



Navigating the NSF

OVERVIEW OF THE NATIONAL SCIENCE FOUNDATION
MISSION AND GRANT SYSTEM

Note: This workshop is being recorded



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Housekeeping Items

Mute button

- Please stay muted unless asking a question or entering a discussion

Chat Box

- I'll address questions at stopping points in the presentation

Recording

- We are recording the workshop
- We will post it online for your reference

Slides

- We will email PDF of slides to everyone after the workshop



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Research Development Services

Funding Related Services

- Funding searches and strategy
- Pivot trainings
- Internal funding programs coordination

Proposal Services

- Checklists and templates
- Critique and copy-edits
- Guidance on funding guidelines

Other Services

- Oversee limited submissions - internal competitions
- Institutional support coordination and letters



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Workshop Agenda

Overview of the NSF Mission, Funding, and Structure

Finding and Understanding Funding Opportunities

Application Elements & Process

Proposal Review

Proposal Writing Tips



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Mission, Funding & Structure

► BROAD OVERVIEW OF THE AGENCY



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NSF Mission

- ▶ *To promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the nation's defenses, and for other purposes.*

NSF Vision

- ▶ *NSF envisions a national that capitalizes on new concepts in science and engineering and provides global leadership in advancing research and education*

At a Glance - Funding

Annual budget of \$8.3 billion (FY 2020)

12,000 new awards per year (from 48,000 applications)

Type of Projects:

Faculty-initiated research projects (primary awards)

Regional and national centers

Graduate fellowships

Major equipment acquisition

K-12 teacher training

Small business innovation research

Promoting underrepresented populations in STEM

Conferences



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NSF Directorates

- ▶ Biological Sciences
- ▶ Computer and Information Science and Engineering
- ▶ Engineering
- ▶ Geosciences
- ▶ Mathematical and Physical Sciences
- ▶ Social, Behavioral and Economic Sciences
- ▶ Education and Human Resources

NSF's Office of the Director Office of Integrative Activities Sections

- ▶ Environmental Research and Education Working Group
- ▶ International Science and Engineering
- ▶ Integrative Activities

Governing Structure

25-member National Science Board

- NSB establishes NSF policies and serves as advisor to Congress and the President
- NSB runs the prestigious **Vannevar Bush** and **Public Service** awards for remarkable contributions and public service in science and engineering

NSF Director

- The Director and Deputy Director are appointed by the President and Confirmed by Senate.
- Six year term



Finding & Understanding Funding Opportunities

► PROGRAM DESCRIPTIONS, SOLICITATIONS, AND MORE

Opportunity Announcement Types

Program Descriptions

- These proposals must follow the instructions in the **Proposal and Award Policy & Procedure Guide (PAPPG)**.
- **Examples:** Linguistics, Aeronomy, Social Psychology

Program Solicitations

- Follow the instructions in the **Solicitation**. PAPPG applicable *unless otherwise stated in the solicitation*.
- **Examples:** Partnerships for Innovation, Law & Science, CAREER

Dear Colleague Letters

- *Notifications* of opportunities or special competitions for supplements to existing NSF awards.



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Proposal and Award Policy & Procedure Guide

Parts of the [PAPPG](#)

- **Introduction:** NSF overview, acronyms, definitions, etc.
- **Part I:** Proposal Preparation and Submission Guidelines
- **Part II:** Award, Administration and Monitoring of Grants and Cooperative Agreements

[RDS Templates](#)

- Elements of a proposal
- For NSF and NIH



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Finding Funding Opportunities

Funding by research areas

- Lists broad topics, and all opportunities that match with the general topic

Active funding opportunities

- Has an advanced search option, and is organized by due date
- Is not grouped by research area

Browse opportunities

- Look for announcements by funding title A-Z

Search by Directorate /Division/Program

- For those who already know to which program they plan to apply
- Go to [Organization List](#)



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Navigating The Funding Opportunity

Program Descriptions

- Example: [Linguistics](#)

Program Solicitations

- Example: [CAREER](#)

Narrowing your search

Research award database

- Division/Program page level (example)
- Advanced search page

Program officer

- Send brief email with 1-page summary and biosketch and request an appointment.
- Listen to his/her advice about your project and its fit for the division or program.



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Questions?

► CHAT BOX CHECK



Application Elements & Process

► HOW & WHERE TO APPLY, MERIT REVIEW, AND MORE



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At a Glance - Application, Review & Award



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Expectations for Proposals

Highest Quality

- Both in content and presentation

Transformative

- Have the potential to advance and/or transform the frontiers of knowledge

Impactful

- Contributes broadly to achieving societal goals

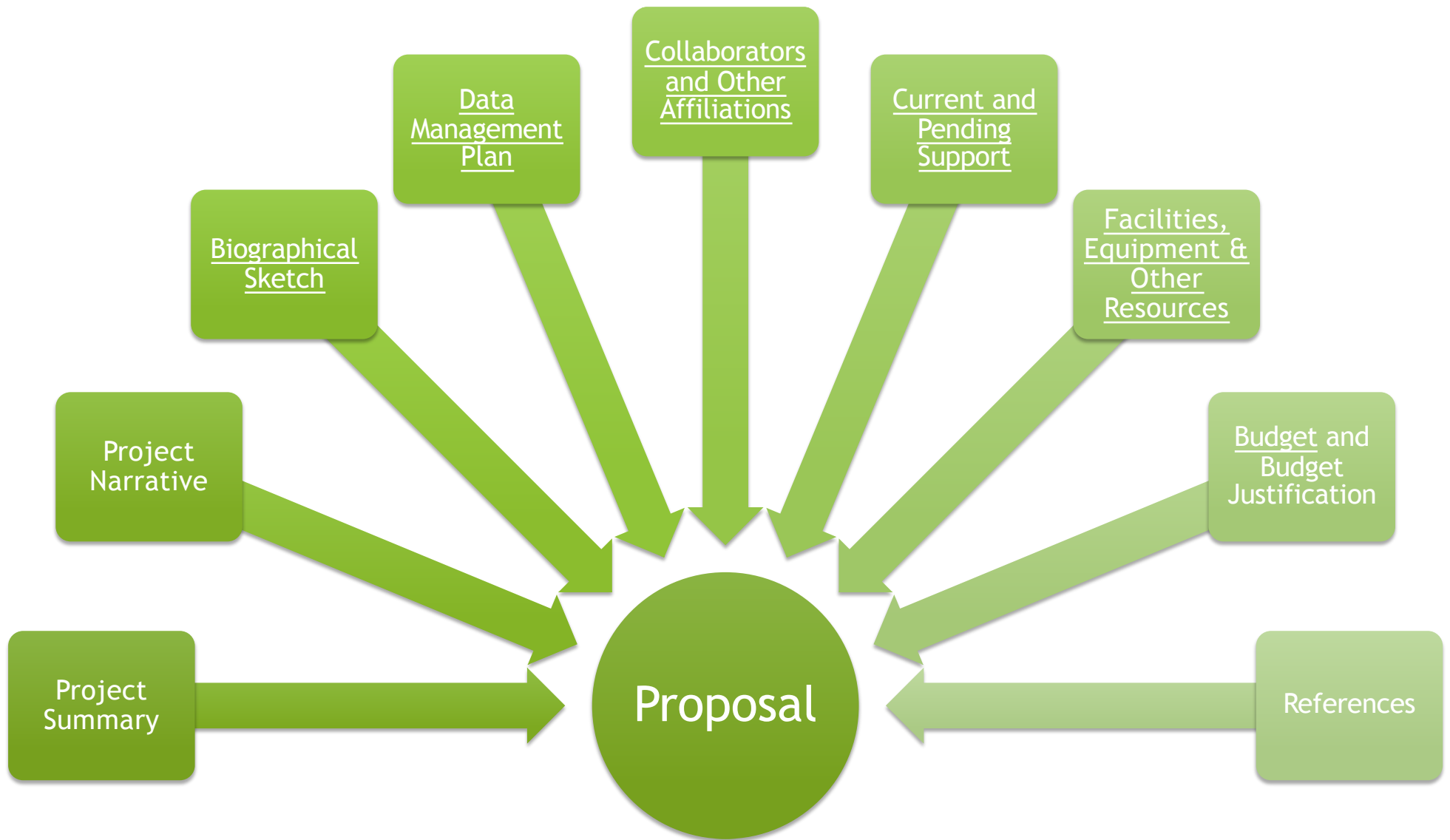
Contains

- clearly stated goals
- specific descriptions of activities, and
- a plan to assess the work



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Proposal Submission

► First steps: UO internal processes

- Departmental Grant Administrators support faculty applying for grants. Check in with your DGA early so they can help
- Sponsored Project Services
 - Approves budgets
 - Reviews applications and submits through federal portal

► Federal submission portals

- FastLane System
- Research.gov (eventually the only system when Fastlane phases out in several years)
- Get a new NSF ID or affiliate existing one with UO



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Peer Review

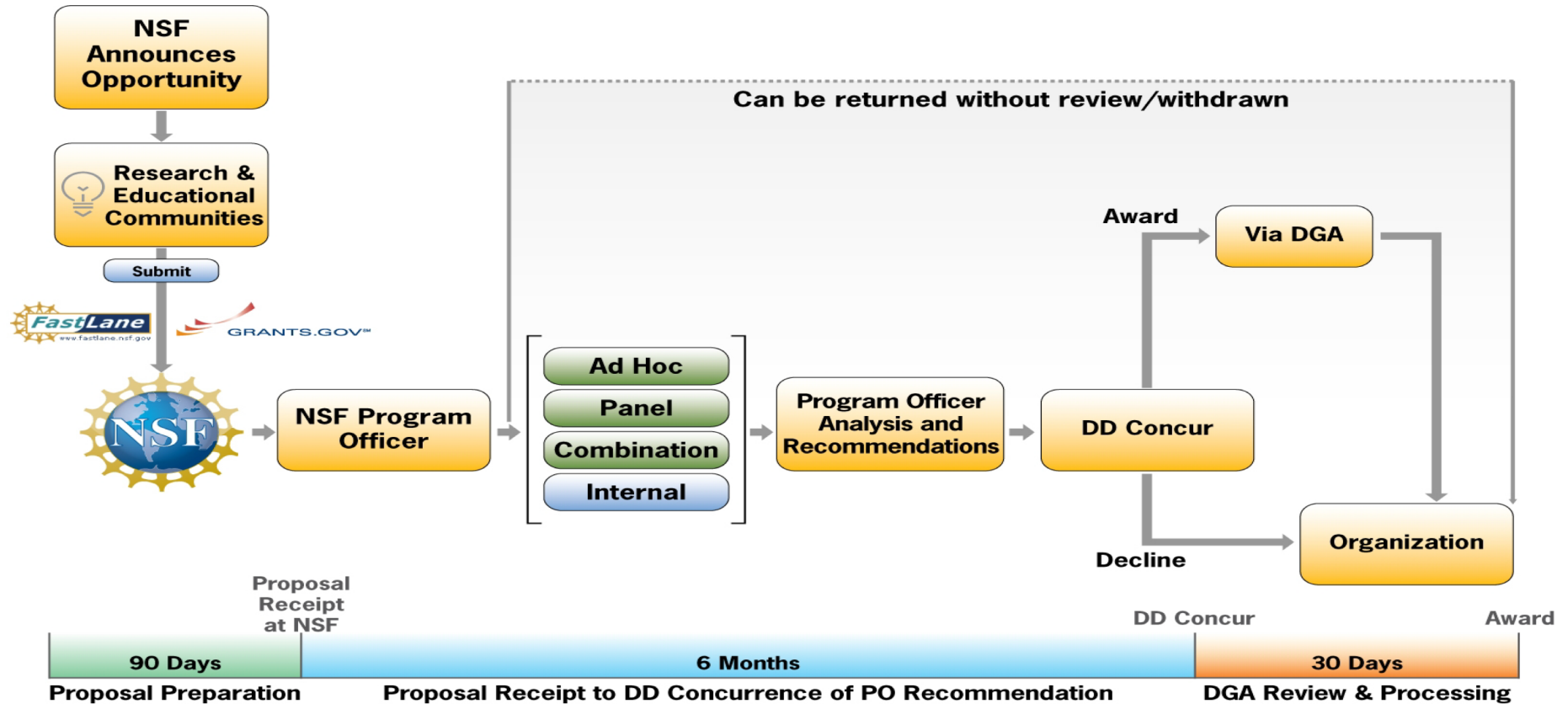
- ▶ MERIT REVIEW CRITERIA
- ▶ GUIDING PRINCIPLES



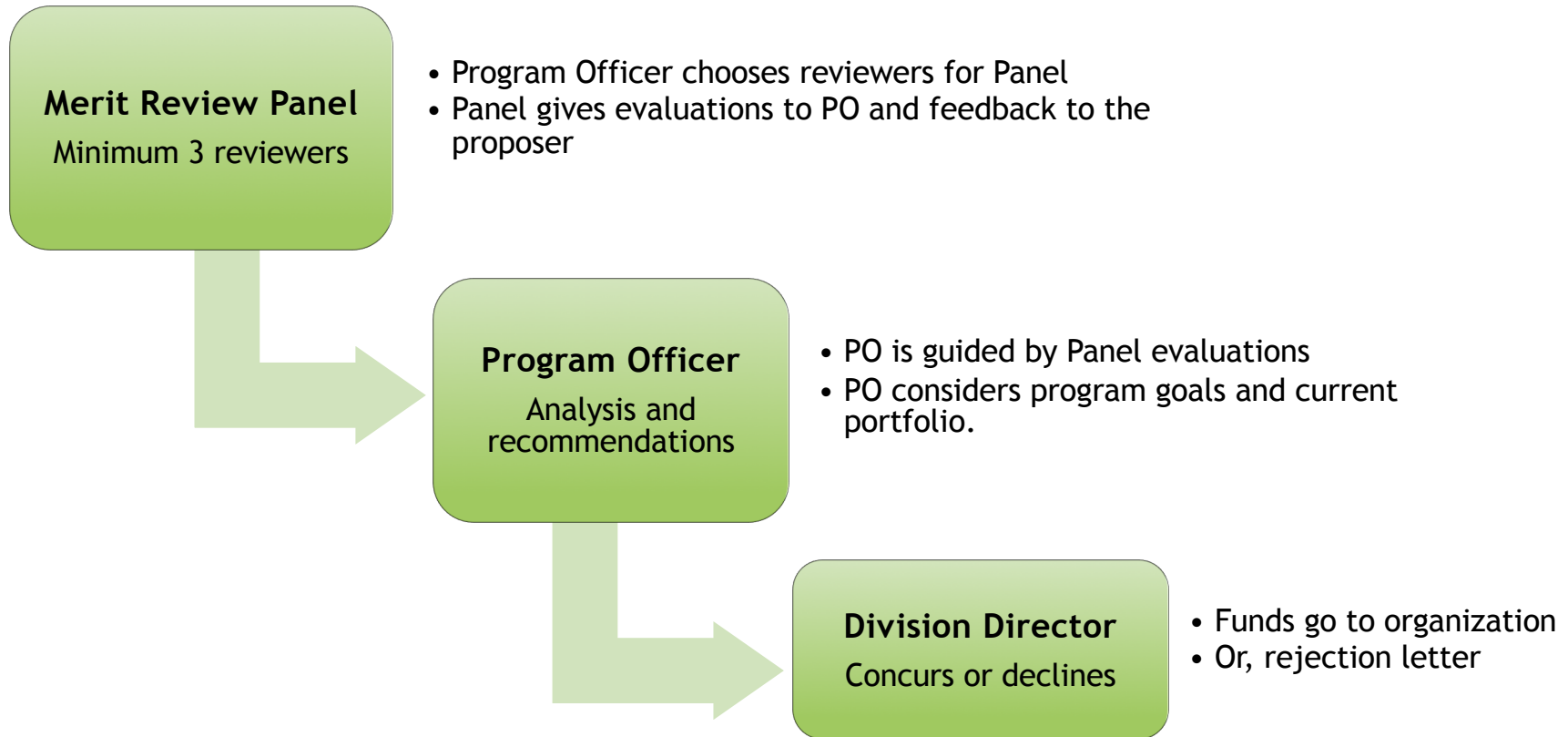
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Snap-shot - Application and Review



Basic Panel Review Process



More on Review Types

Panel

- Face-to-face sessions
- Reviewers usually have a broader scientific knowledge.
- Some proposals only get a panel review.
- Some proposals have multiple panels (especially for those proposals with crosscutting themes).

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.

Combination

- Some proposals may undergo supplemental *ad hoc* reviews before or after a panel review.

Internal

- Review by NSF Program Officers only
- Examples include RAPID, international travel, workshops



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The Who and How of Review Panels

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



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Why be a Reviewer?

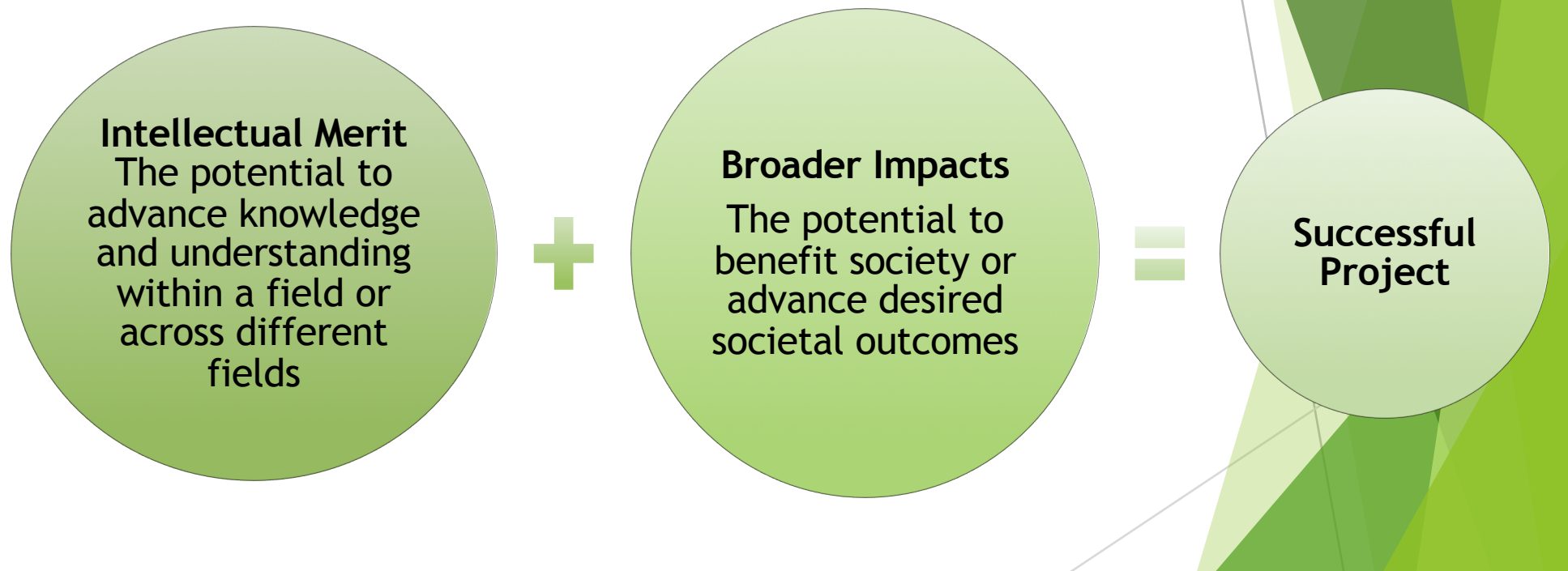
- ▶ Gain first-hand knowledge of the merit review process
- ▶ Learn about common problems with proposals
- ▶ Discover proposal writing strategies
- ▶ Meet colleagues and NSF Program Officers managing the programs related to your research

How to be 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

The Review Criteria



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Review Lens for *Intellectual Merit* and *Broader Impacts*

Novel Concepts

- proposal suggests and explores creative, original, or potentially transformative concepts

Solid Project Plan

- well-reasoned, well-organized, and based on a sound rationale
- incorporates a mechanism to assess success

Requisite Qualifications

- The individual PI, the team, and/or the organization have expertise necessary to conduct the proposed activities

Key Resources

- PI has necessary resources (at home institution or through partners) to carry out the proposed activities



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Reviewer Comments, Revision, and Resubmission

Review

- Description of the context in which the proposal was reviewed
- Copies of all reviews used in the decision
- Copy of panel summary, if the proposal was reviewed by a panel at any point in the process

Revise

- The proposal must be substantively revised address the major comments from the prior NSF review
- Work with RDS to be sure your revision is addressing all the reviewer concerns

Resubmit

- Determine the next deadline to which you can apply
- Work with SPS early on to prepare Fastlane or Research.gov submission



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Questions?

► CHAT BOX CHECK



Proposal Writing Tips

- ▶ THE ART OF WRITING FOR A GRANT APPLICATION
- ▶ REASONS FOR ACCEPTENCE AND REJECTION



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The Art of Preparation

Read solicitation

- Understand the program's focus and goals
- Note deadlines
- Highlight any variations from NSF's Proposal Application and Policy Guide (PAPPG)

Understand application elements

- Follow PAPPG unless solicitation says otherwise
- Use NSF required formats
- Access [RDS templates and checklists](#)



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The Art of Preparation

Get feedback

- Research Development Services
- Colleagues and other experts
- NSF Program Officer

Prepare internally for submission

- Departmental Grant Administrator
- Sponsored Project Services
- Involve them early in the process

The Art of...

Writing

- Start early! Time for multiple drafts
- Use active voice. Be concise
- Write both for specialists and generalists
- Clearly explain and define jargon when its used
- Proofread. Sloppy applications don't impress the reviewers

Persuasion

- State the expected outcomes of your work clearly
- Describe project with enough concrete detail to be convincing. Don't exaggerate
- Make no assumptions about the readers' knowledge of your research



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More Tips

Make Your Project's Goals Realistic

- Don't propose more work than can be reasonably done during the proposed project period

Be Organized and Logical

- Write clear headings. Use sub-headings, short paragraphs, and other techniques to make the application as easy to navigate as possible

Be Persuasive in Selling your Project Idea & Yourself

- Make the case for why NSF should invest its limited funds in *your* proposal



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Common Reasons for Rejection

- ▶ The proposal had flaws or issues identified by the program officer
- ▶ The proposal was not considered to be competitive based on the merit review criteria and Program Officer concurred
- ▶ The program funds were not adequate to fund all competitive proposals
- ▶ Project did not fit well into Program's funding portfolio

Basis for Successful Application

- ▶ Unique approaches to research or education
- ▶ Project is significant, high impact, and/or has potential for transformational advances in the field
- ▶ Broadening participation
- ▶ Capacity building in a new and promising research area
- ▶ Achievement of special program objectives
- ▶ Fits NSF Program's Portfolio balance

Proposal Writing Help from NSF

- ▶ Go to your particular Division for details on their particular focus and policies
- ▶ Use the PAPPG and Solicitation for all the technical criteria
 - ▶ Training for the External Community on the NSF Proposal & Award Policies & Procedures Guide (PAPPG)(NSF 20-1) - February 6, 2020
- ▶ NSF Resource Center
 - ▶ Materials from past conferences and workshops.



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Upcoming NSF Trainings from RDS

Faculty Early
Career
Development
Program (CAREER)
and Broader
Impacts

Tuesday, May 12, 2020

1.5 hours to cover both topics

Preregister through **Research and
Innovation Support and Education (RISE)**,
the OVPRI's training page



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Final Questions?

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