



Evaluation Practices at the National Science Foundation

ESF Member Organisation Forum

Evaluation of Funding Schemes and Research
Programmes – Expectations, Practices, and
Experiences

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Berlin, DFG



Background

- NSF's Mission: Promote the progress of science; advance the national health, prosperity, and welfare; and secure the national defense.
- NSF OIG's Mission: Conduct independent and objective audits, investigations, and other reviews to promote the economy, efficiency, and effectiveness and safeguard the integrity of NSF programs and operations.



Overview of NSF

- Annual budget of \$5.92 billion (USD)
- Workforce of about 1,700
- Seven scientific directorates and 3 program offices
- Annual activity:
 - Over 40,000 proposals processed
 - About 10,500 new awards made
- Approximately 32,000 active awards at any given time



Funding Mechanisms

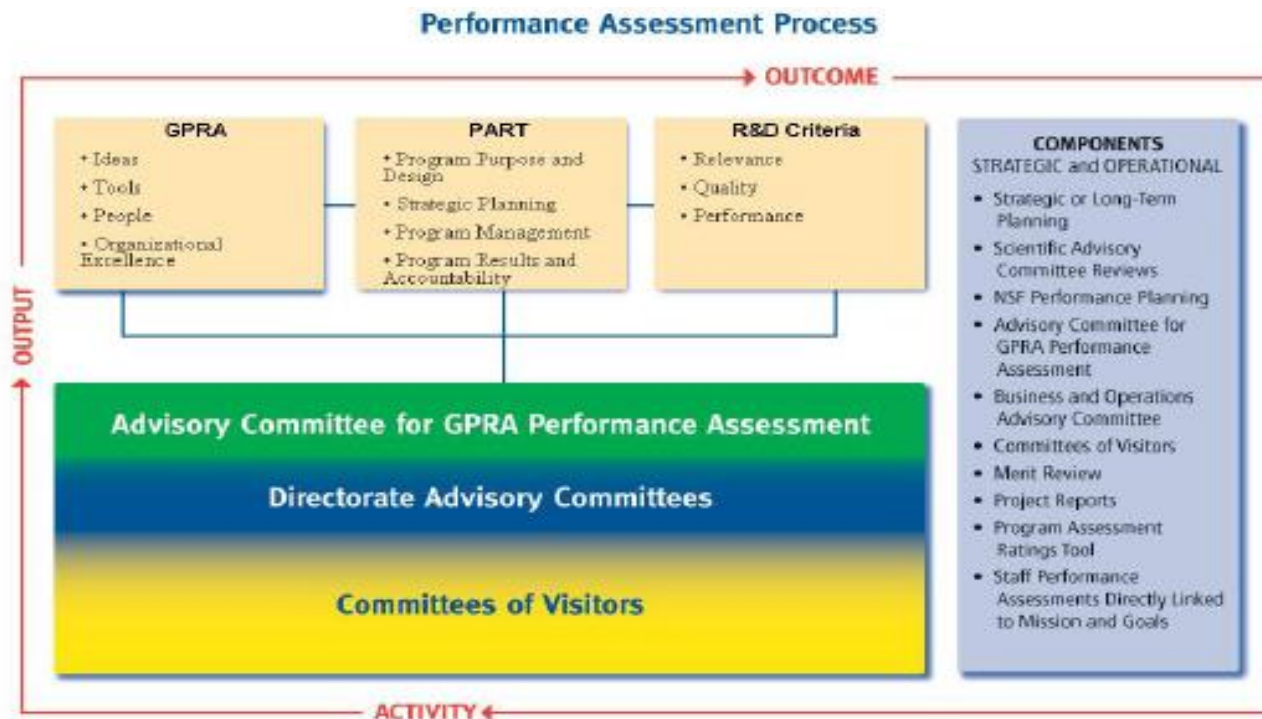
- Grants
 - Primary funding mechanism
 - Research projects conducted by individual investigators or small groups of investigators
- Cooperative Agreements
 - Projects that require substantial agency involvement, such as research centers or multi-user facilities
- Contracts
 - Products, services, and studies such as program evaluations



Research Awards Selected Through Merit-Based Reviews

- Two merit review criteria
 - Intellectual Merit
 - Broader Impacts
- Additional criteria may be used, depending on a program's goals

Overview of NSF's Performance Assessment Process



GPRA: The Government Performance and Results Act of 1993

PART: Program Assessment Rating Tool

R&D: Research and Development



Committees of Visitors and Advisory Committees

- **COVs**

- Panels of external experts
- Review each program every 3 – 5 years
- Evaluate the integrity and efficiency of processes used for proposal review and program decision-making
- Provide a retrospective assessment of the quality of results of NSF's investment

- **ACs**

- External experts with broad experience in academia, industry and government
- Provide advice on priorities, address program effectiveness
- Review COV reports and examine responses to COV recommendations



Government Performance and Results Act of 1993 (GPRA)

- Requires federal agencies to conduct strategic planning and measure performance
- NSF established the Advisory Committee for GPRA Performance Assessment (AC/GPA)
 - Comprised of experts from various fields of science, engineering, mathematics, and education
 - Reviews NSF-wide portfolio to determine progress towards strategic goals
 - Relies on COV reports, internal and external directorate assessments of programs, individual project reports, and outstanding accomplishments identified by the programs



Evaluation Practices

- Relies on variety of reviews that provide feedback on the merit review process
- Individual programs may contract for formal evaluations



Examples of Recent Program Evaluations

“The National Science Foundation’s Materials Research Science and Engineering Center Program: Looking Back, Moving Forward” (forthcoming)

- Program designed to foster organized group research on materials in the academic community
- Examined the impact of the MRSEC program and provided guidance for the future
- Conducted by the National Research Council/National Academy of Sciences



Examples of Recent Program Evaluations

“Lessons from a Decade of Mathematics and Science Reform: The Local Systemic Change through Teacher Enhancement Initiative” (December 2006)

- Content-focused teacher professional development program
- Examined impacts on teachers and teaching after participating in professional development
- Evaluation conducted by Horizon Research, Inc.



Examples of Recent Program Evaluations

“Impact on Industry of Interactions with Engineering Research Centers – Repeat Study” (December 2004)

- Program supports government-industry-university partnerships to strengthen competitive position of U.S. firms
- Examined extent industrial ERC members used different ERC activities and resources and benefits received
- Evaluation conducted by SRI International



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