

## NSF EVALUATION AND ASSESSMENT CAPABILITY (EAC)

### Overview

Evaluation must be central to NSF's decision-making, and the agency must have capacity to operate from a basis of evidence in policy decisions. In FY 2015, NSF will further instill a culture of evidence-based decision making; enhance access to evaluation results; coordinate program evaluation and collection and management of NSF programmatic data through an expansion of NSF's Evaluation and Assessment Capability (EAC).

NSF is establishing mechanisms and capabilities for Foundation-wide leadership and coordination in program evaluation. A national search for a leader will continue with additional staff to be added in FY 2014 and FY 2015. EAC, based in the Office of International and Integrative Activities, will engage those involved in research and education programs in a range of evaluation activities and will coordinate the development of decision-support tools that use portfolio data to inform results. Continuous portfolio analysis to assess the diversity and nature of NSF's portfolio of investments and rigorous evaluation of the outcomes associated with those investments over time will be used to inform programmatic decision making. These actions will allow NSF to more consistently assess the nature of its investments, to make more data-driven decisions, and to establish a culture of evidence-based planning and policy-making.

By promoting a culture that uses evidence for decision making, EAC will support the strategic goals: *Transform the Frontiers of Science and Engineering, Stimulate Innovation and Address Societal needs through Research and Education, and Excel as a Federal Science Agency.*

NSF's evaluation efforts will be comprehensive yet flexible enough to capture the impact and return on investment in three main areas.

- ***Investments in fundamental science and engineering*** in general and specific areas, is critical. The largest proportion of NSF funding goes to support fundamental research across all fields of science and engineering, including basic research about STEM education. These investments support both bold disciplinary research and, through programs such as INSPIRE, potentially transformative interdisciplinary research.
- ***Investments in people***, directly through human capital programs such as the Graduate Research Fellowship (GRF) program, CAREER, Career-Life Balance, Research Experiences for Undergraduates (REU), programs in EHR's Human Resource Development Division (HRD), and indirectly by supporting research done by students, post-doctoral fellows, and faculty.
- ***Strategic investments*** that combine the outcomes of investments in research and people and often address areas of national priority such as sustainability, advanced manufacturing, and innovation.

### Goals

The expanded leadership, expertise, and resources of EAC will enable the accomplishment of the following multi-year goals:

- **Goal 1.** Encourage a culture of evidence-based planning and policy making that routinely articulates program goals, milestones and metrics.
- **Goal 2.** Enable consistent evaluation of the impact of NSF investments with a high degree of rigor and independence.
- **Goal 3.** Develop and implement a coordinated framework for evaluating NSF-wide investments that is consistent with agency strategic and performance plans.
- **Goal 4.** Increase access to program-level post-award outcome data integrated with administrative data to support decision making and evaluation designs.
- **Goal 5.** Use outcome data and the results of evaluation to inform decisions.

To achieve these goals, NSF’s evaluation and assessment capability encompasses three interdependent structural components with three distinct areas of activity and responsibility:

- **Agency-wide Leadership for Evaluation:** EAC will establish a framework for program evaluation that can be used NSF-wide. This framework will address how NSF can appropriately evaluate the outcomes of its investments in basic science, people, and strategic initiatives. EAC will lead evaluations of key Foundation-wide programs, will provide advice on evaluation design and data issues, and will recommend models or resources as needed for evaluations that are managed in directorates and offices. As stated previously, EAC will also enhance the tools available NSF-wide for portfolio analysis and monitoring of the outcomes of research investments.
- **Strategic Data Collection, Study Design, and Management:** EAC will address how the administrative data NSF compiles through the Office of Budget, Finance, and Award Management (BFA) and Office of Information and Resource Management can be used for evaluation purposes. NCSSES will explore how data collected as part of the Science and Engineering indicators could be used for evaluation purposes given the right evaluation design. Systematic attention will be given to the information NSF gathers on awards/awardees, staffing, and budgetary allocations as part of strengthening the NSF culture to make better data-driven decisions.
- **Directorate and Office Evaluation Capacity:** Directorates and offices have increasing responsibility for assessment, monitoring, and evaluation of programs and activities based in their units, and will need to develop resources and internal competencies that meet their needs. Beginning in FY 2014, directorate and office evaluation efforts were provided increased access to the enhanced evaluation and assessment through NSF’s EAC, including enhanced portfolio analysis and decision support tools as well as NCSSES-based experts for consultation and expertise.

**Investment Framework**

**Evaluation and Assessment Capability Funding**

(Dollars in Millions)

	FY 2013	FY 2014	FY 2015
Activity	Actual	Estimate	Request
Data Collection, Study Design, and Management	-	<b>\$2.47</b>	<b>\$5.50</b>

**FY 2015 Request**

NSF’s approach will be to first expand expert centralized support and adequate resources to facilitate in-house developmental activities such as logic-modeling, feasibility studies, portfolio analysis, and gap analysis. Staff will also manage evaluations that are conducted by contractors. The new EAC leadership will recommend and establish policies and best practices that will promote rigor, transparency, and independence. In FY 2015, evaluations for three major NSF activities that cross organizational boundaries will be continued and an additional evaluation will be initiated. The programs chosen will either be major NSF-wide programs or strategic investments. These initial evaluations are intended to supply models of how an NSF-wide approach that facilitates comparisons across programs can provide valuable information to guide decision-making. In addition, NSF will invest in communications, training, and portfolio analysis tool development to support rigorous evaluation planning and the use of evidence and data for programmatic decision making. EAC will coordinate with the Division of Information Services in the Office of Information and Resource Management (OIRM), the Research and Related Activities (R&RA) directorates and offices, and the Directorate for Education and Human Resources (EHR). Data integration will enable the creation of decision support dashboards at the Enterprise Data Warehouse level will also provide an NSF-wide paradigm for the use of analytics to support decisions.

*NSF Evaluation and Assessment Capability*

EAC will also collaborate with the Budget Division in the Office of Budget, Finance, and Award Management (BFA) on the strategic monitoring of key Foundation-wide programs for performance improvement, with the evaluation of strategic investments being an important component.