Understanding NSF

Office of Research Development
Karen Drew, Director
Logan Schmidt, Sr. Research Development Officer
Jenna Horan, Research Development Administrator
Our Panelists

Sandra Shefelbine, Associate Professor
Department of Mechanical & Industrial Engineering;
Affiliated with Bioengineering

Phil Brown, University Distinguished Professor
Departments of Sociology, Health Sciences
Director, Social Science Environmental Health Research Institute

Rob Platt, Assistant Professor
Khoury College of Computer and Information Sciences
Presentation Overview

• Introductions

• NSF Basics: Fitting Project to Program & Mission

• NSF Review Process

• Panel Discussion

• Q&A
NSF’s Mission

• To promote the progress of science

• To advance the national health, prosperity, and welfare

• To secure the national defense
NSF’s Goals

• To advance the frontiers of knowledge

• To cultivate a world-class, broadly inclusive science and engineering workforce

• To expand the scientific literacy of all citizens

• To build national research capacity through infrastructure and facilities

• To support excellence in scientific research and education through capable & responsive organization
Types of Funding Opportunities

**Program Descriptions**
Proposals for a Program Description must follow the instructions in the PAPPG.

**Program Announcements**
Proposals for a Program Announcement must follow the instructions in the PAPPG.

**Program Solicitations**
Proposals must follow the instructions in the Program Solicitation; the instructions in the PAPPG apply unless otherwise stated in the solicitation.

**Dear Colleague Letters**
Dear Colleague Letters are notifications of opportunities or special competitions for supplements to existing NSF awards.
NSF’s 10 Big Ideas

Includes: Enhancing diversity

NSF 2026: Integrative Foundational Fund

Understanding the Rules of Life: Predicting Phenotype

Work at the Human-Technology Frontier: Shaping the Future

Mid-Scale Research Infrastructure

Multi-messenger Astrophysics

Navigating the New Arctic

Harnessing Data for 21st Century Science and Engineering

The Quantum Leap: Leading the Next Quantum Revolution

Growing Convergent Research at NSF

Available at: https://www.nsf.gov/about/congress/reports/nsf_big_ideas.pdf
How NSF is Organized

National Science Board (NSB)

Director Deputy Director

Office of the Inspector General (OIG)

Biological Sciences (BIO)

Computer & Information Science & Engineering (CISE)

Engineering (ENG)

Geosciences (GEO)

Mathematical & Physical Sciences (MPS)

Office of Diversity & Inclusion

Office of the General Counsel

Office of Integrative Activities

Office of International Science & Engineering

Office of Legislative & Public Affairs

Social, Behavioral & Economic Sciences (SBE)

Education & Human Resources (EHR)

Budget, Finance & Award Management (BFA)

Information & Resource Management (IRM)
NSF Directorate for Engineering

Emerging Frontiers and Multidisciplinary Activities (EFMA)
Sohi Rastegar

Senior Advisor for Science and Engineering
Mihail Roco

Assistant Director
Dawn Tilbury

Deputy Assistant Director
Linda Blevins

Budget Officer
Darren Dutterer

Operations Officer
Judy Hayden

Engineering Education and Centers (EEC)
Don Millard (Acting)

Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
Richard Dickinson

Civil, Mechanical, and Manufacturing Innovation (CMMI)
Mary Toney (Acting)

Electrical, Communications, and Cyber Systems (ECCS)
Fil Bartoli

Industrial Innovation and Partnerships (IIP)
Barry Johnson
Who becomes a Program Officer?

• Rotating Program Officers
  – Temporarily rotate from positions in academia and industry
  – Serve 1-4 year terms
  – Al Soyster, former Dean of COE
    • Spent 4 years as head of ERC program
  – Misha Pavel, Prof of the Practice CCIS & Health Sciences
    • Head of the Smart and Connected Health program

• Career Program Officers
  – Scientists and engineers who (often) ran academic labs, left for NSF, decided to stay at NSF
Many ways to make contact with POs

➢ NSF Grants Conferences
➢ Professional Conferences
➢ Meet-and-greet travels to DC (often organized by College)
➢ Webinars/Q&A
➢ Email updates & Twitter
NSF Grants Conference & Outreach Activities

Available at: https://nsfgrantsconferences.com/resource-center/
NSF Email updates

To sign up for updates or to access your subscriber pre-information below.

Email Address

SUBMIT  CANCEL

Your contact information is used to deliver requested updates or to access your subscriber preferences.

Available at https://service.govdelivery.com/accounts/USNSF/subscriber/new

Engineering (ENG)
- Discoveries - Engineering (ENG)
- Events - Engineering (ENG)
- Forms - Engineering (ENG), including NSF-wide
- General Information - Engineering (ENG), including NSF-wide
- News - Engineering (ENG)
- Newsletters/Journals - Engineering (ENG), including NSF-wide
- Policies and Procedures - Engineering (ENG), including NSF-wide
- Program Announcements and Information - Engineering (ENG), including NSF-wide
- Reports - Engineering (ENG), including NSF-wide
- Upcoming Due Dates - Engineering (ENG)
- Vacancies - Engineering (ENG)
- Engineering Directorate Announcements

Privacy Policy - Help
Twitter has timely news and updates

NSF Engineering
@NSF_ENG

NSF welcomes Richard Dickinson, division director for Chemical, Bioengineering, Environmental & Transport Systems! bit.ly/2vIK7mU

NSF Comp & Info
@NSF_CISE

You still have time!

NineSigma @NineSigma
Extended deadline for the #HearablesChallenge! Submissions are due 6/30 by 5 PM ET! @NSF @NSF_CISE 9sig.co/NSFHearables

NSF SBE
@NSF_SBE

It is not too late to register for tomorrow’s webinar: Navigating the Research Funding Terrain bit.ly/2tvA7eU

7:10 AM - 16 Aug 2017 from Chantilly, VA
Fitting Project to Program and Mission

- Read the mission statement of the directorate, division, and program that you’ve identified
- Read the website *beyond* the mission statement (strategic plan, big ideas, etc.)
- Search recently funded awards to determine what the directorate/program has funded before
- Identify your program officer
- Email the PO with a snapshot of your ideas and ask for a call
- Talk to the PO about program fit, fundability, feasibility, other options
How to contact your PO

• After all due diligence, email your PO with a brief (!) outline of your project and a request for a call

• Expect a 30 minute call appointment

• Ask about: program fit, if there are any other programs they would recommend, any problems they anticipate

• **Listen** to the PO, and give them time to speak

• Ask if they would encourage you to apply for the next funding cycle with this project

• Offer to be a reviewer
NSF Review Process

Types of Review

**Ad hoc:**
Proposal sent out for review

- Ad hoc reviewers generally have specific expertise in a field related to the proposal
- Some proposals may undergo ad hoc review only

**Panel:**
Face-to-face review sessions

- Panel reviewers usually have a broader scientific knowledge
- Some proposals may undergo review by multiple panels (particularly those with cross-cutting themes)
Types of Review

**Internal:**
NSF Program Officers only
- RAPID response grants
- EA-ry concepts Grants for Exploratory Research (EAGER)
- Proposals for conferences or workshops

**Combination:**
Both Panel and *Ad Hoc* Review
- Many types of proposals undergo both panel and *ad hoc*
- Often done when the PO wants specific scientific expertise from *ad hoc* with the breadth of a panel review
Standard NSF Review Criteria

• **Intellectual Merit**: Advance knowledge within the field or across different fields

• **Broader Impacts**: Benefit society or advance desired societal outcomes

• To what extent do the proposed activities suggest and explore **creative**, **original**, or potentially **transformative** concepts?

• Is the **plan** for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to address success?

• How **well-qualified** is the organization, individual, or team to conduct the proposed activities?

• Are there **adequate resources** available to the PI (either at home organization or through collaborations) to carry out the proposed activities?
NSF Mock Review Session

NSF Proposal Review Panels

Available at: https://www.nsf.gov/news/mmg/mmg_disp.jsp?med_id=81278
Funding Decisions

• The merit review panel summary provides:
  – Review of the proposal and a recommendation on funding.
  – Feedback (strengths and weaknesses) to the proposers.

• NSF Program Officers make funding recommendations guided by program goals and portfolio considerations.

• NSF Division Directors either concur or reject the Program Officers’ funding recommendations.
Post-Review: Funded!
Or…Revise and Resubmit!

✓ Read the reviews carefully

✓ Talk to the program officer

✓ Take a look at who was funded

✓ Revise with reviews in mind – but you won’t have the same review panel next time
Upcoming Workshops

How to be successful at NIH
Wednesday, February 13: 11:30 am – 1:00 pm

Responding to reviews for resubmission success
Thursday, March 28: 11:30 am – 1:00 pm

How to succeed: A discussion with NSF CAREER recipients
Wednesday, April 24: 11:30 am – 1:00 pm

Resources and Strategies for NSF Broader Impacts and Educational Design for Broader Impacts
Wednesday, May 15: 11:30 am – 1:00 pm

Writing an NSF CAREER Summary: An interactive workshop
Wednesday, June 12: 11:30 am – 1:00 pm
Appendix: Additional resources

- Common reasons for return without review (administrative rejection)
- Broader Impacts & Resources
- Workspace transition
- Training videos
Common Reasons for Return Without Review

• Failure to address specifically intellectual merit and broader impact in the project summary and description

• Violation of formatting rules of the PAPPG (e.g. font, page length etc.)

• Failure to include Data Management Plan or Post-Doc mentoring plan (if budget includes post-doc)

• Including unauthorized appendix or other supplementary material

• Including URL’s/website links
What are “Broader Impacts”? 

• Should propose (funded!) activities that work to achieve societal goals

• Teaching undergraduate students and publishing/disseminating research is generally not enough – it must be above and beyond the regular conduct of your job

• Common activities: recruiting under-represented minorities, encouraging participation in STEM, coordinated K-12 activities, museums or other public programs outreach

• Activities also include technology transfer, entrepreneurship activities, translational impact of research, policy impact/dissemination

• Broader Impacts must also be evaluated in a rigorous way – often outside evaluators are used (and in the budget!)
Northeastern Resources for Broader Impacts

- **Center for STEM Education**, Claire Duggan
  https://stem.neu.edu/

- **Center for Advanced Teaching and Learning through Research (CATLR)**,
  https://www.northeastern.edu/learningresearch/

- **Center for Research Innovation (CRI)**, Joel Bresler
  https://www.northeastern.edu/cri/

- Many other resources on campus supporting entrepreneurship (Sherman Center, Health Science Entrepreneurs, IDEA)
Submitting an NSF grant: Workspace

Apply for Grants using Workspace
Workspace is the standard way to apply for grants in Grants.gov for both organizations or individuals. It is designed to work for individual applicants and large teams applying on behalf of an organization, so there are a variety of features for you to utilize.

Benefits of Workspace
Workspace enhances the Grants.gov Apply functionality by providing applicants with a shared, online environment to collaboratively complete and submit grant applications.

- Multiple users can concurrently complete the application forms
- Rouse/Copy existing Workspace forms
- Upfront validation allows applicants to correct application errors prior to submission, which minimized the rejection rate
- Seamless integration between online webforms and offline PDF forms
- Collaborate with Users External to Your Organization
- Any changes to the Opportunity Package are immediately reflected in Workspace

Available at: https://www.grants.gov/web/grants/applicants/workspace-overview.html
Grants.gov Youtube Channel: Tutorial Central

Available at: https://www.youtube.com/user/GrantsGovUS