancing and curfew orders.
NSF’S
10 BIG IDEAS
"... bold questions that will drive NSF's long-term research agenda — questions that will ensure future generations continue to reap the benefits of fundamental S&E research."
The SBE sciences are engaged in most of the 10 Big Ideas!

- Harnessing the Data Revolution
- Future of Work at the Human Technology Frontier
- Navigating the New Arctic
- Rules of Life
- INCLUDES
- Mid-Scale Research Infrastructure
- Growing Convergence Research
- NSF 2026

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- Windows on the Universe
- Quantum Leap
Harnessing the data revolution for 21st-Century science and engineering

There are three principal components of the Harnessing the Data Revolution big idea:

1. Research - across all NSF Directorates
2. Educational pathways - Innovations grounded in an education-research-based framework
3. Advanced cyberinfrastructure - accelerating data-intensive research
The Future of Work at the Human-Technology Frontier

“...to understand and explain how constantly evolving technologies are changing the world of work and the lives of workers and how people can in turn shape those technologies”

Research Themes
• Building the human-technology partnership
• Augmenting human performance
• Illuminating the socio-technological landscape
• Fostering lifelong learning
Navigating the new Arctic (NNA)

• Establishing an observing network of mobile and fixed platforms and tools across the Arctic
• Documenting and understand the Arctic's rapid biological, physical, chemical, and social changes
Understanding the Rules of Life

Rules that explain and predict living systems.
- Cross spatial, temporal, organizational scales
- Interaction of biological components and environment
INCLUSION ACROSS THE NATION OF COMMUNITIES OF LEARNERS THAT HAVE BEEN UNDERREPRESENTED DISCOVERERS IN ENGINEERING AND SCIENCE (NSF INCLUDES)

• Long-term goal: fund new research, models, and partnerships that lead to demonstrable progress in meeting the challenge of broadening participation in science and engineering

• FY 2016
  • NSF INCLUDES Network Design & Devt Pilots
  • NSF INCLUDES Alliances

• FY 2017
  • NSF INCLUDES Alliances
  • NSF INCLUDES Backbone Organization
  • Supplements to link projects in current portfolio
NSF Cross Directorate Research Priorities

Understanding the Brain (UtB)

Secure and Trustworthy Cyberspace (SATC)

Smart and Connected Communities (S&CC)

Cyberlearning for Work at the Human-Technology Frontier (Cyberlearning)

Integrative Strategies for Understanding Neural and Cognitive Systems (NCS)

Collaborative Research in Computational Neuroscience (CRCNS)

Innovation Corps (I-Corps)
NSF Programs for Graduate Students and newer PIs

- Doctoral Dissertation Research Improvement Grants (DDRIG)
- Postdoctoral Research Fellowships
- Graduate Research Fellowships
- National Science Foundation Research Traineeship (NRT) Program*
- Robert Noyce Teacher Scholarship Program
- PI standard awards*
There are some exceptions to submission procedures (e.g., individual awards such as postdoctoral fellowships)
Navigating NSF Documents/Websites
Review the SBE Programs Page: https://nsf.gov/funding/programs.jsp?org=SBE
Find the Right Program (e.g., DS program webpage)

Who is the Program Director?

How do you contact the Program Director?

How do you apply? Program Description vs. Solicitation

When do you apply?

Target date or deadline?
Find the right program: (scrolling down....)

How do I know if my research is relevant to a particular program?

Click this!
Find the Right Program: Awards recently made

What has been funded through a particular program?

Click on a title to get the abstract
Find the Right Program: Abstracts of Awards Recently Made

You can review the abstracts of awards made through a particular program.

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<table>
<thead>
<tr>
<th>Program Manager:</th>
<th>Chandra Bryant</th>
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<tbody>
<tr>
<td></td>
<td>BCS Division Of Behavioral and Cognitive Sci</td>
</tr>
<tr>
<td></td>
<td>SBE Direct For Social, Behav &amp; Economic Sci</td>
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<tr>
<td>Start Date:</td>
<td>September 1, 2018</td>
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<tr>
<td>End Date:</td>
<td>August 31, 2021 (Estimated)</td>
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<tr>
<td>Awarded Amount To Date:</td>
<td>$756,655.00</td>
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Investigator(s): Marianna Cassola mc272@cornell.edu (Principal Investigator)
Lisa Davis (Co-Principal Investigator)
Vanessa Lohr (Co-Principal Investigator)
Felix Theunis (Co-Principal Investigator)

Sponsor: Cornell University
273 Pine Tree Road
Ithaca, NY 14850-2820 (607)255-5014

NSF Program(s): D.S. - Developmental Sciences

Program Reference Code(s): 1698
Program Element Code(s): 1698

Note:
- Program Manager
- Duration
- Awarded amount
- Co-funded?
- Topic area

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**ABSTRACT**

Mental rotation, the ability to mentally manipulate a visual representation of an object and recognize its appearance from a different orientation, shows stability from infancy through preschool. This ability predicts mathematical achievement in kindergarten and beyond as well as entry into the Science, Technology, Engineering, and Mathematics (STEM) fields. The present work focuses on identifying how non-spatial processes contribute to mental rotation abilities. Findings will help identify ideal time points for intervention, advance understanding of the factors that contribute to mental rotation, and address how individual differences in mental rotation during infancy predict later abilities. This work will involve the creation and refinement of measures that can be used to trace the development of mental rotation from infancy into preschool; thereby, not only contributing new tools to the field, but also yielding insights that can inform current theoretical conceptions of mental rotation and its relation to non-spatial processes.

The critical research question is as follows: What are the non-spatial processes that contribute to mental rotation abilities and their development? Associations between mental rotation, object features, processing bias, and motor experience will be examined using a crosssequential design with overlapping age cohorts. The investigators will recruit an infant cohort at 8 months, a toddler cohort at 20 months, and a preschool cohort at 3 years. Each cohort will be assessed at three time points: every six months for infants (i.e., 8, 14, and 20 months), every 8 months for toddlers (i.e., 20, 26, and 36 months), and every year for preschoolers (3, 4, and 5 years). When examined at a specific age, the sample will provide a snapshot into the association between mental rotation and non-spatial skills (i.e., object features, processing bias, and motor experience). The longitudinal design will allow the investigators to follow participants across infancy, toddlerhood, or the preschool years. This approach provides an opportunity to understand how non-spatial skills, such as more precocious motor skills during infancy, may shape mental rotation over time. Such findings are central to bolstering understanding of the possible mechanisms by which particular types of
Preparing your Application
Before you apply... READ!!!
Next Steps

After you have narrowed down to programs that match your area of research and you have read the program page and (solicitation):

If you are unsure regarding whether your work fits a given program, reach out to that Program Director by EMAILING a 1-page summary of your planned research project (IM and BI). Get feedback about project fit with program goals

Email ALL relevant programs in a SINGLE email.

Request a phone meeting if the program is a good fit.
- Make this request EARLY (well before the deadline)
- Follow-up if you have not heard back within 1- week
- Ask about other relevant programs and initiatives
Starting a Grant Submission: Your University Submits the Grant Proposal, Not You!

• Start your budget and figure out the direct costs on the activities that you have planned.

• Email your Sponsored Research Office
  • Get a Fastlane ID and log in and start on shorter, but required documents
  • Bring your budget draft to make sure that all necessary costs are included in calculations.
  • Find out what your campus requires for routing timelines and internal approvals are needed. Many campuses require grants to be signed off before the actual grant deadline. Plan for this time.

• Be nice to your SRO
Your Sponsored Research Office (SRO)

• The Sponsored Research office is the authority on the universities' guidelines for research proposals submission to outside entities. They are also instrumental in obtaining official signatures and Fastlane submission.

• Your SRO can help you understand requirements (sections required, page limits, etc.)

• SROs help to develop your budget and determine annual and total costs (includes direct costs to carry out the project and indirect costs – a rate negotiated by your institution and NSF)
Typical Components of an NSF Grant Proposal

- Cover Page
- Project Summary (1 page)
- Table of Contents (auto-generated)
- Project Description (15 pages)
- References cited
- Biographical sketches (for all senior PIs on the project)
- Budget
- Current and Pending Support
- Facilities, Equipment, and other Resources
- Post-doctoral mentoring Plan (if applicable)
- Data Management Plan
- Supplemental Documentation (if applicable—no letters of support)

Collaborators and Other Affiliators Document

* Programs may deviate from this list – be sure to read the solicitation closely
Defining the Proposal Budget

- Be attentive to the PAPPG and the different budget categories and what they allow.

- Starting your grant proposal with the budget will help you determine what the scope of the activities are.

- Personnel costs, whether PI salary, graduate assistantships, or postdocs, add up quickly once the salary, fringe, and IDC are calculated.

- Work with your SRO to understand what costs are allowable, what costs are required (for example, fringe or tuition), and what the final total will be once IDC is calculated.
SBE Data Management Plan

Announcements
Dear Colleague Letters Read More
International Collaboration Read More
Data Management Plan for SBE Proposals and Awards Read More

News
NSF announces $78.2 million to support frontiers of cybersecurity, privacy research
OCTOBER 24, 2018
NSF’s 10 Big Ideas
OCTOBER 19, 2018
Important Notice for the Recruitment of a new Division Director for Social and Economic Sciences
SEPTEMBER 6, 2018
NSF Review Criteria

**Intellectual Merit** -
Encompasses the potential to advance knowledge

**Broader Impacts** -
Encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes
Intellectual Merit

• Will the proposed activity advance basic science, knowledge, and understanding within its own field or across different fields?
• Is the project likely to be successful?
  • Qualifications of the proposer/team
  • Sufficient access to resources
• To what extent does the proposed activity explore creative and original concepts?
• How well-conceived and organized is the proposed activity?
Broader Impacts: the potential to benefit society and contribute to the achievement of specific, desired societal outcomes

- Demonstrate societal impacts with specificity
- Disseminate results broadly to enhance scientific and technological understanding
- Make data available to others, where applicable/appropriate (public access)
- Enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships
- Broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)
- Promote teaching, training and learning
Common Pitfalls to Avoid

• Overlooking key aspects of the program announcement and requirements

• Lacking specificity about methods and/or predictions

• Underdeveloped or vague data analysis plan

• Disconnect between framing/motivation and proposed activity

• Failing to establish feasibility

• Not tailoring your proposal to the appropriate audience (disciplinary vs. multidisciplinary panel)
Common Myths

- NSF only funds scholars at elite institutions
- NSF only funds “famous” academics
- Once declined, always declined
- Advisory committees make funding decisions
Your Proposal is Declined. What now?

• Develop a thick skin.
• Take time to digest the reviews and then get back up and plan to resubmit if you can address weaknesses noted in the reviews
  • Persistence can pay off!
• Carefully consider how you will address all weaknesses (you don’t get extra space) or whether you need to reformulate the project
• Schedule a time to talk to the program director (after you have had time to digest the reviews) to discuss the appropriateness and plans for resubmission
Questions
Thank you!

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