

PERFORMANCE INFORMATION

This chapter provides supporting information on the performance activities used in developing NSF's FY 2006 Request. The NSF Strategic Plan for FY 2003-2008 established the overall framework for evaluating NSF's performance (as shown in the figure below).



The evaluations conducted under this framework focus on the strategic goals and the investment categories.

- For NSF's four strategic goals – People, Ideas, Tools, and Organizational Excellence – the Advisory Committee for GPRA Performance Assessment (AC/GPA) reviews key indicators for each goal to determine if NSF has demonstrated significant achievement. For the Organizational Excellence goal, the AC/GPA receives input from NSF's Advisory Committee for Business and Operations in making its determination.
- The investment categories constitute the operational component of NSF's strategic framework, and as such they are evaluated using the PART, the Program Assessment Rating Tool developed by the Office of Management and Budget. For the FY 2006 Budget Request, three investment categories were reviewed using the PART: Institutions; Collaborations; and Polar Tools, Facilities, and Logistics. In addition, the Biocomplexity in the Environment Priority Area was also assessed using the PART. All were rated "effective" (the highest rating) under the PART. (The NSF PART schedule is included at the end of this chapter.)

The following sections review the most recent evaluations of each strategic goal and the associated PART activities for FY 2006. More detailed information on NSF's performance is available in the FY 2004 Performance and Accountability Report (NSF-05-01).

People

FY 2006 Annual Performance Goal for People: NSF will demonstrate significant achievement for the majority of the following performance indicators related to the People outcome goal:

- Promote greater diversity in the science and engineering workforce through increased participation of underrepresented groups in NSF activities.
- Support programs that attract and prepare U.S. students to be highly qualified members of the global S&E workforce, including providing opportunities for international study, collaborations and partnerships.
- Promote public understanding and appreciation of science, technology, engineering, and mathematics, and build bridges between formal and informal science education.
- Support innovative research on learning, teaching and education that provides a scientific basis for improving science, technology, engineering and mathematics education at all levels.
- Develop the nation's capability to provide K-12 and higher education faculty with opportunities for continuous learning and career development in science, technology, engineering and mathematics.

Baseline / Prior Year Results: This goal is a continuation of the FY 2005 Strategic Goal based on the NSF Strategic Plan FY 2003 through FY 2008. FY 2001 was the first year that NSF had an annual performance goal with associated indicators for People. Each fiscal year's performance indicators may differ from those of prior years, but in all cases they serve as measures of progress toward achievement of NSF's strategic outcome goal. NSF was successful in achieving the annual performance goal associated with the People strategic outcome in FY 2001 through FY 2004. Evaluation of achievement includes input from the external Advisory Committee for GPRA Performance Assessment.

Means and Strategies for Success:

- Support, through merit-based grants and cooperative agreements, the most promising and capable individuals and groups throughout the U.S.
- Pay particular attention to development of people beginning careers in science and engineering.
- Use all aspects of NSF activity to embed diversity in the science and engineering workforce.
- Maintain existing partnerships and explore opportunities for developing new partnerships that focus on broadening participation. These include making presentations at national and regional meetings involving minority-serving organizations and at formal meetings of NSF programs (e.g., EPSCoR and LSAMP).
- Focus on (a) preparation and professional development of teachers of mathematics and science, and (b) alignment of standards, rigorous curricula and assessments.
- Support the production of well-trained researchers and educators by providing a variety of NSF activities (e.g., programs with industry; NSF centers) to afford interactive research and education opportunities for students, post-doctoral scientists and faculty at all career stages.
- Support approaches that integrate research and learning activities, encourage the partnering of the K-12 and higher education communities and develop intellectual capital.
- Encourage attendance at international meetings, faculty/student exchange opportunities, and research utilizing international facilities and field/logistics centers in order to further engage the NSF community in international activities.
- Promote increased linkages between formal programs and informal activities such as those involving museum and science center exhibits, public fora, or the Internet to communicate with the public.

Resources Required: This goal can be achieved with NSF's requested FY 2006 staff and budgetary resources.

FY 2006 Annual Performance Goal – Graduate Students: Number of graduate students funded through fellowships or traineeships from Graduate Research Fellowships (GRF), Integrative Graduate Education and Research Traineeships (IGERT), or Graduate Teaching Fellowships (GK-12). This goal is revised to include GK-12. Although GK-12 involves partnerships between universities and K-12 schools, the primary purpose of the program is to expand the skills and applications of STEM graduate students. Therefore, the re-worded goal will now include the three primary Division of Graduate Education programs: GRF, IGERT and GK-12.

Number of Graduate Students Funded Through GRF, IGERT and GK-12					
	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Goal				4,600	4,600
Result	3,623	4,046	4,628	&	&

& = Data not yet available

FY 2006 Annual Performance Goal – Broadening Participation of Organizations: Percentage of proposals received from academic institutions not in the top 100 of NSF funding recipients for the Institutions and Collaborations investment categories. This goal corresponds to NSF’s goals to broaden the participation by proposing institutions.

Percent of proposals received from academic institutions not in the top 100 of NSF funding recipients.						
Investment Category	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Baseline	Baseline	Baseline	Baseline	Target	Target
Institutions	73%	66%	70%	68%	72%	73%
Collaborations	63%	62%	61%	61%	62%	63%

Program Assessment Rating Tool (PART) Evaluation: PART evaluations on the Institutions and Collaborations investment categories were completed to inform the FY 2006 budget decision-making process. Overall, the PART assessments found Institutions and Collaborations to be “effective” programs and that additional attention should continue to be focused on achieving performance and efficiency targets.

Ideas

FY 2006 Annual Performance Goal for Ideas: NSF will demonstrate significant achievement for the majority of the following performance indicators related to the Ideas outcome goal:

- Enable people who work at the forefront of discovery to make important and significant contributions to science and engineering knowledge;
- Encourage collaborative research and education efforts – across organizations, disciplines, sectors and international boundaries;
- Foster connections between discoveries and their use in the service of society;
- Increase opportunities for individuals from underrepresented groups and institutions to conduct high quality, competitive research and education activities;
- Provide leadership in identifying and developing new research and education opportunities within and across science and engineering fields; and
- Accelerate progress in selected science and engineering areas of high priority by creating new integrative and cross-disciplinary knowledge and tools, and by providing people with new skills and perspectives.

Means and Strategies for Success:

NSF utilizes the following means and strategies to achieve the strategic outcome goal of Ideas and its associated long-term investment categories and annual performance goals:

- Support the most promising ideas through merit-based grants and cooperative agreements to individual researchers and groups, in partnership with colleges, universities, and other institutions – public, private, state, local, and federal – throughout the U.S.;
- Encourage partnerships and cooperative research efforts – among disciplines, in different sectors, and across international boundaries;
- Take informed risks in emerging research areas where consensus on appropriate directions (e.g., theory, methodology, or knowledge) is just beginning to form;
- Partner with a diverse range of investigators (e.g., new, minority) and institutions (e.g., research universities, community colleges, EPSCoR states, minority-serving institutions);
- Identify and support major cross-disciplinary priority areas where U.S. and NSF leadership are important;
- Identify and provide support for new and emerging opportunities;
- Develop and support a high-quality, balanced award portfolio that considers disciplines and fields, interdisciplinary research areas, and emerging opportunities; and
- Utilize the NSF core strategies of integrating research and education, promoting partnerships, and developing intellectual capital.

Baseline / Prior Year Results: This goal is a continuation of the FY 2005 Strategic Goal based on the NSF Strategic Plan FY 2003 through FY 2008. FY 2001 was the first year that NSF had an annual performance goal with associated indicators for Ideas. Each fiscal year’s performance indicators may differ from those of prior years, but in all cases they serve as measures of progress toward achievement of NSF’s strategic outcome goal. NSF was successful in achieving the annual performance goal associated with the Ideas strategic outcome in FY 2001 through FY 2004. Evaluation of achievement includes input from the external Advisory Committee for GPRA Performance Assessment.

Resources Required: This goal can be achieved with NSF's requested FY 2006 staff and budgetary resources.

Revised FY 2005 Annual Performance Goals – Award Size: The FY 2005 goals for award size and award duration will not continue in FY 2006 as NSF focuses on improving success rates for proposals. The 2005 target for average annualized award size will decrease from \$142,000 to the FY 2004 level of \$140,000.

Average Annualized Award Size for Research Grants						
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Goal		\$110,000	\$113,000	\$135,000	\$139,000	\$140,000
Result	\$106,000	\$114,000	\$116,000	\$136,000	\$140,000	&

& = Data not yet available

Program Assessment Rating Tool (PART) Evaluation: A PART on the Biocomplexity in the Environment priority area was completed to inform the FY 2006 budget decision-making process. Overall, the PART assessments found this program to be “effective” and that additional attention should continue to be focused on achieving performance and efficiency targets.

Tools

FY 2006 Annual Performance Goal for Tools: NSF will demonstrate significant achievement for the majority of the following performance indicators related to the Tools outcome goal:

- Expand opportunities for U.S. researchers, educators, and students at all levels to access state-of-the-art S&E facilities, tools, databases, and other infrastructure.
- Provide leadership in the development, construction, and operation of major, next-generation facilities and other large research and education platforms.
- Develop and deploy an advanced cyberinfrastructure to enable all fields of science and engineering to fully utilize state-of-the-art computation.
- Provide for the collection and analysis of the scientific and technical resources of the U.S. and other nations to inform policy formulation and resource allocation.
- Support research that advances instrument technology and leads to the development of next-generation research and education tools.

Means and Strategies for Success:

NSF utilizes the following means and strategies to achieve the strategic outcome goal of Tools and its associated long-term investment goals and annual performance goals.

- Support, through merit-based grants and cooperative agreements of sufficient size and duration, the most promising projects proposed by individual researchers and groups throughout the U.S.;
- Partner with other federal agencies, states, private organizations, national laboratories, or other nations to develop infrastructure by capitalizing on and leveraging the human and financial resources of each group;
- Operate an internal NSF capital planning process that encourages the development of innovative capabilities and meets the infrastructure needs of the U.S. community served by NSF;
- Develop and implement improvements for selecting, managing and overseeing large facility projects;
- Ensure that the breadth of infrastructure needs of the scientific community are examined regularly through workshops, panels, advisory groups, or other mechanisms;
- Provide broad support to the information technology community and others involved in innovative applications of cutting-edge IT tools for science and engineering;
- Upgrade the computation and computing infrastructure for all fields of science and engineering;
- Provide information on the status of the domestic / foreign science and engineering enterprise to inform science policy and priority setting;
- Develop and support a high-quality, balanced portfolio that invests in disciplines and fields, interdisciplinary research areas, and emerging opportunities; and
- Utilize the NSF core strategies of integrating research and education, promoting partnerships, and developing intellectual capital.

Baseline / Prior Year Results: This goal is a continuation of the FY 2005 Strategic Goal based on the NSF Strategic Plan FY 2003 through FY 2008. FY 2001 was the first year that NSF had an annual performance goal with associated indicators for Tools. Each fiscal year's performance indicators may differ from those of prior years, but in all cases they serve as measures of progress toward achievement of NSF's strategic outcome goal. NSF was successful in achieving the annual performance goal associated with the Tools strategic outcome in FY 2001 through FY 2004. Evaluation of achievement includes input from the external Advisory Committee for GPRA Performance Assessment.

Resources Required: This goal can be achieved with NSF's requested FY 2006 staff and budgetary resources.

FY 2006 Annual Performance Goal within Facilities – Facility Construction: For ninety percent of construction, acquisition and upgrade projects, keep any negative cost and schedule variances to less than 10 percent of the approved project plan. This goal applies to all ongoing projects and those to be completed in FY 2006 that have a total project cost of at least \$5.0 million.

PERCENT OF CONSTRUCTION ACQUISITION AND UPGRADE PROJECTS WITH NEGATIVE COST AND SCHEDULE VARIANCES OF LESS THAN 10% OF THE APPROVED PROJECT PLAN.						
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Goal	90%	90%	90%	90%	90%	90%
Result	84%	48%	88%	100%	&	&

& = Data not yet available

FY 2006 Annual Performance Goal within Facilities – Facility Operations: For ninety percent of operational facilities, keep scheduled operating time lost to less than 10 percent. This goal applies to all NSF-supported facilities that received greater than \$8 million in annual operations and maintenance support. Results for the Facility Operations goal are shown below.

Comparison with scheduled operating time.							
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Goal	Keep operating time lost due to unscheduled downtime to less than 10 percent of the total scheduled operating time.	For 90 percent of facilities, keep operating time lost due to unscheduled downtime to less than 10 percent of the total scheduled operating time.	For 90 percent of facilities, keep operating time lost due to unscheduled downtime to less than 10 percent of the total scheduled operating time.	For 90 percent of operational facilities, keep scheduled operating time lost to less than 10 percent.	For 90 percent of operational facilities, keep scheduled operating time lost to less than 10 percent.	For 90 percent of operational facilities, keep scheduled operating time lost to less than 10 percent.	For 90 percent of operational facilities, keep scheduled operating time lost to less than 10 percent.
Result	22 of 26 (85%) facilities met goal. Not achieved.	25 of 29 (86%) facilities met goal. Not achieved.	26 of 31 (84%) facilities met goal. Not achieved.	26 of 30 (87%) facilities met goal. Not achieved.	26 of 29 (89.7%) facilities met goal. Not achieved.	& &	& &

Program Assessment Rating Tool (PART) Evaluation: A PART on the Polar Tools, Logistics and Facilities investment category were completed to inform the FY 2006 budget decision-making process. Overall, the PART assessments found Polar Tools, Logistics and Facilities to be an “effective” program with recommendations to perform a targeted review through a Committee of Visitors (completed), continue to improve performance targets and monitoring, and further promote the use of Earned Value Management in facilities construction. NSF has developed goals for this investment category using the Facilities Construction goal, incorporating Earned Value Management, and Facilities Operations.

Therefore, starting in FY 2004, Polar Tools, Logistics and Facilities construction and operations are tracked separately from these other facilities.

Organizational Excellence

FY 2006 Strategic Goal for Organizational Excellence: NSF will demonstrate significant achievement for all of the following performance indicators related to the Organizational Excellence outcome goal:

- Operate a credible, efficient merit review system.
- Utilize and sustain broad access to new and emerging technologies for business application.
- Develop a diverse, capable, motivated staff that operates with efficiency and integrity.
- Develop and use performance assessment tools and measures to provide an environment of continuous improvement in NSF's intellectual investments as well as its management effectiveness.

Comparison to FY 2005 Goal: This goal is a continuation of the FY 2005 Strategic Goal developed based on the NSF Strategic Plan FY 2003 through FY 2008. NSF achieved the goal in FY 2004. Evaluation of achievement included input from two groups of external experts: the Advisory Committee for GPRA Performance Assessment and the Advisory Committee for Business and Operations.

Means and Strategies for Success:

The means and strategies NSF uses to successfully achieve Organizational Excellence include:

- Support for the NSF Academy. Enabling the future of NSF by inspiring a culture of learning, the NSF Academy is committed to ensuring the highest level of achievement for all NSF staff by providing continuous learning opportunities through a variety of educational venues in support of the agency's mission. The Academy is expanding in the areas of e-business courses, knowledge management, new employee orientation and career development activities.
- External input through the Business and Operations Advisory Committee. The committee includes leading officials in research administration, education management, information technology, and public administration. The Committee is charged with providing advice on issues related to NSF's business practices and operations, including innovative approaches to the achievement of NSF's strategic goals.
- Evaluation through the Advisory Committee for GPRA Performance Assessment. NSF determined that a more efficient and effective process for the assessment of agency performance with respect to strategic goals was to charge a single external committee of experts with review of all Foundation accomplishments. The Committee comprises about 25 independent external experts representing academia, industry, and government.
- Findings and recommendations from the NSF Business Analysis. The Business Analysis is central to NSF's overall framework for long-term investments in OE. The analysis focuses on how NSF can best respond to such challenges as managing a portfolio that is growing in both size and complexity and becoming a fully integrated organization capable of working both within and across boundaries – be they disciplinary, sectoral, institutional, or international. The analysis also addresses key underlying issues raised in the President's Management Agenda and government-wide issues identified by the Government Accountability Office.
- Continued implementation of the new Strategic Human Capital Initiatives. These initiatives include recruitment, outreach, and accountability.
- Employment of next-generation technology. NSF is continuing to re-engineer internal processes – such as through the eJacket system – to implement technology-enabled solutions for the future.

- Improved monitoring and oversight through increased funding for travel. These capabilities include additional management and oversight activities, such as site visits to major facilities, as well as increased outreach, participation in science and engineering workshops, and staff training.

Resources Required: This goal can be achieved with NSF's requested FY 2006 staff and budgetary resources.

FY 2006 Annual Performance Goals – Time to Decision: For 70 percent of proposals, be able to inform applicants whether their proposals have been declined or recommended for funding within six months of deadline or target date, or receipt date, whichever is later.

Percent of proposals NSF-wide processed within 6 mos of deadline/target date, or receipt date, whichever is later							
<i>FY:</i>	2000	2001	2002	2003	2004	2005	2006
Goal	70%	70%	70%	70%	70%	70%	70%
Result	54%	62%	74%	77%	77%	&	&

In the FY 2006 PARTs, NSF adopted goals consistent with the NSF-wide Time to Decision goal. These PART goals include a quality component that is based on a review by the Advisory Committee for GPRA Performance Assessment regarding the continued credibility and effectiveness of NSF's merit review system:

For FY 2006, NSF will make at least 70% of award decisions available to applicants within six months of proposal receipt or deadline/target date while maintaining a credible and efficient competitive merit review system, as evaluated by external experts for the following investment categories and priority areas: Individuals, Institutions, Collaborations, Nanotechnology and Biocomplexity in the Environment.

Percent of proposals processed within 6 mos of deadline/target date, or receipt date, while maintaining a credible and efficient competitive merit review system, as evaluated by external experts			
<i>Investment Category</i>	FY 2004	FY 2005	FY 2006
	Baseline	Target	Target
Individuals	74%	70%	70%
Institutions	83%	70%	70%
Collaborations	82%	70%	70%
Nanotechnology	46%	70%	70%
Biocomplexity	61%	70%	70%

Means and Strategies for Success (Time to Decision):

- Proposal pressure continues to build making this goal increasingly challenging. The number of proposal solicitations and the frequency of deadlines for these solicitations are under review.
- “Real-time” management reports that pinpoint pending proposals in danger of exceeding the six-month processing goal are distributed monthly to NSF senior management.

- Performance on prompt handling of proposals has been added to the performance evaluation criteria for some of the Foundation’s Program Officers.
- Managers and staff throughout the Foundation are being recognized for efforts to improve timely processing of proposals and thereby reduce the time to decision.
- NSF staff continue to work towards shortening time to decision by making more effective use of electronic mechanisms in conducting reviews, working cooperatively to eliminate overloads and bottlenecks, and carefully tracking each stages of the proposal processing process.

Resources Required (Time to Decision): These goals can be achieved with NSF's requested FY 2006 staff and budgetary resources.

Schedule for PART Activities

	People	Ideas	Tools	Priority Areas
FY 2005	Individuals		Facilities	Nanoscale S&E Info. Tech. Research
FY 2006	Institutions Collaborations		Polar	Biocomplexity Env.
FY 2007		Fundamental S&E	FFRDCs	
FY 2008		Centers Capability Enhancements	Infrastructure & Instrumentation	Math. Sciences Human, Social Dyn.

NSF has now completed PARTs for five investment categories and three priority areas. PARTs for the remaining five investment categories and two priority areas will be completed during the development of the FY 2007 and FY 2008 budgets, as shown in the schedule above. Detailed PART results are available at <http://www.whitehouse.gov/omb/budget/>.

