NSF Regional Grants Conference

NSF Merit Review Process

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> Ask Early, Ask Often!

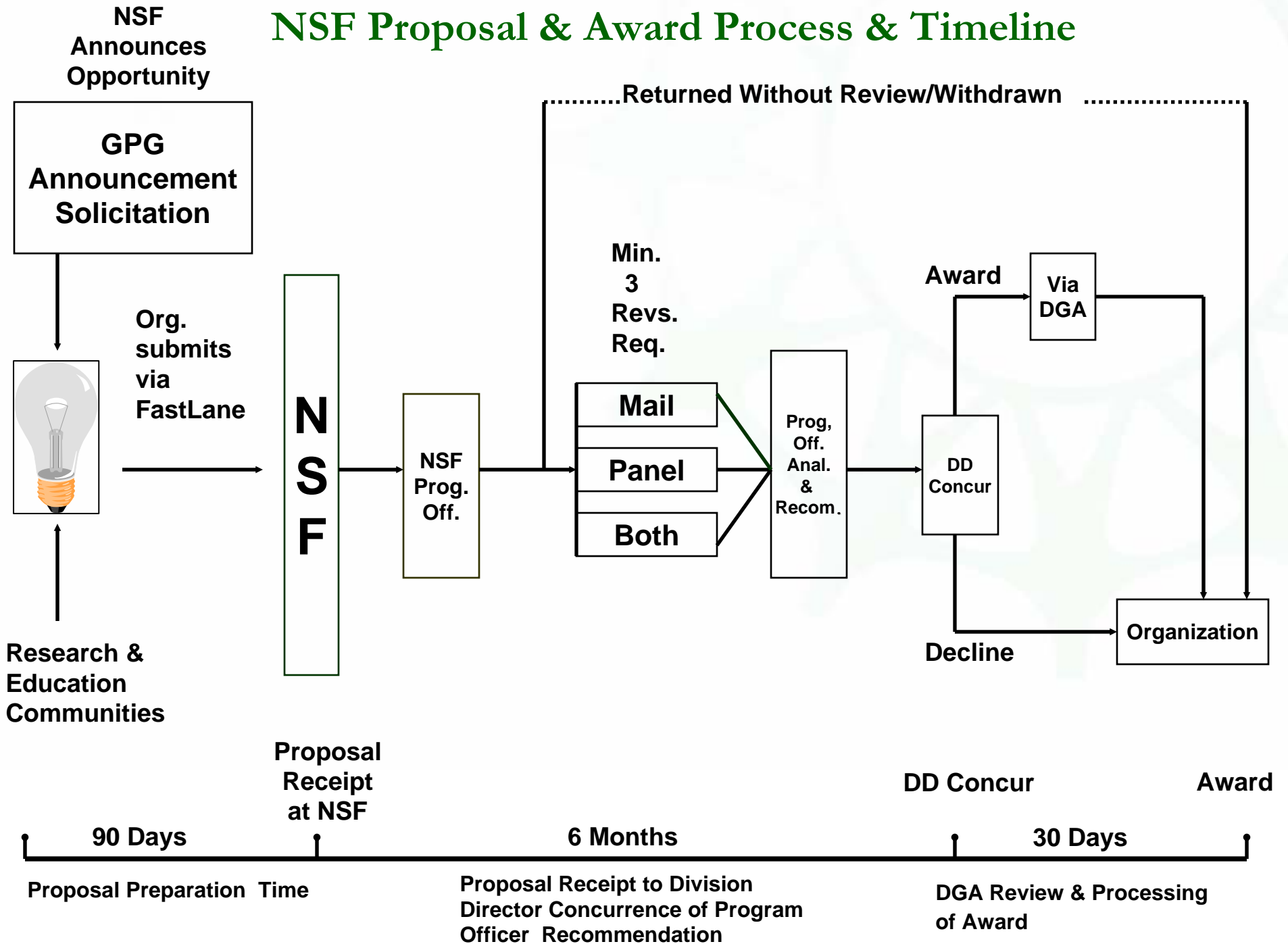| Name	Title	Contact
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Coverage

- **Proposal & Award Timeline**
- **NSF Merit Review Criteria**
  - Intellectual Merit
  - Broader Impacts
- **Return Without Review**
- **The Peer Review Process**
- **Conflicts of Interest**
- **Funding Decisions**

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NSF Proposal & Award Process & Timeline

NSF Announces Opportunity

GPG Announcement Solicitation

Org. submits via FastLane

Research & Education Communities

Returned Without Review/Withdrawn

N S F

NSF Prog. Off.

Min. 3 Revs. Req.

Mail

Panel

Both

Prog, Off. Anal. & Recom.

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

What Makes a Successful Proposal?

1. Addressing all the proposal review criteria.
2. Understanding the NSF peer review process.
3. Avoiding common omissions and mistakes.
4. Encouraging the faculty who write grants to serve as NSF peer reviewers.

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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 and original concepts?

  - How well conceived and organized is the proposed activity?

  - Is there sufficient access to resources?

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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?

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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 examles at:

    http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

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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

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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, orother venues such as CD-ROMs.
  - Further examples at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

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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.

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Reviewer Selection

- **Types of reviewers recruited:**
  - Reviewers with specialized knowledge
  - Reviewers with broad or more generalized knowledge
  - Diverse representation within the review group

- **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.

Role of the Peer 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 NSF program & in the field.
  - The potential risks and benefits of the project.

- **Make independent written comments on the quality of the proposal content.**

- **Each proposal gets *at least* three individual peer reviews.**

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Role of the Peer Review Panel

- Discuss the merits of the proposal with other panelists who reviewed the proposal.

- Write a summary proposal review based on discussion.

- Make a panel <u>recommendation</u> to NSF on whether the proposal should be funded.

- Some panels may be supplemented with ad hoc reviewers if additional expertise is needed.

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Types of Reviews

- **Ad Hoc Review**
- **Panel Review**
- **Ad Hoc plus Panel Reveiw**
- **Internal Review Only (e.g. SGERs)**
    - Panels of Program Officers
    - Less Formally Assembled Sets of Program Officers
    - Individual Program Officers

Reviewer Conflicts Procedures

- **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 peer review process**

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Examples of Affiliations with Applicant Institutions

- **Current employment at the institution as a professor or similar position**

- **Other employment 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

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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.

Return Without Review

The Proposal:

- 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

The Proposal:

- 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); or

- was previously reviewed and declined and has not been substantially revised.

Funding Decisions

Funding Decisions

- **The peer 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 – considering issues such as:**
  - The institution has an adequate grant management capacity.
  - The institution/PI do not have overdue annual or final reports.
  - There are no other outstanding issues with the institution or PI.

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Reasons for Declining a Proposal

- The proposal was not considered competitive by the peer review panel 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.

- Peer reviews, panel summaries, and program officer comments are available via FastLane once funding decisions are final for proposers to review.

- Use all of this information to improve your proposal competitiveness.

Feedback to PI
Documentation from Merit Review

- **Verbatim copies of individual reviews, excluding reviewer identities (in most cases, at least three reviews)**

- **Panel Summary (if panel reviewed)**

- **Context Statement**

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

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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 questions, contact the cognizant program officer.

Should you revise and resubmit?

- Do the reviewers and NSF program officer identify significant strengths of your proposal?

- Can you address the weaknesses that reviewers and program officer identified?

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

If questions, contact the cognizant program officer.

Reasons For Funding a Competitive Proposal

- Likely high impact

- PI Career Point (tenured?/"established"/"young")

- Place in Program Portfolio

- Other Support for PI

- Impact on Institution/State

- Special Programmatic Considerations (CAREER/RUI/EPSCoR)

- Diversity Issues

- Educational Impact

- "Launching" versus "Maintaining"

Why Serve on an NSF Panel?

- Gain first hand knowledge of peer 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 Peer 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 peer 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.

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