

“Proposal Prep: Insights Into What Seems to Work”

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What is a proposal?

- A Proposal is a pitch to conduct research that will add, not repeat or embellish, to your field
- Must be of great interest to others - need to engage with it
- Leads reader through vision - your methodology
- Written to be appropriate to the agency interested

All federal agencies:

- Check out [grants.gov](https://www.grants.gov) to see what's available

NSF website:

- Search engine is poor. You're better off Googling for what you need: can make broad search areas
- Advanced search: search by names to see who was funded, download proposals, pick program, active or expired awards, etc.
- Quick links drop down button on top right side of website: Gives you what are the research areas, grant proposal guide, search awards, pictures, how to prepare a funding proposal

Two policy documents:

- Grant proposal guide
- Award and administration guide

Grant proposal guide (GPG):

- Guidance for prep: who can submit, what's required and what they should contain, budget info, formatting guidance
- Describe process criteria by which proposals will be reviewed
- Outlines reasons why a proposal may be returned without review

Program solicitation:

- Additional guidance for prep of proposals
- Contains deadline, target dates, or window of submission
- Research topics described
- Can be returned without review if they do not meet GPG and solicitation guidelines

Proposal life cycle:

1. By policy, if we issue a solicitation the first deadline will be at least three months in the future
2. Proposal deemed compliant
3. Undergoes merit review
4. Program officer balances the recommendation of reviewers/panels against their portfolio
5. Program officer recommends award or declines it
6. Division director concurs

7. Division of grants

Proposal prep steps:

- Start prep as early as possible!
 - Proposals usually has FAQs that you should read
- Pay attention to details and mechanics
- Get feedback: everyone should ask for help, young and old. Times change, proposals accepted twenty years ago are not accepted today
- Contact collaborators for appropriate letters to show how they will contribute to the scientific or educational activities
- Download and keep a copy of the submitted proposal and check for problems with the PDF. Ask yourself: Did it print correctly? Do the figures match up? Etc.
 - File changes/updates can be made ONLY up to the deadline (no excuses)
 - Past drafts of the uploaded proposal will not be seen by the reviewers

Merit review process:

- Most proposals at NSF require three external reviews before a program officer can recommend or decline an award
- Can be done by ad hoc, panel review only, or a combination of both

Reviewer and Panel Section:

Reviewers:

- Ad hoc panel reviewers have specific content expertise
- Have general science or education expertise

Sources of ad hoc/panel reviewers:

- Program officer has knowledge of the research area
- Lots of references
- Recent professional society programs
- Computer searches of journal articles related to the proposal
- Investigators: suggest persons to review and those not to review (make sure you don't eliminate someone who actually cares)
- There are conflict rules that eliminate certain reviewers

5 review elements on 2 criteria:

- What is the potential for the proposal activity to advance knowledge in the field and across the field; how will it benefit society?
- Does the proposal suggest and explore creative, original or transformative concepts?
- Is the plan for carrying out the proposed activities well reasoned?
 - Include in project description
- How well qualified is the individual, team, or institution? When early in career, better to play to your strengths than to branch out right away
 - Included in CV and publications
- Are there relevant resources available to the PI?
 - Linked to facilities and description page at the back

Basis for recommendation:

- Merit review (ratings are low)
- Portfolio balance

A highly competitive project:

- Novel ideal
- Well written
- Well justified
- Research plan can address the question
- Broader impact highlighted

Intellectual merit*Ask yourself:*

- What do you intend to do?
- Why is the work exciting?
- What has already been done? And why is yours better?
- How will you do the work to answer the question uniquely?
- Did you formulate a clear plan of attack that will achieve your research objective

Prepare:

- Literature and discussions with others
- Get preliminary data for research
- If you do not have access to the best facilities, whom will you partner with to gain that access?

Why others should care?

- Is this a new idea poised for a study?
- Does these new technique developments enable quantification or analysis not tractable before?
- Is it a timely topic in the community?
- More people need to be interested in it than just you
- It should not replicate previous work
- Translates to other fields

Most common mistakes:

- Work too close to what's been done before
- Not cutting edge
- Project was too large a scope or too narrowly focused
- Proposed methods/research unlikely to yield results that will address the stated goals
- The project is flawed
- Resources not available or PI has not demonstrated expertise in it

Broader impacts:

- NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally-relevant outcomes
- Full participation of everyone
- STEM
- Public scientific literacy and engagement
- Improved well being of society
- Development of a diverse, globally competitive STEM workforce
- Improved national security
- Increased economic competitiveness of the USA
- Enhanced infrastructure for research and education

Broader impacts are critical for success!!!!

- Who besides you and your group will benefit from the proposed activities?
- Take space to describe education component, societal benefits, partnerships, infrastructure development, and international experience, access to your lab for the benefit of others.
- Demonstration of previous education activities
- Leverage activities of your institution if they are relevant to your research
- Have your activities had an impact?

Data management plan:

- All proposals required to include this as a supplementary document
- Describe how the proposal will do form to NSF policy on dissemination and sharing of research results

First impressions...

- This is a proposal, not a manuscript
- If you cannot write well, take a class!
- Demonstrate that the time you took to make this proposal will be the care you put into your research project and manage your education program!
- Serve on a panel
 - Seeing 50 proposals at once is the best education

Declination is part of the game:

- Stay calm and do not get discouraged
- Read the reviews more than once
- Ask others to interpret the reviews for you
- Contact the PO only after you've had time to digest the feedback
- Resubmit only after addressing significant weaknesses: more data? Common themes in reviews? Is one component better than another? Did anyone identify a strength that you could build up for resubmission?
 - In your resubmission, do not start the proposal by noting the mistakes you fixed from the last one. The panel will be brand new, and will not know about the first proposal. Stating what you fixed will only make them look harder at those areas.

Other websites of interest:

- [NSF Regional Conference presentations](#)
- [NSF Data Sharing Policy](#)
- [NSF Merit Review Process](#)

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