

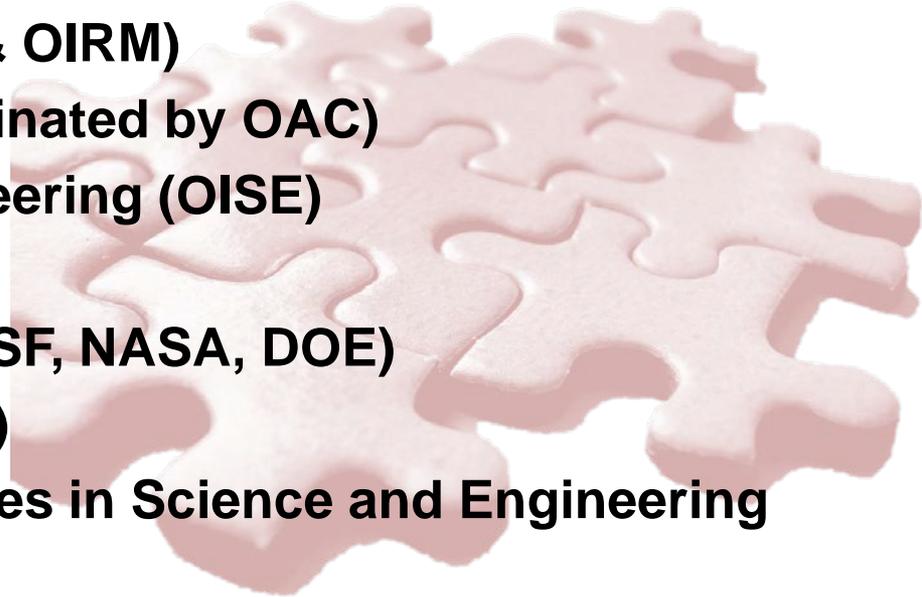
The Role of Committees of Visitors in Merit Review

National Science Board

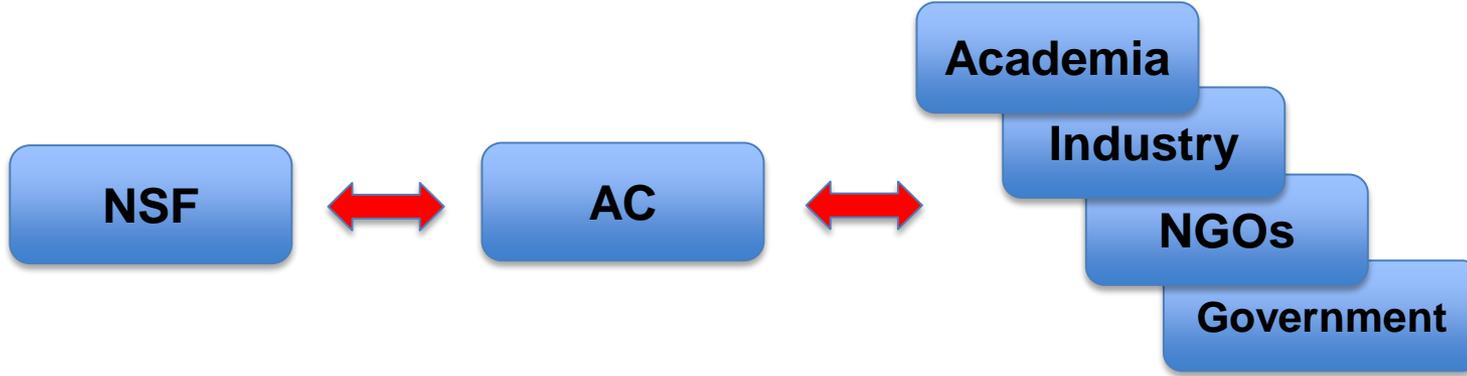
February, 2017

Advisory Committees

- **Groups of ~ 10 – 20 external experts**
- **Meet twice or more per year**
- **7 Directorate Advisory Committees**
- **1 Advisory Committee for the Environmental Research and Education virtual directorate (ERE)**
- **Business and Operations (BFA & OIRM)**
- **Cyberinfrastructure (NSF, Coordinated by OAC)**
- **International Science and Engineering (OISE)**
- **Polar Programs (OPP)**
- **Astronomy and Astrophysics (NSF, NASA, DOE)**
- **High-Energy Physics (DOE, NSF)**
- **Committee on Equal Opportunities in Science and Engineering (Statutory)**
- **Alan T. Waterman Award Committee**
- **President's Committee on the National Medal of Science**
- **+ NSF Merit Review Panels**

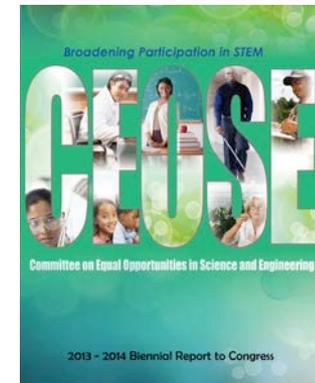


Role of Advisory Committees



Advisory Committees...

- Connect NSF with research, education and other stakeholder communities
- Provide input on emerging research areas
- Help shape NSF priorities
- Advise on NSF's business processes
- Subcommittees include Committees of Visitors

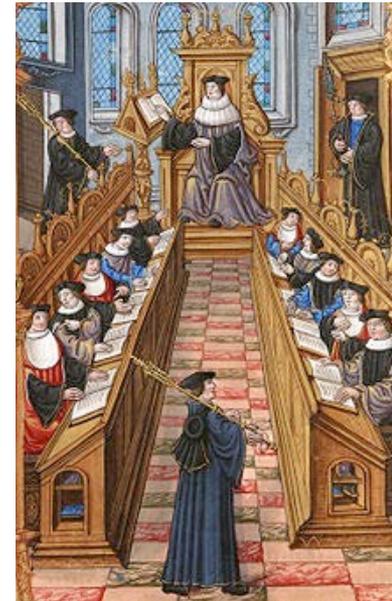




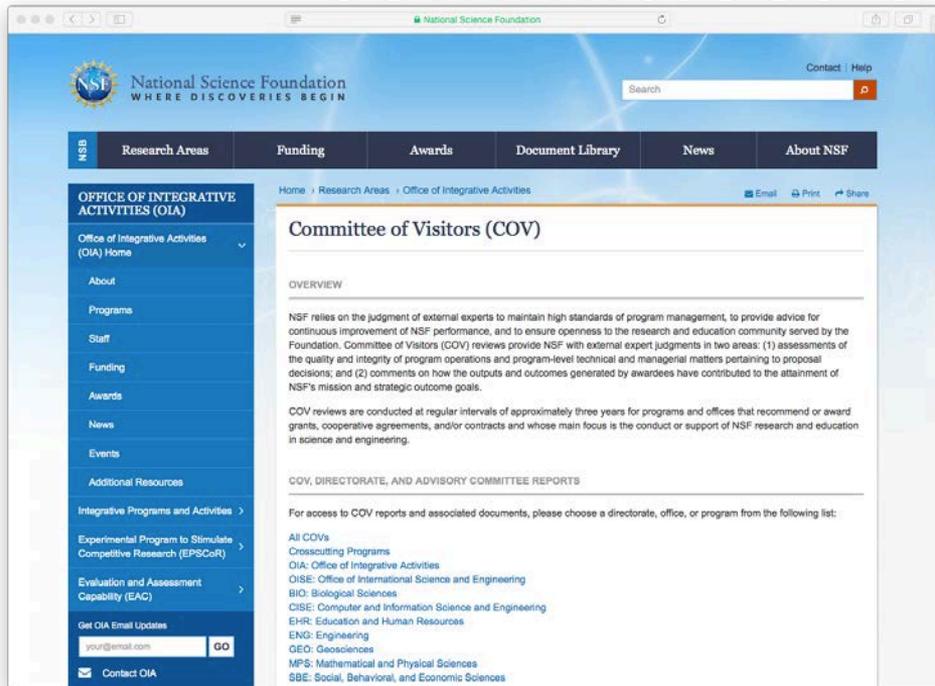
The genesis of COVs



- **NSF has used peer review for most of its existence.**
- **1970s: A desire for more openness and accountability.**
- **NSF developed an External Oversight Plan – now COV.**
- **Made verbatim copies of reviews available to PIs.**
- **Congress recommended that “The National Science Board should have primary responsibility for the establishment of policies governing peer review.” (1976)**
- **NSF submits periodic reports on merit review to the NSB.**



Reviewing Merit Review: Committees of Visitors (COVs)



Programs that recommend awards are reviewed by an external panel of experts approximately every **4 years**.

Reports are posted online

Most COVs are subcommittees of Directorate Advisory Committees

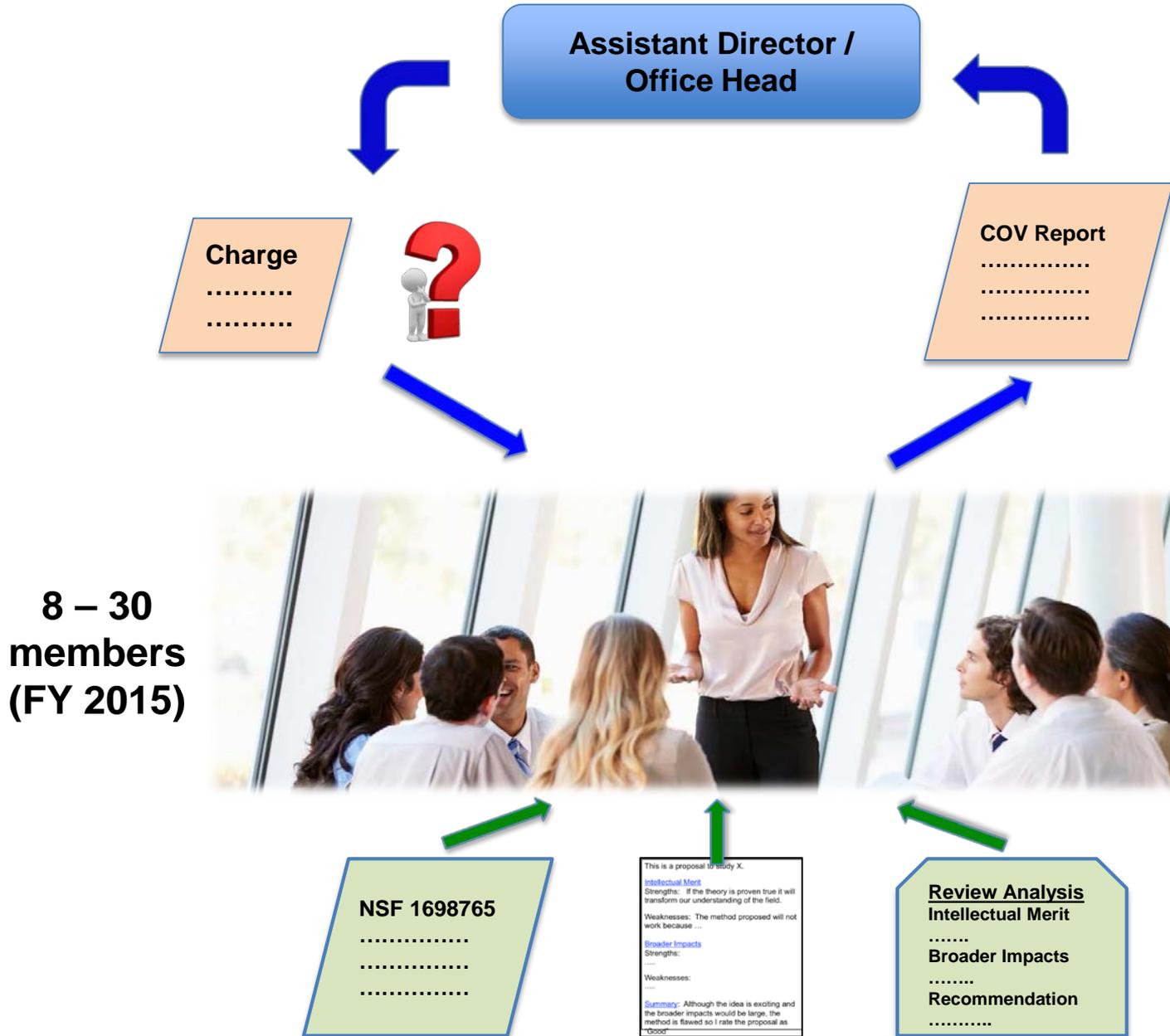
Purpose:

(1) Assessment of the quality and integrity of the implementation of the merit review process and program management.

(2) Review of portfolio balance, e.g.:

- Does the program portfolio have an appropriate balance of awards across disciplines and sub-disciplines of the activity?
- Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs?

COV Process



COV Membership



- **Representatives of disciplines, fields and activities associated with the program(s) under review – academia, industry, other agencies and laboratories, other potential users.**
- **Balanced with respect to topic, types of institutions, and geographic representation – reflect the heterogeneity of U.S. society.**
- **Include at least one member of the affiliated Advisory Committee.**
- **At least 25% of the COV members are not currently serving on any NSF Advisory Committee and have not been applicants to the program under review for at least 5 years.**

Most Common COV Comments

- Merit review process is of high quality
- Work of NSF staff is excellent
- Programs need more money
- Review process should provide advice to declined PIs
- **Quality of written reviews is variable**
- **PIs and reviewers are confused about Broader Impacts. Reviewers should receive more guidance about the Broader Impacts criterion**



Reviewer Orientation Pilot



Reviewer Orientation Pilot

Goal: To improve the quality of written reviews

How? Move orientation:

- **From:** after reviewers have written reviews
- **To:** before reviewers write reviews

Orientation:

- COI/Confidentiality [slides]; Tips on preparing reviews [video]
- Program context, additional review criteria, etc.

CONSTRUCTIVE FEEDBACK

Which review would you prefer to receive?

This proposal describes:

A long, boring summary of what is in the proposal which you already know because you wrote the proposal in the first place!

Summary Rating: Good
What? Why Good and not Excellent?!

This is a proposal to study X.

Intellectual Merit

Strengths: If the theory is proven true it will transform our understanding of the field.

Weaknesses: The method proposed will not work because:

Broader Impacts ...

Strengths:

.....

Weaknesses

.....

Summary: Although the idea is exciting and the broader impacts would be large, the method is flawed so I can only rate the proposal as "Good"

MERIT REVIEW CRITERIA

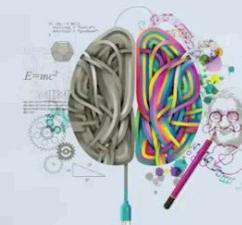
Assessing Broader Impacts:

- The potential for the proposed project to benefit society

Benefits may be:

- Inherent in the research
- Flow from activities that are directly related to the research project
- OR from activities that are supported by, but are complementary to, the main project

THE LIMITS OF INFORMATION PROCESSING



Cognitive Bias

Systematic errors in judgment and decision making

Committees of Visitors

- **Expertise** – COV members are recognized experts
- **Accountability** – Provide assurance of integrity and fairness of merit review
- **Continuous improvement** - Contribute suggestions to enhance efficiency and efficacy of review process



Questions?

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