

NSF Doctoral Dissertation Research Improvement Grant Program

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Objectives:

- Introduce participants to the NSF DDRI(G) funding opportunity;
- Explain NSF's mission, organizational structure, and merit review process;
- Provide guidance on how to prepare a competitive proposal;
- Explain why proposals get declined.

What is the DDRI(G) Program?

- Designed to improve the quality of doctoral dissertation research.
- Provides funds for items or activities not normally available through the student's university: E.g., significant data-gathering projects or to conduct field research in settings off-campus
- Does **not** provide cost-of-living, salary or other stipends or tuition.
- Does provide travel costs and per diem expenses “in the field”.

Some specifics on DDRIs

- Must be a doctoral student at a US institution.
- US citizenship or permanent resident status NOT required.
- Do not need to have passed qualifying exams or have doctoral 'candidate' status before submitting a DDRI proposal. Do need to be ready to undertake work when award is issued.
- Unlike the GRFP, a DDRI proposal is submitted by your institution on behalf of the PI.
- Your advisor or another faculty member is the PI; you, the student, are co-PI.

- This means that –
 - You need to work closely with your advisor;
 - You need to comply with Sponsored Research Office (SRO) procedures, esp. about the budget.
 - Work with your department manager and/or school grants administrators.
 - Indirect costs need to be included – (UCI's rate is 57%) [If applicable, consider requesting off-campus rates.]
- Some NSF programs limit the number of times you may apply.
- Due dates vary across NSF programs

DDRI(G) Programs in SBE Sciences

- Archeology – Open deadline
- Biological Anthropology – January 20 and July 20
- Cultural Anthropology – January 15 and August 16
- Decision, Risk, and Management Sciences – January 18 and August 18
- Economics – January 18 and August 18
- Human Environment and Geographical Sciences – Open
- Law and Science – January 15
- Linguistics – January 15 and July 15
- Linguistics: Dynamic Language Infrastructure – Open
- Methods, Measurements and Statistics – last Thursday in January and August
- Science and Technology Studies – August 3
- Science of Science – February 10 and September 9
- Sociology – October 15 (Spring competition by invitation only)

- Political Science – June 15, 2020 – now administered by the APSA
<https://www.apsanet.org/PROGRAMS/Doctoral-Dissertation-Research-Improvement-Grants>
- Psychology programs do not award DDRIs.

Agency Mission

- To promote the progress of science;
- To advance the national health, prosperity, and welfare;
- To secure the national defense. (NSF Act of 1950)
- NSF Funds Basic Science Research:
 - Research questions grounded in a broad theoretical framework
 - Results contribute to broad theoretical understanding and knowledge.

NSF does NOT fund clinical research nor overly applied research.

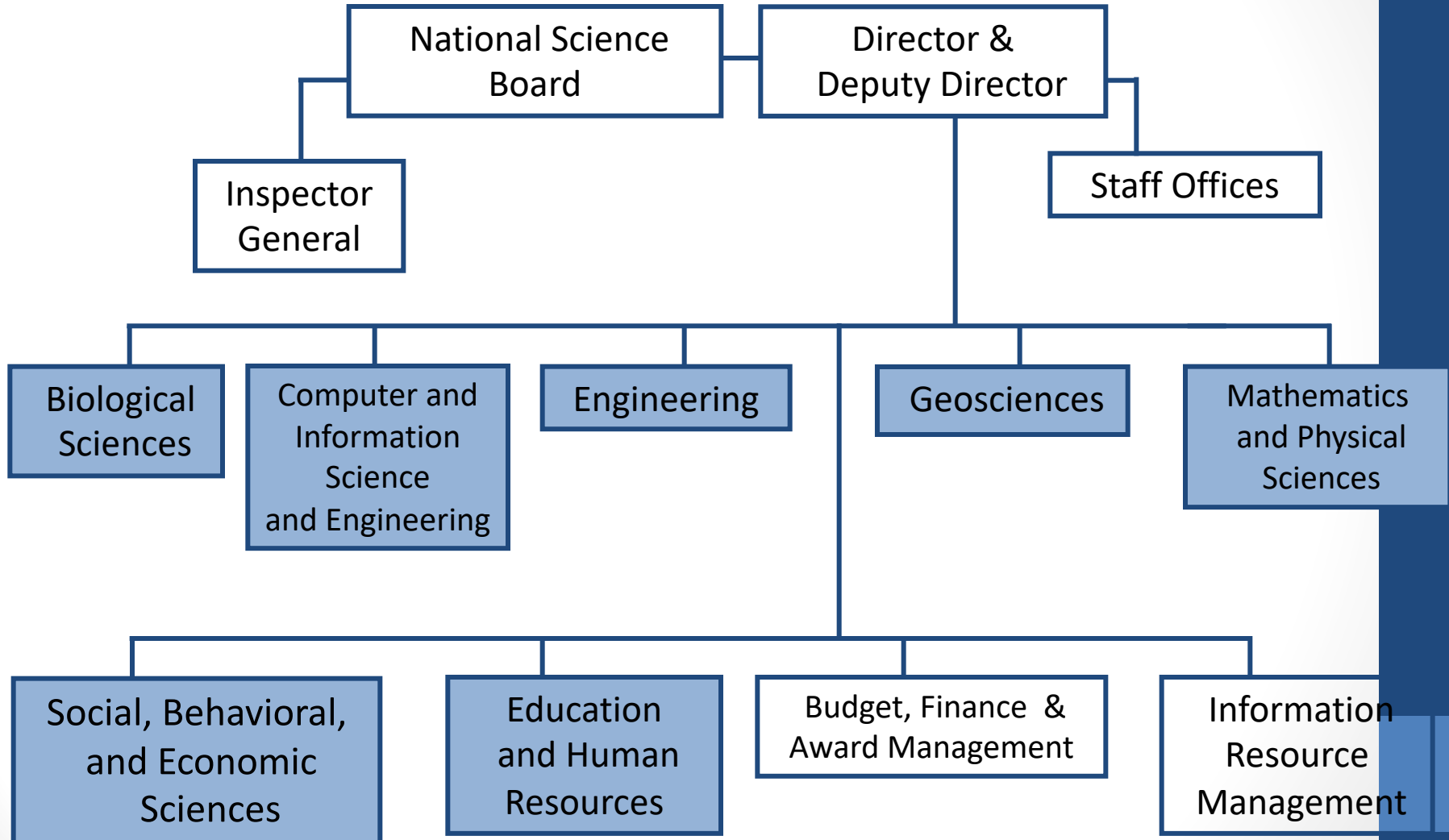
NSF DOES fund qualitative research and international research.

An institution with real people who welcome inquiries and communication

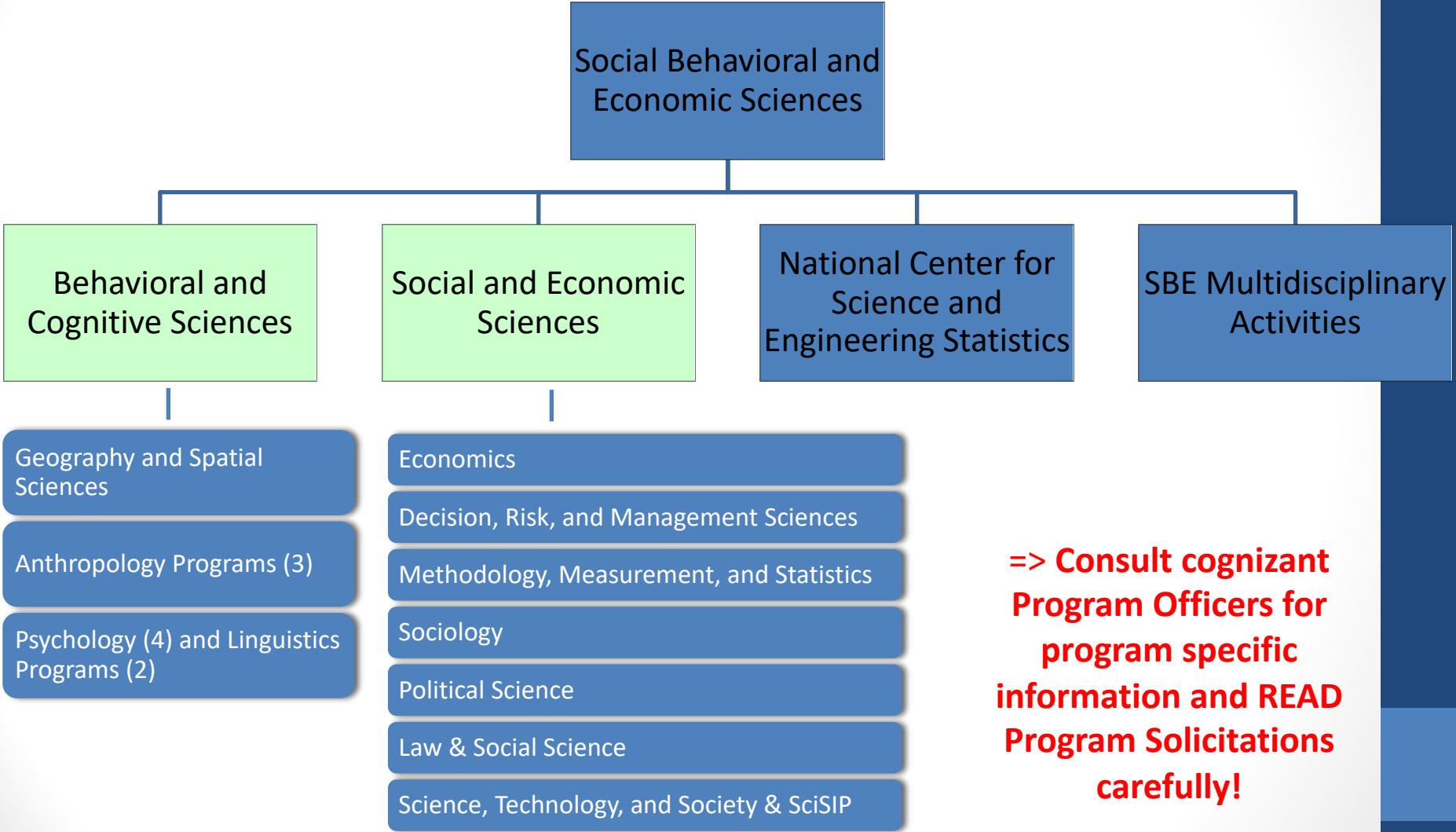


NSF moved into its new HQ at
2415 Eisenhower Ave, Alexandria, VA, in October 2017

Agency Organization & Function



Directorates are divided into Divisions; Divisions are divided into Programs or Sections



=> Consult cognizant Program Officers for program specific information and READ Program Solicitations carefully!

Important Documents



Human-Environment and Geographical Sciences Program - Doctoral Dissertation Research Improvement Awards (HEGS-DDRI)

PROGRAM SOLICITATION NSF 20-583

REPLACES DOCUMENT(S):
NSF 17-567



National Science Foundation

Directorate for Social, Behavioral and Economic Sciences
Division of Behavioral and Cognitive Sciences

Full Proposal Deadline(s):

Proposals Accepted Anytime

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation provides instructions for submission of a Doctoral Dissertation Research Improvement (DDRI) proposal to the Human-Environment and Geographical Sciences Program (HEGS), formally the Geography and Spatial Sciences Program (GSS).

This solicitation continues the limitation that permits a doctoral student to submit only two (2) DDRI proposals to HEGS.

This solicitation increases the total direct costs of support provided through a HEGS DDRI award to \$20,000. Indirect costs are in addition to this maximum direct cost limitation and are subject to the awardee's current Federally negotiated indirect cost rate.

DDRI awards may be up to two years (24 months) in duration. The dissertation does not have to be completed during that time period, but costs associated with research activities to be reimbursed with DDRI funds must be incurred when the award is active.

This solicitation continues the requirement that the advisor or another faculty member serving as the principal investigator (PI) of the proposal must submit a signed statement affirming that the student will be able to undertake the proposed research soon after a DDRI award is made. In addition, the PI must affirm that she/he has read the proposal and believes that it makes a strong case for support of the dissertation research project from the HEGS program. This statement must be submitted as a supplementary document within the proposal.

This solicitation continues the requirement that limit on the number of pages permitted in the Project Description to eleven (11) pages. All graphics, tables, and related captions must be included in the eleven pages.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide (PAPP) (NSF 20-1)*, which is effective for proposals submitted, or due, on or after June 1, 2020.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Merit Review Process

Multi-faceted Review Process

- External (Ad Hoc) Reviewers

- Specialists, so relevant theory and technical details matter.



- Advisory Panel Members

- Generalists, so broader significance matters.



- Program Officers

- Investors seeking “big bangs for our bucks.”

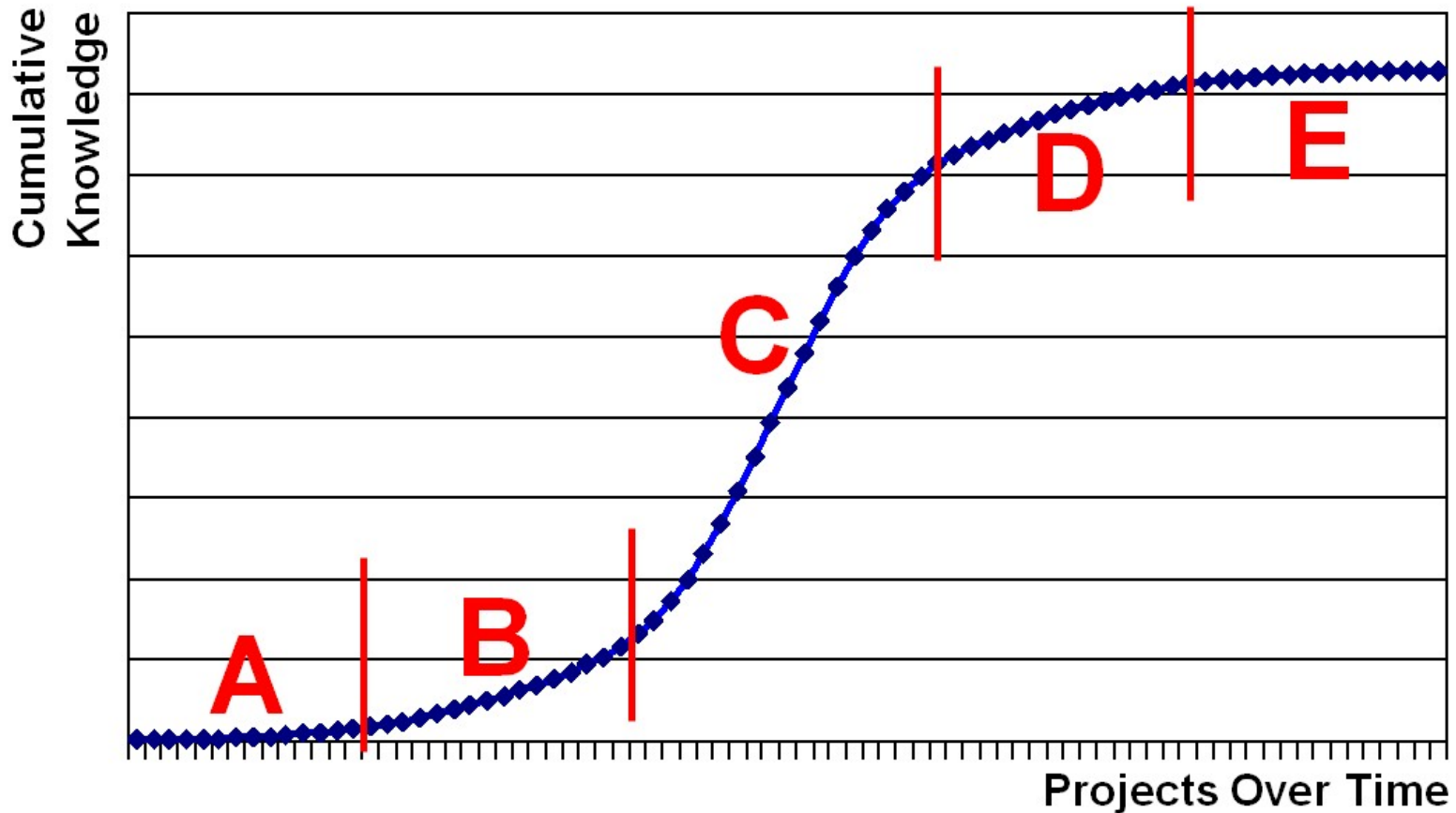


Merit Review Criteria

- Intellectual Merit: Potential to advance knowledge
 - 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 or methodology***?
 - Qualifications of investigator(s); adequacy of resources
- Broader Impacts: Potential to benefit society and contribute to the achievement of specific desired societal outcomes.
- Program-specific Special Review Criteria

Potentially Transformative Science

The Isserman Curve



Examples of Broader Impacts

- Improved STEM education and/or educator development
- Development of a diverse scientific workforce
- Enhanced infrastructure for research & education
- Increased public scientific literacy and/or public engagement with science and technology
- Knowledge, products, and other contributions of direct value to society
- Enhanced international scientific collaborations
- Contributions to public policy; national security; improved U.S. economic competitiveness
- Supports development of a PhD student

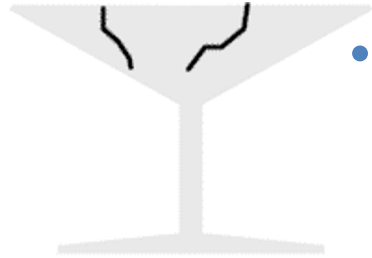
Recommendation Process

- Written reviews by ad hoc reviewers or panelists
 - Overall rating: Excellent, Very Good, Good, Fair, Poor
- Advisory Panel – Recommendation on Competitiveness for Funding
- “Bin” Approach to Recommendations (3-5 bins)

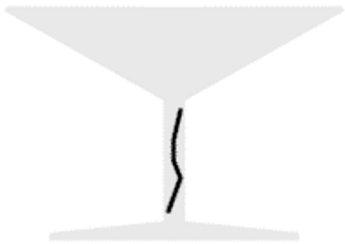


- Program Officers Make Final Decisions - Portfolio Balance Approach

Why Proposals Are Declined



- Failure to establish a sound theoretical framework and/or poorly related to relevant literature.



- Flawed research design OR failure to specify research methods in sufficient detail. Often, plans for data analysis are insufficient.



- Sound theoretical framework, solid methodology, but they don't align with each other.

Other Reasons

- Failure to respond to solicitation.
- Failure to follow directions.
- The project is too focused on a specific case.
- Project is “too applied”.
- Anticipated contribution is incremental.
- Bad Luck.

How to Prepare a Competitive (NSF) Proposal

Writing Successful Grant Proposals: General Tips

1. Give yourself plenty of TIME – start at least 3 months in advance.
2. Understand the *mission* and *objectives* of the agency and its proposal review process.
3. Design a project that addresses a compelling problem or significant scientific questions.
4. Prepare a well-written proposal that adheres to the prescribed format.
5. If at first you don't succeed, REVISE and submit again.

For NSF, ask yourself:

- 1) Why should anyone care about your research? Is this a problem worth investing in and if so, why?
- 2) What is the current state of knowledge about this problem?
- 3) How will your research build on and contribute to this body of knowledge?
- 4) What methods best serve your inquiry and is there anything novel about them?
- 5) How might (US) society benefit from your research?

NSF grants provide funds based on scientific merit, not on financial need. It's all about the Science.

A Competitive NSF Proposal

- Addresses a significant scientific problem
- Begins with a clear idea of goals and objectives
- Focuses on a set of research questions and/or hypotheses grounded in a solid theoretical framework
- Presents a scientifically sound research plan and methodology
- Provides detailed methods for data collection AND data analysis
- Articulates how the project will have broader positive impact on society

Research in Other Countries

- NSF DOES fund research in other countries
- However, it's all about framing the project description:
 - Ground the project in a broad theoretical framework
 - Make clear the generalizable findings and contributions to general theory
 - Clearly explain/justify why the selected site is ideal for investigating the proposed questions
 - Emphasize basic science over Place – the Place should be secondary to the Science

Parts of an NSF proposal

- Title Cover sheet (listing PI and co-PI)
- Project Summary (one page; Overview, Intellectual Merit & Broader Impacts)
- Table of Contents
- Project Description (10-11 in total*) – see specific program solicitation – include IM and BI sections
- References
- Biographical Sketches (PI and co-PI) *
- Budget (\$16-20K, including indirect costs – program specific)
- Budget Justification
- Current and Pending Support (for PI, co-PI)
- Facilities, Equipment, and Other Resources
- Data Management Plan (Max. 2 pages)
- Special Information and Supplementary Documentation *
- Collaborators and Other Affiliations*

* Most likely to lead to compliance problems

Practical Strategies

- READ the Solicitation and Proposal Guidelines carefully!
- Read it AGAIN
- Make a list of everything you need
- Familiarize yourself with NSF's Merit Review Criteria
- Look at who and what got funded in past
- If appropriate, contact a program officer to get feedback on your idea
- See if you can get a copy of someone else's successful proposal
- **Start early!!!!**

More Practical Strategies

- Read your drafts from a reviewer's perspective.
What questions might reviewers ask about your plans?
- Get feedback from specialists and non-specialists.
- Make sure your proposal is technically correct and free of errors. Careless writing, grammar, and math imply careless scholarship.
- Convey enthusiasm in your writing.
- Comply completely with the guidelines.
- It's not (about) You. It's (about) the Science.
- Don't write a WISCy proposal (wallowing in a specific case)
- Avoid "cutesy" or "clever" titles; instead be succinct; emphasize the basic science, not geographic places

Proposal Writing Basics

- Start with a **STRONG** introduction!
 - Present a compelling problem
 - Situate project in relevant literature – what are the gaps in knowledge?
 - What is your solution?
- Clearly define **GOALS** and **OBJECTIVES**
 - **GOAL**: General statement of the project's overall purpose
 - **OBJECTIVE**: Specific, measurable outcome(s) or milestones
- Give appropriate background information and preliminary results
 - Illustrate project concept and work plan
 - Use figures, tables, diagrams to tell story
 - Specify major tasks and timeline using charts, calendars or flow charts
- Articulate the project's scholarly significance

Pitfalls to Avoid

- Jargon, overly technical language, excessive abbreviation (don't create unnecessary acronyms) --- Non-experts will be reviewing and scoring your grant
- Unfocused or overly ambitious proposal - Be realistic about what can be accomplished (time & money)
- Last-minute submission
 - Start early, submit early to allow time to review, proof-read and include suggestions from colleagues
- Gaps in logic, preliminary data, expertise
 - Demonstrate that you are capable of doing the work, include collaborators if necessary
- Poor fit between your project and funding source

Budgets and Budget Justifications

- Should align with the proposed scope of work
- Provide a reasonable estimates of costs – don't inflate, don't underestimate – don't use federal per diems
- Itemize your expenses and quote specific prices
- Communicate both need & feasibility
- Make sure budget items are allowable under the guidelines
- Remember: failure to adequately justify expenditures will cause reviewers to question the validity of your project plan

Human/Animal Subject Approval

- Research involving human subjects requires approval by your university's Institutional Review Board (IRB)
(<https://www.research.uci.edu/compliance/human-research-protections/index.html>)
- Animal subject research requires approval by your university's Institutional Animal Care and Use Committee (IACUC)
(<https://www.research.uci.edu/compliance/animalcare-use/index.html>)
- May be pending when you submit your proposal but must be approved before an award can be issued
- Start application process early

Data-Management Plan

- The **types of data**, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project;
- The **standards** to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies);
- **Policies for access and sharing**, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements;
- Policies and provisions for **re-use, re-distribution**, and the production of derivatives; and
- Plans for **archiving data**, samples, and other research products, and for preservation of access to them.

PIs should make all other data, software, and other products of the research readily available to potential users **through institutionally based** archives, repositories, and/or distribution networks so that the **products may be easily accessed by others over long time periods.**

When/How to Communicate with a Program Officer

- Get in touch early – well before deadline.
- Send an email – don't cold-call – ask for phone appointment
- Include a one-page project prospectus. Ask for feedback on relevance for program, not substance of project. Ask if there are other programs that may be relevant for your project.
- Read all information available online first – DON'T ask questions for information that is readily available on the program or agency website. However, questions clarifying information are okay.
- If thinking about co-review by 2 or more programs, contact all relevant POs in a single message, not separately.
- **If a proposal is declined, schedule a follow-up chat to get feedback on whether and how to revise.**

Resources

- Guide to Proposal Writing-NSF -
<https://www.nsf.gov/pubs/2004/nsf04016/nsf04016.pdf>
- See specific NSF program solicitations at:
<https://www.nsf.gov/funding/index.jsp>
- UCI GUIDE: “Preparing Research Proposals in the Social and Behavioral Sciences: A Graduate Student Guide to Funding” -
<https://www.research.socsci.uci.edu/links.php>
- Other Workshop Recordings:
- <https://www.researchdevelopment.socsci.uci.edu> - under “Workshop slides and recordings” tab

QUESTIONS/COMMENTS?