Merit Review

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Ask Early, Ask Often!

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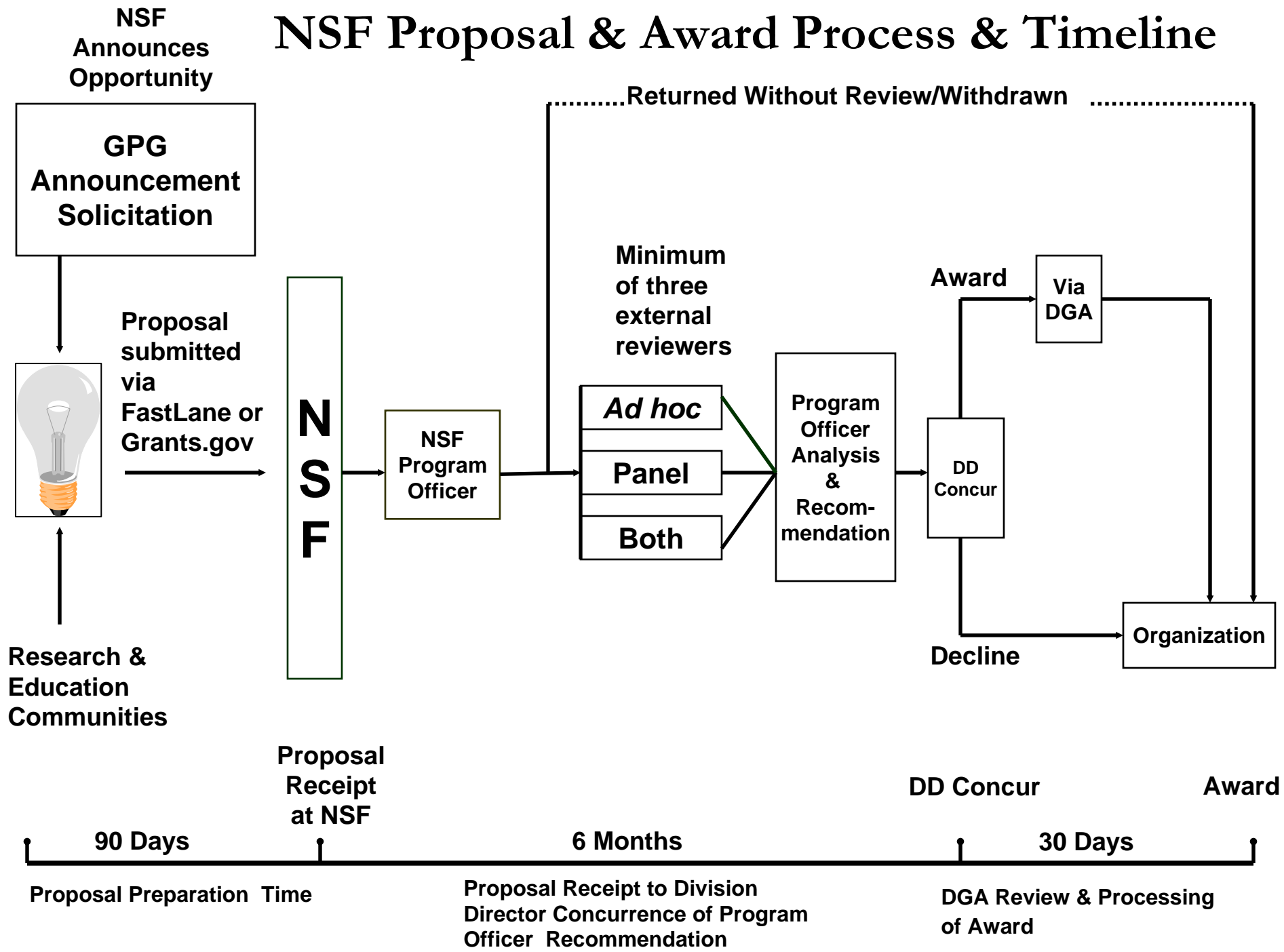
Coverage

- ➢ Proposal & Award Timeline
- ➢ NSF Merit Review Criteria
  - Intellectual Merit
  - Broader Impacts
- ➢ Return Without Review
- ➢ Merit Review Process
- ➢ Conflicts of Interest
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NSF Proposal & Award Process & Timeline

NSF Announces Opportunity

GPG Announcement Solicitation

Proposal submitted via FastLane or Grants.gov

Research & Education Communities

N S F

NSF Program Officer

Returned Without Review/Withdrawn

Minimum of three external reviewers

Ad hoc

Panel

Both

Program Officer Analysis & Recommendation

DD Concur

Award

Via DGA

Decline

Organization

Proposal Receipt at NSF

DD Concur

Award

90 Days

6 Months

30 Days

Proposal Preparation Time

Proposal Receipt to Division Director Concurrence of Program Officer Recommendation

DGA Review & Processing of Award

Reminders in Preparing a Proposal

➢ Read the funding opportunity carefully, and ask a Program Officer for clarifications if needed.

➢ Address all the proposal review criteria.

➢ Understand the NSF merit review process.

➢ Avoid omissions and mistakes.

➢ Download your completed proposal back to you to check it's what you sent!

Proposal Review Criteria

➤ National Science Board Approved Merit Review Criteria:

- What is the **intellectual merit** of the proposed activity?

- What are the **broader impacts** of the proposed activity?

➤ Program specific criteria as stated in the program solicitation.

Intellectual Merit

➤ Potential considerations include:

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

- How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.)

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

- How well conceived and organized is the proposed activity?

- Is there sufficient access to resources?

Broader Impacts

- Potential considerations include:
  - How well does the activity advance discovery and understanding while promoting teaching, training and learning?
  - How well does the activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
  - To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?

Broader Impacts (cont'd)

- Potential considerations include:
  - Will the results be disseminated broadly to enhance scientific and technological understanding?
  - What may be the benefits of the proposed activity to society?
- Examples of Broader Impacts
  - http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

Examples of Broader Impacts

➢ Advance Discovery and Understanding While Promoting Teaching, Training and Learning

- Integrate research activities into the teaching of science, math and engineering at all educational levels (e.g., K-12, undergraduate science majors, non-science majors, and graduate students).

- Include students (e.g., K-12, undergraduate science majors, non-science majors, and /or graduate students) as participants in the proposed activities as appropriate.

- Participate in the recruitment, training, and/or professional development of K-12 science and math teachers.

- Further examples at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

Examples of Broader Impacts

- Broaden Participation of Underrepresented Groups
  - Establish research and education collaborations with students and/or faculty who are members of underrepresented groups.
  - Include students from underrepresented groups as participants in the proposed research and education activities.
  - Establish research and education collaborations with students and faculty from non-Ph.D.-granting institutions and those serving underrepresented groups.
  - Make campus visits and presentations at institutions that serve underrepresented groups.
  - Further examples at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

Examples of Broader Impacts

- ➢ Enhance Infrastructure for Research and Education
  - Identify and establish collaborations between disciplines and institutions, among the U.S. academic institutions, industry and government and with international partners.
  - Stimulate and support the development and dissemination of next-generation instrumentation, multi-user facilities, and other shared research and education platforms.
  - Maintain, operate and modernize shared research and education infrastructure, including facilities and science and technology centers and engineering research centers.
  - Further examples at:
    http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

Examples of Broader Impacts

- Broad Dissemination to Enhance Scientific and Technological Understanding
  - Partner with museums, nature centers, science centers, and similar institutions to develop exhibits in science, math, and engineering.
  - Involve the public or industry, where possible, in research and education activities.
  - Give science and engineering presentations to the broader community (e.g., at museums and libraries, on radio shows, and in other such venues.).
  - Make data available in a timely manner by means of databases, digital libraries, or other venues such as CD-ROMs.
  - Further examples at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

Examples of Broader Impacts

➤ Benefits to Society

- Demonstrate the linkage between discovery and societal benefit by providing specific examples and explanations regarding the potential application of research and education results.

- Partner with academic scientists, staff at federal agencies and with the private sector on both technological and scientific projects to integrate research into broader programs and activities of national interest.

- Analyze, interpret, and synthesize research and education results in formats understandable and useful for non-scientists.

- Provide information for policy formulation by Federal, State or local agencies.

Types of Reviews

➢ *ad hoc* Review only

➢ Panel Review plus *ad hoc* Review

➢ Panel Review only

➢ "Panel Review" might include being seen by more than one panel

➢ Internal Review only, by NSF Program Officers

Reviewer Selection

➢ Types of reviewers recruited:
- Reviewers with specific content expertise
- Reviewers with general science or education expertise

➢ Sources of reviewers:
- Program Officer's knowledge of the research area
- References listed in proposal
- Recent professional society programs
- Computer searches of S&E journal articles related to the proposal
- Reviewer recommendations included in proposal or sent by email - proposers are invited to either:
  - Suggest persons they believe are especially well qualified to review the proposal.
  - Identify persons they would prefer not review the proposal.

Why Serve on an NSF Panel?

➢ Gain first hand knowledge of merit review process.

➢ Learn about common problems with proposals.

➢ Discover strategies to write strong proposals.

➢ Meet colleagues, and NSF Program Officers managing the programs related to your research.

How to Become a Reviewer

➢ Contact the NSF Program Officer(s) of the program(s) that fit your expertise:
  - Introduce yourself and your research experience.
  - Tell them you want to become a reviewer for their program.
  - Ask them when the next panel will be held.
  - Offer to send a 2-page CV with current contact information.
  - Stay in touch if you don't hear back right away.

Role of the Reviewer

- ➤ Review all proposal materials and consider:
  - The two NSF merit review criteria and any program specific criteria.
  - The adequacy of the proposed project plan including the budget, resources, & timeline.
  - The priorities of the scientific field and of the NSF program.
  - The potential risks and benefits of the project.
- ➤ Make independent written comments on the quality of the proposal content.
- ➤ Each proposal must be seen by *at least* three external reviewers (with some exceptions).

Role of the Review Panel

➢ Discuss the merits of the proposal with the other panelists.

➢ Write a summary proposal review based on that discussion.

➢ Provide some indication of the relative merits of different proposals considered

➢ Some panel reviews may be supplemented with *ad hoc* reviews, before or after the panel.

Managing Conflicts of Interest in the Review Process

➢ Primary purpose is to remove or limit the influence of ties to an applicant institution or investigator that could affect reviewer advice.

➢ Second purpose is to preserve the trust of the scientific community, Congress, and the general public in the integrity, effectiveness, and evenhandedness of NSF's merit review process.

Managing Conflicts of Interest in the Review Process

➢ WHAT IS A CONFLICT OF INTEREST? (In plain English)

- A clash between one's duty to the public interest (here service as a reviewer) and his or her private interests or allegiances.

- These may arise from personal interests, and from outside affiliations or relationships.

Examples of Affiliations with Applicant Institutions

➢ Current employment at the institution

➢ Other association with the institution such as consultant

➢ Being considered for employment or any formal or informal reemployment arrangement at the institution

➢ Any office, governing board membership or relevant committee membership at the institution

Examples of Relationships with Investigator or Project Director

➢ Known family or marriage relationship

➢ Business partner

➢ Past or present thesis advisor or thesis student

➢ Collaboration on a project or book, article, or paper within the last 48 months

➢ Co-edited a journal, compendium, or conference proceedings within the last 24 months

Return Without Review

- Per Important Notice 127, *"Implementation of new Grant Proposal Guide Requirements related to the Broader Impacts Criterion"* --
    - Proposals that do not separately address both criteria within the one-page Project Summary **will be** returned without review.
- Per the GPG postdoctoral researcher mentoring requirement
    - Proposals that include postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. The mentoring plan must not exceed one page per project.

Return Without Review

The proposal may be returned without review if it:

> is inappropriate for funding by the National Science Foundation;

> is submitted with insufficient lead-time before the activity is scheduled to begin;

> is a full proposal that was submitted by a proposer that has received a "not invited" response to the submission of a preliminary proposal;

> is a duplicate of, or substantially similar to, a proposal already under consideration by NSF from the same submitter;

Return Without Review (Cont'd)

The proposal may be returned without review if it:

➢ does not meet NSF proposal preparation requirements, such as page limitations, formatting instructions, and electronic submission, as specified in the Grant Proposal Guide or program solicitation;

➢ is not responsive to the GPG or program announcement/solicitation;

➢ does not meet an announced proposal deadline date (and time, where specified);

➢ was previously reviewed and declined and has not been substantially revised; and

➢ duplicates another proposal that was already awarded.

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 Officer's funding recommendations.
- NSF's grants and agreements officers make the official award - as long as:
  - The institution has an adequate grant management capacity.
  - The PI/CO-PIs do not have overdue annual or final reports.
  - There are no other outstanding issues with the institution or PI.

Reasons for Declines

➢ The proposal was not considered competitive by the merit review and the program office concurred.

➢ The proposal had flaws or issues identified by the program office.

➢ The program funds were not adequate to fund all competitive proposals.

Feedback to PI Information from Merit Review

➢ Reviewer ratings (E, VG, G, F, P)

➢ Analysis of how well proposal addresses both review criteria: Intellectual Merit and Broader Impacts

➢ Proposal strengths and weaknesses

➢ Reasons for a declination

If you have any questions, first contact the cognizant Program Officer.

Feedback to PI Documentation from Merit Review

➢ Verbatim copies of individual reviews, excluding reviewer identities

➢ Panel Summary or Summaries (if panel review was used)

➢ Context Statement (usually)

➢ PO to PI Comments (written or verbal) as necessary to explain a declination

If your proposal was declined, should you revise and resubmit?

➢ Do the reviewers and the NSF Program Officer identify significant strengths of your proposal?

➢ Can you address the weaknesses that reviewers and the Program Officer identified?

➢ Are there other ways you or your colleagues think you can strengthen a resubmission?

As always, if you have questions, contact the cognizant Program Officer.

NSF Reconsideration Process

- Explanation from Program Officer and/or Division Director

- Written request for reconsideration to Assistant Director within 90 days of the decision

- Request from organization to Deputy Director of NSF

Possible Considerations for Funding a Competitive Proposal

- Addresses all review criteria
- Likely high impact
- Broadening Participation
- Educational Impact
- Impact on Institution/State

- Special Programmatic Considerations (e.g. CAREER/RUI/EPSCoR)
- Other Support for PI
- "Launching" versus "Maintaining"
- Portfolio Balance

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