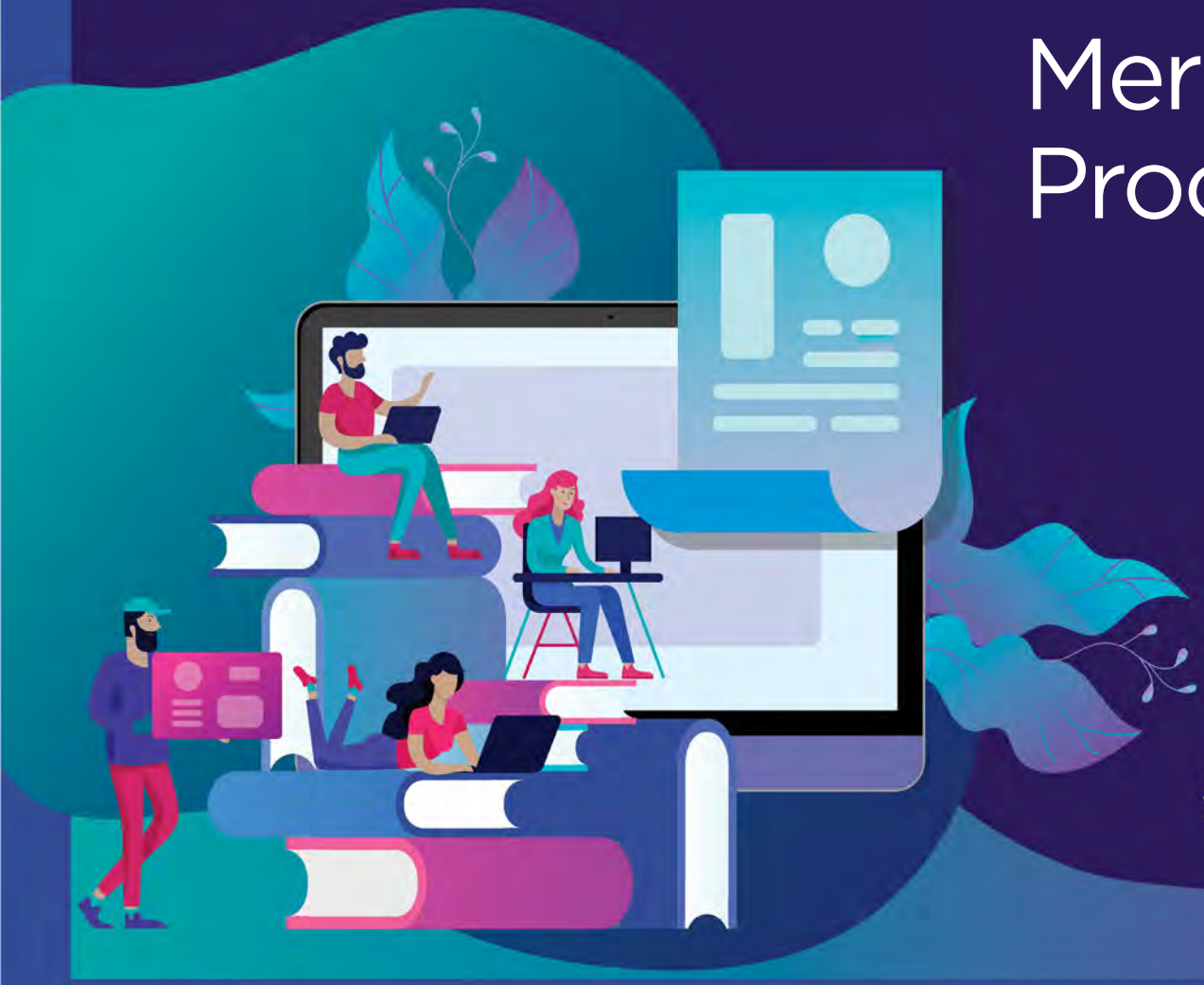
FALL 2020 VIRTUAL GRANTS CONFERENCE

Merit Review Process



National Science Foundation

Panelists

Thyaga Nandagopal
Deputy Division Director, Division of Computing and Communication Foundations; Directorate for Computer & Information Science & Engineering

Karen Santoro
Assistant General Counsel (Ethics), Office of the General Counsel

Nigel Sharp
Program Director, Division of Astronomical Sciences; Directorate for Mathematical & Physical Sciences

National Science Foundation

Topics Covered – Proposal and Award Timeline

Proposal Preparation and Submission

- Reminders When Preparing Proposals

Proposal Review and Processing

- Program Officer Review
- Proposal Review Criteria
- Types of Reviews
- Becoming a Reviewer
- Managing Conflicts of Interest
- Funding Decisions

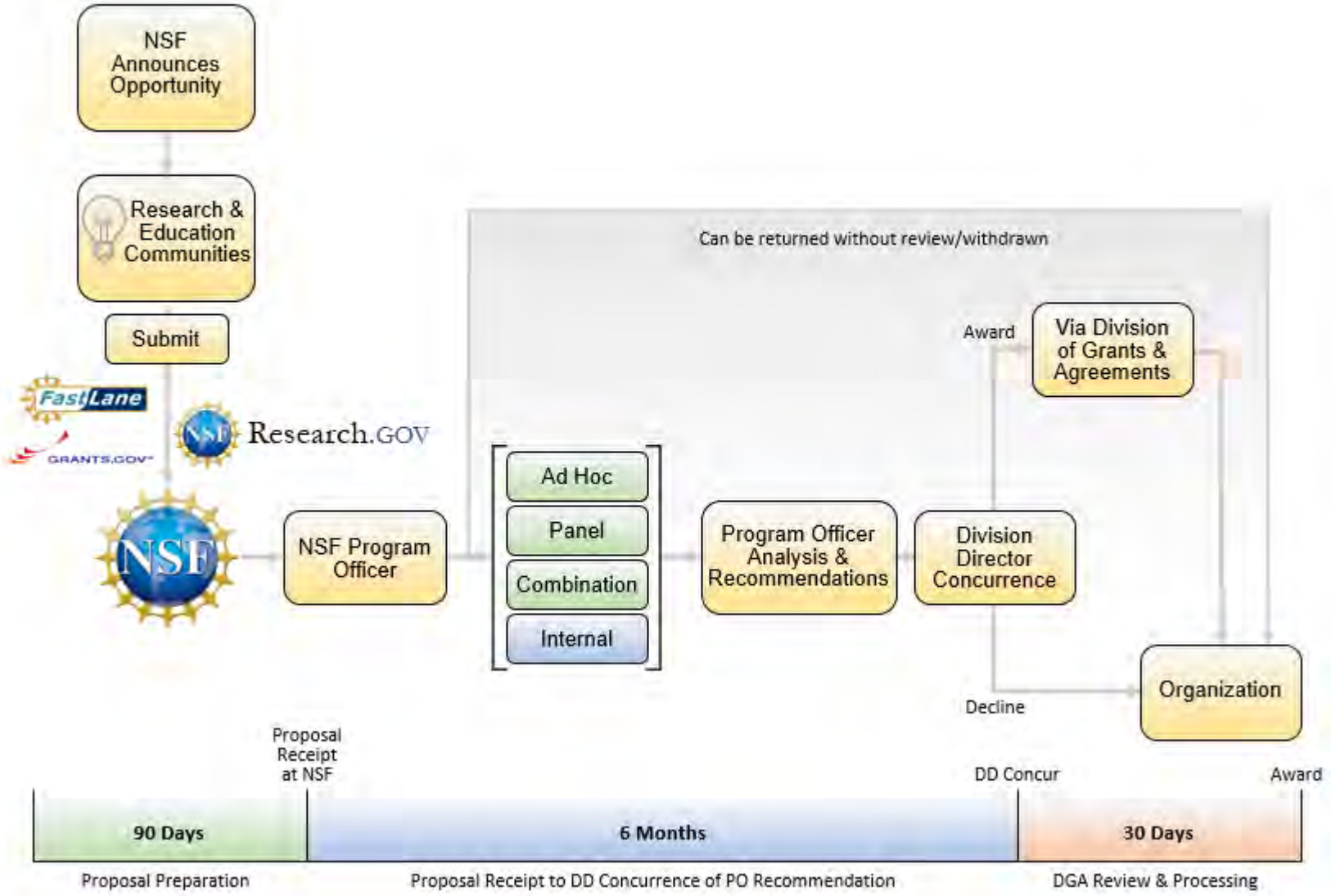
Award Processing

- Issuing the Award

"Ask Early, Ask Often!"

National Science Foundation

NSF Proposal and Award Process Timeline



Reminders When Preparing Proposals

- Read the funding opportunity
  - Ask a Program Officer for clarifications if needed
- Address all the proposal review criteria
- Understand the NSF merit review process
- Avoid omissions and mistakes
- Check your proposal to verify that it is complete!

National Science Foundation

Program Officer Review

- Upon receipt at NSF, proposals are routed to the PI-designated program office.
- NSF staff conducts a preliminary review to ensure they are:
  - Complete;
  - Timely; and
  - Conform to proposal preparation requirements.
- NSF may not accept a proposal or may return it without review if it does not meet the requirements above.

- If the proposal is outside the scope of the program, the Program Officer usually tries his/her best to transfer it to the most appropriate program for evaluation.

National Science Foundation

Proposal & Award Policies & Procedures Guide (PAPPG)

The PAPPG contains detailed guidelines on proposal preparation and a description of the Merit Review Criteria

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

National Science Foundation

Proposals Not Accepted or Returned Without Review

If it does not contain all of the required sections, as described in PAPPG Chapter II.C.2.

- Per the PAPPG Project Summary Requirement:
  - Must include an overview and separate statements on Intellectual Merit and Broader Impacts.
- Per the PAPPG Project Description Requirement:
  - Must contain, as a separate section within the narrative, a section labeled "Broader Impacts."
  - Must include results from prior NSF support with start date in the past 5 years.
- Per the PAPPG Data Management Plan Requirement:
  - Must be included as a supplementary document.
- Postdoctoral Researcher Mentoring Requirement (if applicable):
  - Proposals that include postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals.

Other Reasons for Return of Proposals Without Review

- It is inappropriate for funding by the National Science Foundation.
- It is submitted with insufficient lead time before the activity is scheduled to begin.
- It is a full proposal that was submitted by a proposer that has received a “not invited” response to the submission of a preliminary proposal.
- It is a duplicate of, or substantially similar to, a proposal already under consideration by NSF from the same submitter.

National Science Foundation

Other Reasons for Return of Proposals Without Review

- It does not meet NSF proposal preparation requirements, such as page limitations, formatting instructions, and electronic submission, as specified in the PAPPG or program solicitation.
- It is not responsive to the PAPPG or program announcement/solicitation.
- It does not meet an announced proposal deadline date (and time, where specified).
- It was previously reviewed and declined and has not been substantially revised.
- It duplicates another proposal that was already awarded.

National Science Foundation

Merit Review Criteria: Guiding Principles

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects.

National Science Foundation

Merit Review Criteria

When evaluating NSF proposals, reviewers should consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits would accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers are asked to evaluate all proposals against two criteria:

- **Intellectual Merit**: The Intellectual Merit criterion encompasses the potential to ***advance knowledge***; and
- **Broader Impacts**: The Broader Impacts criterion encompasses the potential to ***benefit society*** and contribute to the achievement of specific, desired societal outcomes.

National Science Foundation

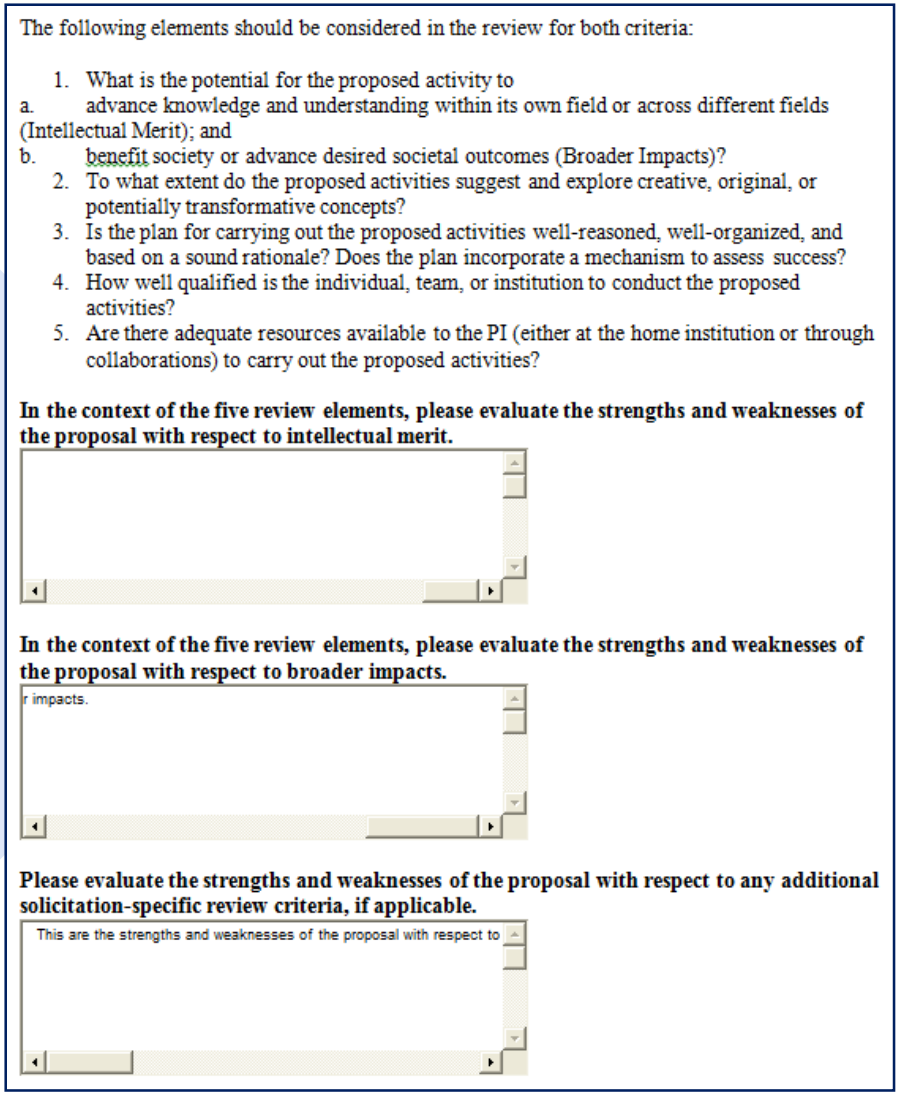
Five Review Elements

- The following elements should be considered in the review for both criteria:
- What is the potential for the proposed activity to:
  - ***advance knowledge*** and understanding within its own field or across different fields (**Intellectual Merit**); and
  - ***benefit society*** or advance desired societal outcomes (**Broader Impacts**)?
- 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? Does the plan incorporate a mechanism to assess success?
- How well qualified is the individual, team, or institution to conduct the proposed activities?
- Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?

Review Format in FastLane

Reviewers provide feedback to NSF based on the Review Criteria and the Review Elements

Review Criteria and Elements are available as reviewers provide feedback



The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
a. advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
b. benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or institution to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?

In the context of the five review elements, please evaluate the strengths and weaknesses of the proposal with respect to intellectual merit.

In the context of the five review elements, please evaluate the strengths and weaknesses of the proposal with respect to broader impacts.

r impacts.

Please evaluate the strengths and weaknesses of the proposal with respect to any additional solicitation-specific review criteria, if applicable.

This are the strengths and weaknesses of the proposal with respect to

National Science Foundation

Types of Reviews

Ad hoc: Proposals sent out for review

- *Ad hoc* reviewers usually have specific expertise in a field related to the proposal.
- Some proposals may undergo *ad hoc* review only.

Panel: Face-to-face sessions conducted by reviewers mainly at NSF but also in other settings

- Panel reviewers usually have a broader scientific knowledge.
- Some proposals may undergo only a panel review.
- Some proposals may undergo reviews by multiple panels (especially for those proposals with crosscutting themes).

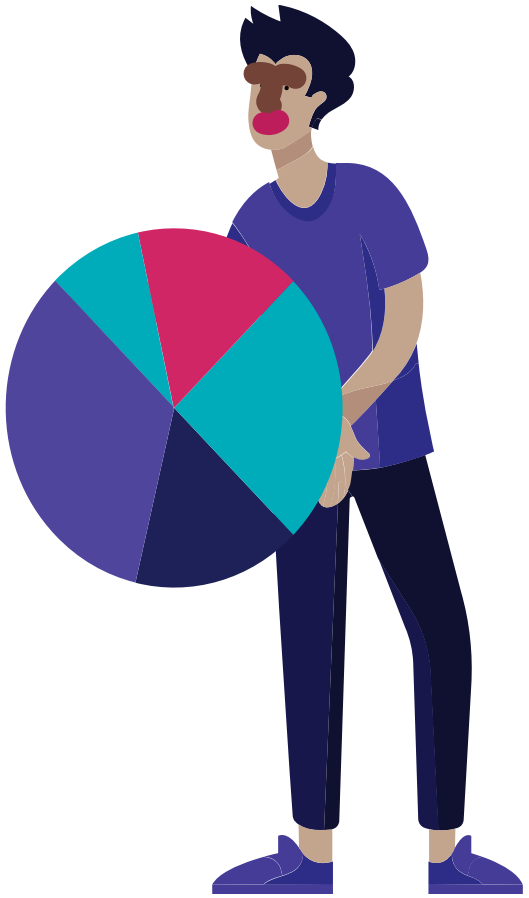
National Science Foundation

Types of Reviews (cont'd)

Combination: Some proposals may undergo supplemental ad hoc reviews before or after a panel review.

Internal: Review by NSF Program Officers only

- Examples of internally reviewed proposals:
  - Proposals submitted to Rapid Response Research Grants (RAPID)
  - Proposals submitted to Early-concept Grants for Exploratory Research (EAGER)
  - Proposals submitted to Research Advanced by Interdisciplinary Science and Engineering (RAISE)
  - Proposals for conferences under $50,000



National Science Foundation

How are Reviewers Selected?

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
- Former reviewers
- Reviewer recommendations included in proposal or sent by email

National Science Foundation

How Do I 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.

National Science Foundation

What is the Role of the Reviewer?

Review all proposal material and consider

- The two NSF merit review criteria and any program specific criteria.
- The adequacy of the proposed project plan including the budget, resources, and 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.

National Science Foundation

What is the Role of the Review Panel?

- Discuss the merits of the proposal with the other panelists
- Write a summary based on that discussion
- Provide some indication of the relative merits of different proposals considered

National Science Foundation

Why Serve on an NSF Panel?

- Gain first-hand knowledge of the merit review process
- Learn about common problems with proposals
- Discover proposal writing strategies
- Meet colleagues and NSF Program Officers managing the programs related to your research

National Science Foundation

Managing Conflicts of Interest in the Review Process

- The primary purpose is to remove or limit the influence of ties to an applicant institution or investigator that could affect reviewer advice.
- The secondary 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.

National Science Foundation

Affiliations with Applicant Institutions

Examples

- Current employment at the institution
- Other association with the institution, such as being a 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

National Science Foundation

Personal Relationships with Investigator or Project Director

Examples

- 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

National Science Foundation

Funding Decisions

- The merit review panel 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 Officers' funding recommendations.

National Science Foundation

Feedback from Merit Review

- Reviewer ratings (such as: E, V, 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 applicable)

If you have any questions, contact the cognizant Program Officer

National Science Foundation

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 (formal or informal, written, email or verbal) as necessary to explain a decision

National Science Foundation

Examples of Reasons for Declines

- The proposal was not considered to be competitive based on the merit review criteria and the program office concurred.
- The proposal had flaws or issues identified by the program officer.
- The program funds were not adequate to fund all competitive proposals.

National Science Foundation

Revisions and Resubmissions

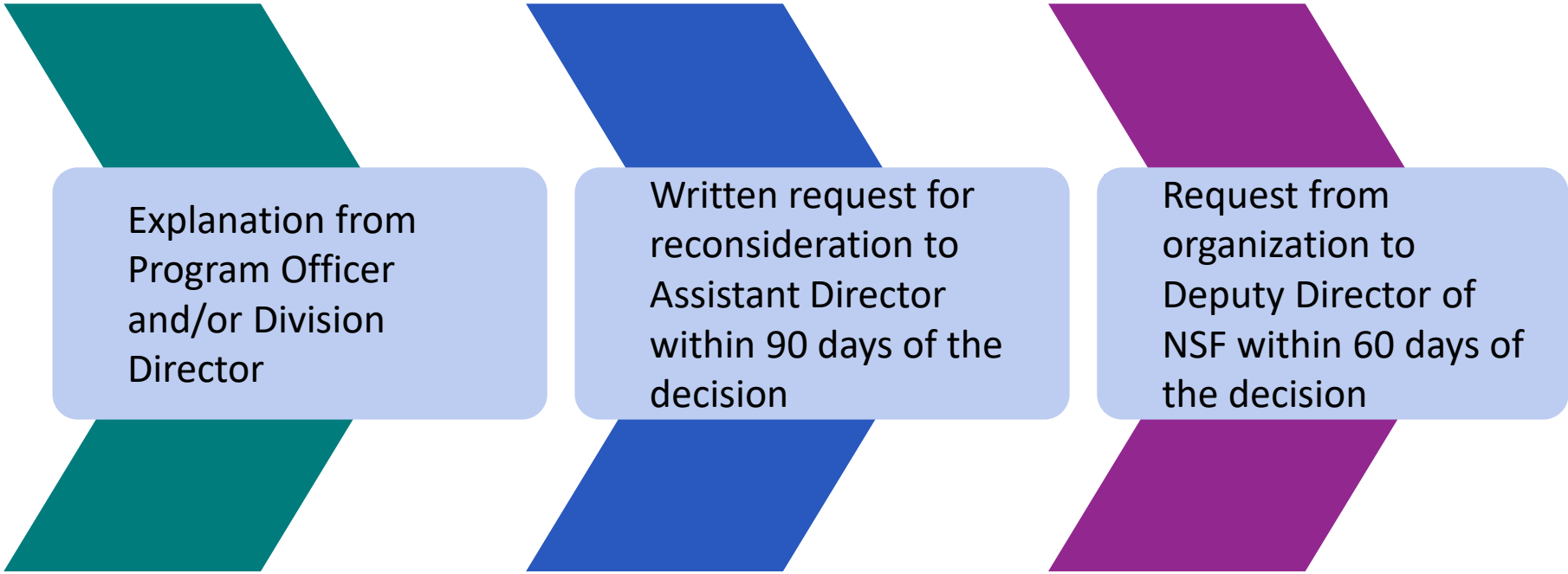
Points to consider

- Do the reviewers and the NSF Program Officer identify significant strengths in 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?

Again, if you have questions, contact the cognizant Program Officer.

National Science Foundation

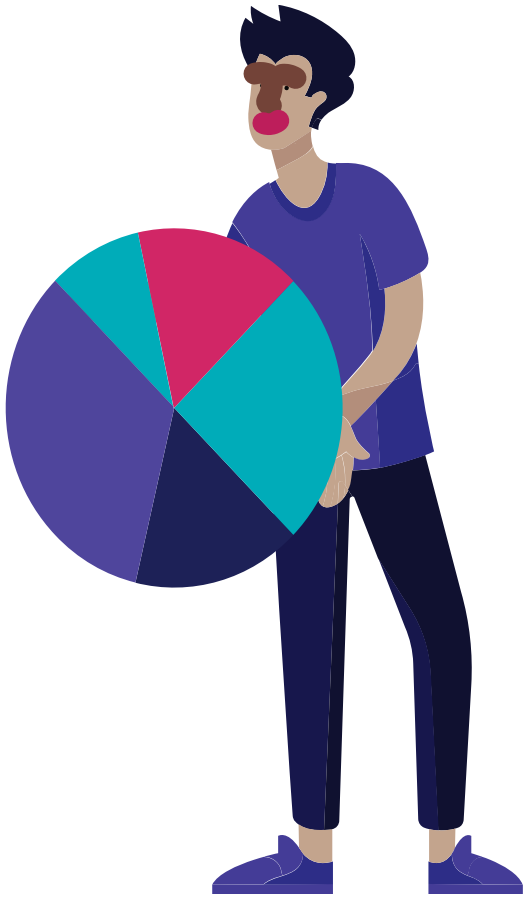
NSF Reconsideration Process



National Science Foundation

Possible Considerations for Funding a Competitive Proposal

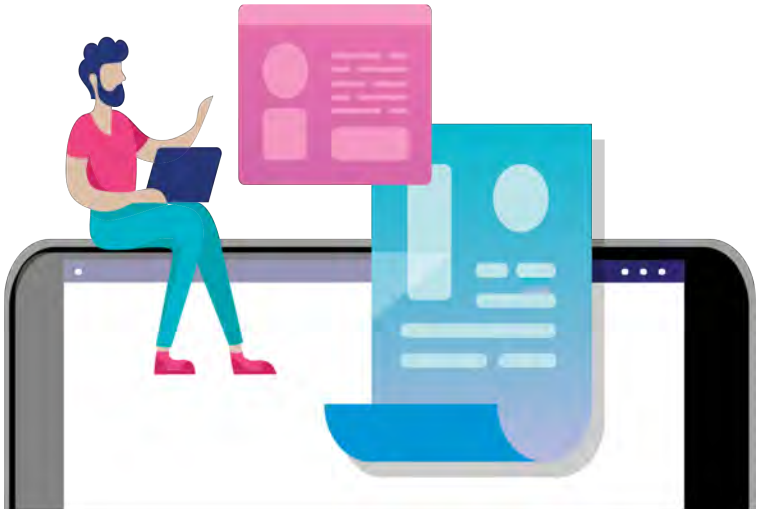
- Addresses all review criteria
- Likely high impact
- Broadening participation
- Educational impact
- Impact on institution/state
- Special programmatic considerations (e.g. CAREER/RUI/EPSCoR)
- Other support for PI
- “Launching” versus “Maintaining”
- Portfolio balance



National Science Foundation

Issuing the Award

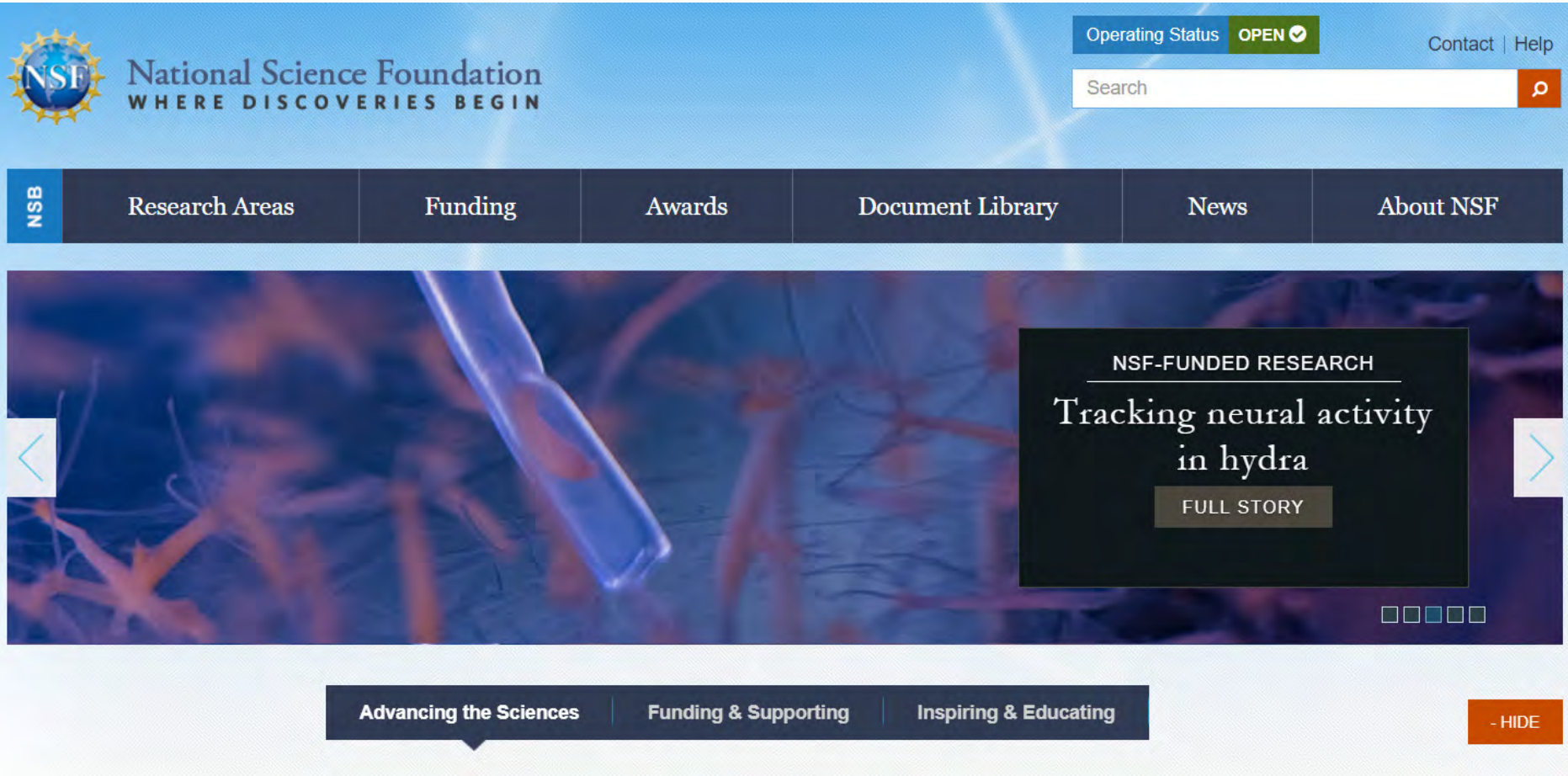
- NSF's Division of Grants and Agreements (DGA) reviews the recommendation from the program office for business, financial, and policy implications.
- NSF's grants and agreements officers make the official award as long as:
  - The institution has an adequate grants management capacity.
  - The PI/Co-PIs do not have overdue annual or final reports.
  - There are no other outstanding issues with the institution or PI.



National Science Foundation

For More Information

Go to NSF's Home Page (www.nsf.gov)



National Science Foundation

For More Information

"Ask Early, Ask Often!"

- nsf.gov/staff
- nsf.gov/staff/orglist.jsp
- nsf.gov/about/career_opps/rotators/index.jsp

National Science Foundation