



# Scientific Peer Review at NSF

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## **NSF Mission (from 1950 Act)**

To promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense; and for all other purposes.

## **NSF Vision**

[to enable the USA to become a] Nation that is a global leader in research and innovation.

## **Core Values**

- Excellence
- Public Service
- Learning
- Inclusion
- Collaboration
- Integrity
- Transparency

## **Strategic Goals**

- Expand Knowledge in Science, Engineering and Learning
- Advance Capacity of Nation to Meet Current and Future Challenges
- Enhance NSF's Performance of its Mission



# National Science Foundation

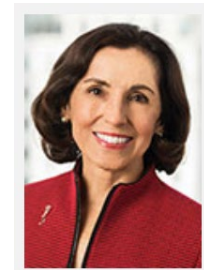
- Supports **basic** research and education via grants
- Annual budget ~\$ 8 billion
  - >50,000 proposals
  - ~12,000 new awards per year
  - ~350,000 scientists, educators and students
  - ~230 Nobel Prizes
- Discipline-based structure
- Cross-disciplinary programs





# NSF funds basic research and education in all scientific disciplines

Dr. France Córdoba



**Director  
and  
National Science Board**

**DIRECTORATES**

Biological  
Sciences

**BIO**

Computer &  
Information  
Science and  
Engineering

**CISE**

Education  
and Human  
Resources

**EHR**

Engineering

**ENG**

Geosciences

**GEO**

Mathematical  
and Physical  
Sciences

**MPS**

Social,  
Behavioral  
& Economic  
Sciences

**SBE**



# National Science Board sets Review Criteria

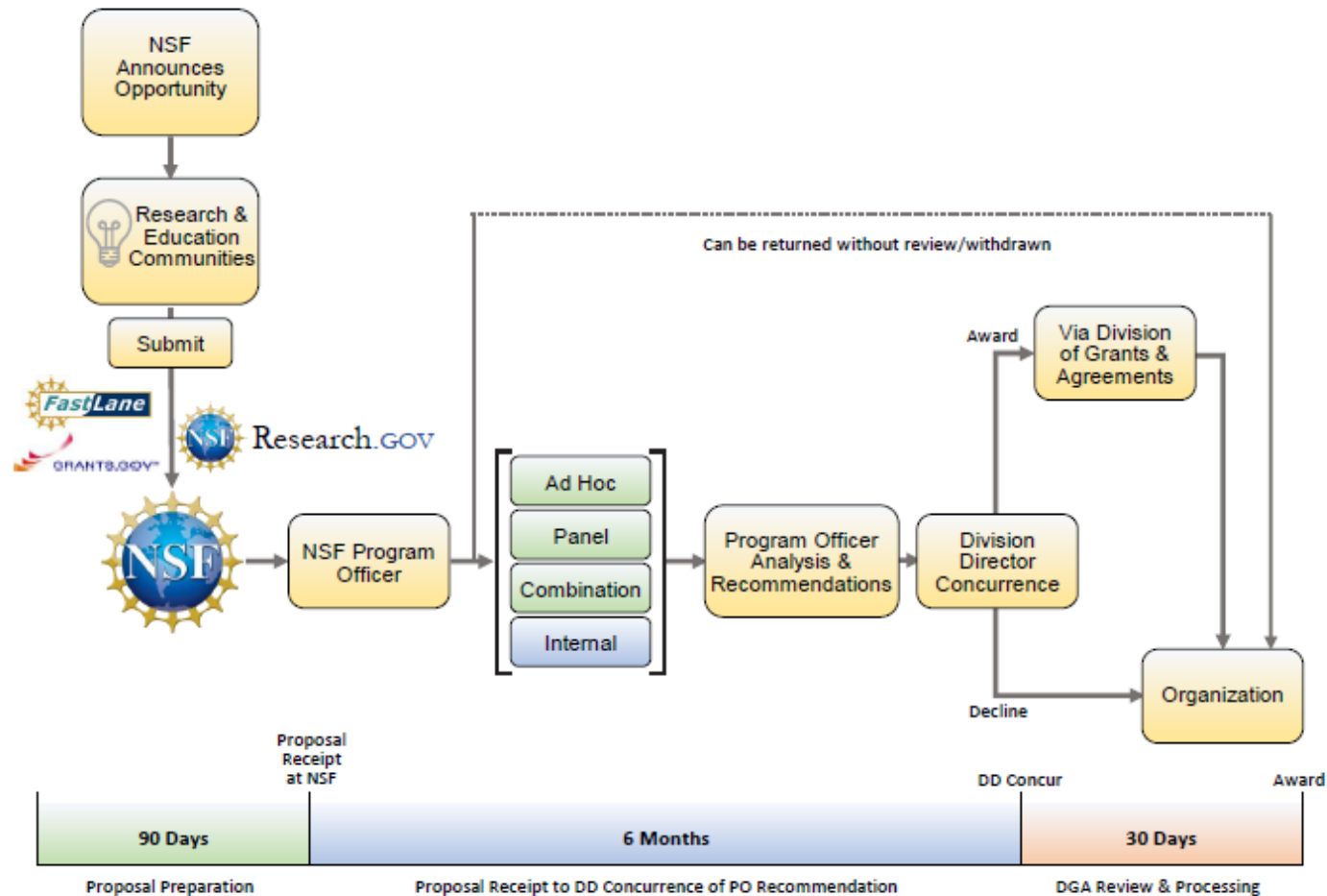
- Two merit review criteria
  - ***Intellectual merit***
    - Potential to advance knowledge and understanding within and across scientific fields
  - ***Broader impacts***
    - Potential to benefit society or advance desired societal outcomes
- Highly rated and fundable proposals will be strong in both criteria

# Proposal and Award Policy and Procedures Manual defines process



[https://www.nsf.gov/pubs/policydocs/pappg19\\_1/index.jsp#A](https://www.nsf.gov/pubs/policydocs/pappg19_1/index.jsp#A)

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# Who Evaluates Your Proposal?

## *Overview of Review Process*

**Principal Investigator**

- Identify relevant NSF program
- Develop proposal & load into NSF Fastlane or Research.gov
- Get feedback before you submit



**Program Director**

- Reads your proposal
- Determines if it is relevant to program
- Develops thematic Panels
- Assigns your proposal to a Panel
- Recruits the Panelists
- Assigns reviewers to proposal based on interest & expertise of panelist



**Individual Reviewers (at least 3)**

- Prepare written reviews based on NSF Criteria (*Intellectual Merit, Broader Impacts*)
- Have expertise in subject of proposal



**Review Panel**

- Composed of the Reviewers
- Discuss Strengths/Weaknesses of *Intellectual Merit & Broader Impacts*
- Assigned "Scribe" writes Panel Summary
- Ranks your proposal



**Program Director**

- Approves Panel Summary
- Evaluates panel recommendations
- Makes analysis & recommendation (award, decline)





# Example Panel Ranking Rubric

## Panel Rating Categories

WOW!

### 1. High Priority

- Strongest in both intellectual merit and broader impacts *and/or*
- Most likely to contain transformative ideas

### 2. Medium Priority (3 bins)

- 1) *High*
- 2) *Medium*
- 3) *Low*
- **Strong** in both intellectual merit and broader impacts

### 3. Low Priority

- Weaknesses in intellectual merit or broader impacts or both *and/or*
- Likely to have incremental impact

### 4. Non Competitive

- Seriously flawed in some fundamental way *and/or*
- Missing some crucial element or idea
- Lack of Broader Impacts





# Sample Panel Ranking Board

High Priority	Medium Priority	Low Priority	Non Competitive
Lincoln	Roosevelt (T)	Harding	Buchanan
Washington	Jefferson	Pierce	Johnson (A)
	Truman	Fillmore	
	Roosevelt (FD)	Harrison	
		Tyler	
		Grant	
	Wilson	Taylor	
	Eisenhower	Adams(J)	
		Monroe	
	Jackson		
	Kennedy		

# While transparency in process is a core NSF value, NSF holds reviews and reviewer identity confidential

Information released publicly	Information released to PI only	Non-Public Information
Title	Unattributed individual reviews	Members of specific panels
Abstract	Unattributed panel summaries	Attribution of any review materials
Notice of panel meeting	Context Statement	Proposal and review content

# **Policy and Law that support NSF confidentiality practices: Reviewers**

Longstanding NSF policy recognizes the importance of reviewer confidentiality in obtaining thousands of voluntary reviewers. This confidentiality promotes candor in evaluations and enables applicants to have the benefit of direct and constructive feedback, while protecting reviewers from potential lobbying pressure, harassment or retaliation.

At the beginning of every panel and included in all written correspondence to solicit proposal reviews, NSF states explicitly that it protects the confidentiality of proposals and of reviewers. This statement at the beginning of the review serves to remind the reviewers of both of their privacy protection in the deliberations they make, but also their responsibility in protecting the privacy of other panelists and ensuring the confidentiality of the proposals they review.

The authority for these protections come from the Privacy Act.

A provision of the Privacy Act protects the identity of confidential sources in evaluating the qualifications of applicants for "Federal contracts". NSF holds the position that NSF grant agreements are Federal contracts. This position has been upheld in the courts.

# **Policy and Law that support NSF confidentiality practices: Proposals & Reviews**

NSF policy protects the confidentiality of the contents of proposals and the reviews of those proposals. This confidentiality enables investigators to provide complete details of their research ideas and/or inventions without fear of intellectual property theft. Without this protection, reviewers would not have adequate information with which to perform peer review. The confidentiality of reviews enables reviewers to give substantive evaluative feedback without fear of disclosing the intellectual property of the proposer.

At the beginning of every panel and included in all written correspondence to solicit proposal reviews, NSF states explicitly that it protects the confidentiality of proposals and of reviewers. This statement at the beginning of the review serves to remind the reviewers of both of their privacy protection in the deliberations they make, but also their responsibility in protecting the privacy of other panelists and ensuring the confidentiality of the proposals they review.