National Science Foundation
Funding Opportunities and Proposal-Writing Strategies

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NSF Is an Independent Agency of the Executive Branch of the U.S. Govt.
4201 Wilson Blvd., Arlington, Virginia
The NSF Mission

- To promote the progress of science
- To advance the national health, prosperity, and welfare
- To secure the national defense

(from the NSF Act of 1950)

The NSF Vision

Advancing discovery, innovation, and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering
NSF Strategic Outcome Goals

- **Discovery**: Foster research that will advance the frontiers of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.

- **Learning**: Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.

- **Research Infrastructure**: Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.

- **Stewardship**: Support excellence in science and engineering research and education through a capable and responsive organization.
Where/Who?

- Matching your research ideas with the right agency, foundation, etc. NSF, DoE, NEH, NIH, DoD, USGS, Census, Fulbright, NIFA (USDA); NGS, Gates, etc.

- Standing programs or special opportunities?

Communicate with Program Officers!
Date: December 1 at 11 a.m.
Webcast Title: Rebuilding the Mosaic: Listening to the Future in the SBE Sciences

Dial-in phone number: 888-469-1936
Verbal Passcode: Mosaic

Webcast URL: webcast@nsf.gov (will be active on Dec. 1.)
Webcast username: webcast
Webcast password: mosaic (case sensitive)

Behavioral and Cognitive Sciences (BCS)

About BCS

The Division of Behavioral and Cognitive Sciences (BCS) supports research to develop and advance scientific knowledge about humans spanning areas of inquiry including brain and behavior, language and culture, origins and evolution, and geography and the environment. In addition to the core program areas, BCS sponsors several additional crosscutting and NSF-wide funding opportunities.

Programs and Funding Opportunities

Key: ◤ Crosscutting | □ NSF-wide
So...How do you build a fundable proposal?
A good proposal...

... has a good idea, well expressed, with a clear indication of methods for pursuing the idea, evaluating the findings, and making them known to all who need to know.
The Research Topic

- Why should we care?
- Is this a problem worth investing in?
- What is the current state of knowledge?
- How will your research build on and contribute to this body of knowledge?
Basic scientific research is grounded in a broader theoretical framework. It focuses on one or a few questions grounded in that broader framework. It uses scientifically sound approaches to assess the viability of answers to those questions. Its focused results also contribute to enhancement of broader theoretical knowledge.
How to Develop a Proposal

• Understand the ground rules
  • Read announcements and instructions carefully.
  • Read the NSF Grant Proposal Guide.
  • Make sure your project really fits the program scope.
  • Look over prior award abstracts.
  • Talk with NSF program officer about specific questions.

• Coordinate with your sponsored programs office

• Ask successful PIs for copies of their winning proposals (there are some examples of successful DDRIs on the NSF GSS Web page)
Give yourself plenty of **time**

<table>
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<tr>
<th>3 months before the deadline</th>
<th>Develop prospectus for proposal and run your idea past relevant agency program officers.</th>
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<tr>
<td>1 month before the deadline</td>
<td>Complete what you think is a very solid first draft of the entire proposal. Share it with colleagues and ask for honest, constructive advice.</td>
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<td>2 weeks before the deadline</td>
<td>Use comments to revise the proposal one or two more times.</td>
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<tr>
<td>1 week before the deadline</td>
<td>Forward the proposal to your sponsored research office (SRO) so that they can complete their work and submit the proposal a day or two before the deadline</td>
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<tr>
<td>5 months after the deadline</td>
<td>You should by this time have heard from your program officer about the status of your proposal.</td>
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Sections of an NSF Proposal

- Cover sheet
- Project Summary (one page; specifically addresses intellectual merit & broader impacts)
- Table of Contents
- Project Description (15 pages max regular & CAREER proposals; 10-12 DDRI)
- References cited
- Biographical Sketch(es)
- Budget
- Budget Justification
- Current & Pending Support
- Facilities, Equipment, & Other Resources
- Data Management Plan
- Post-doc mentoring plan
- Special Information & Supplementary Documentation
Tell your story

- Focus on what you will do
  - Not too much on the background!
- Have a solid research plan
  - Connect RQs with methods and analysis
  - Loop needs to be closed
- Create a ‘Goldilocks Budget’
  - One that is just right
  - Seek help on how to structure your budget
Appropriate Expertise

• Address this explicitly in the proposal, especially if special competence is needed.

• Bio-sketches can demonstrate competence -
  • Substantive
  • Cultural

• Interdisciplinary research
  • Demonstrate this through collaborators, consultants or subawards
What expenses should be listed in a budget?

All expenses necessary to complete the project.

- For every possible expenditure, ask yourself:
  - Is this expenditure necessary? -- or --
  - Would the research be diminished substantially if this expenditure is not made?

If you answer "Yes" to these questions...include the item in the budget.

If you answer "No," leave the item out.
Some General Tips

• Try to answer any reasonable questions that reviewers might ask about your plans

• Make sure your proposal is technically correct

• Convey enthusiasm in your writing - avoid hype

• Avoid jargon and cute/clever titles/subtitles

• Comply completely with the guidelines
When you prepare a proposal, think like those who will evaluate it

- **External reviewers**
  - Consist of specialists

- **Advisory panel members**
  - Consists of specialists and generalists; so relevant theory and technical details matter as well as broader significance.

- **Program officers**
  - We are the investors, seeking "bang for our bucks."
Decisions Will Be Based on Merit Review Criteria

Agencies usually ask reviewers to comment on specific criteria

Intellectual merit & Broader impacts
What is the **intellectual merit** of the proposed project?

- How important is the proposed activity to advancing knowledge and understanding within its own field and across different fields?

- How well qualified is the proposer (individual or team) to conduct the project?

- To what extent does the proposed activity suggest and explore creative, original and *potentially transformative* concepts?

- How well conceived and organized is the proposed activity?

- Is there sufficient access to resources?
What are the broader impacts of the proposed project?

- How well does the activity advance discovery and understanding while promoting teaching, training, and learning?
- How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, geographic, etc.)?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?
What is a Program Officer looking for?

• Significant new contributions to general scientific understandings.
• Enhancements of theoretical understandings in addition to any expansion of specific knowledge.
• Broader impacts, such as enhanced education, greater diversity, improved infrastructure or methods, and beneficial potential applications.
• Dissemination of results, especially in refereed, widely disseminated publications and more.
The Isserman Curve

Cumulative Knowledge

Projects Over Time

A
B
C
D
E
Major reasons proposals are declined

- Proposals fail to establish a sound theoretical framework and/or are poorly related to relevant literature.
- Proposals fail to specify research methods in sufficient detail or have flawed research plans.
- Plans for data analysis are insufficient.
- Theoretical frameworks are sound and research plans are solid, but they do not match up with each other.
What if your proposal is declined?

- Do not call the relevant program officer in anger!
  - Go for a walk

- Evaluate the reviews.
  - If criticisms focus on correctable points, revise and resubmit the proposal.
  - If criticisms are more general, consider other funding sources or other lines of inquiry.

- If you have questions or want additional information, contact the person who handled your proposal.
What if your proposal is funded?

- Cheer!
- Work with the funding agency to ensure that the "Bang for the Buck" is maintained during any pre-award budget discussions.
- Check with the funding agency regarding any significant changes during the project.
- Conduct the research properly and disseminate the results promptly.
- Regularly report findings, products, and contributions (even after the funding has ended).
Contact Information

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Consult the NSF web site to identify program officers for other programs or competitions.