I. MANAGEMENT'S DISCUSSION AND ANALYSIS

A MESSAGE FROM THE DIRECTOR

I am pleased to present the National Science Foundation's *Performance and Accountability Report* for FY 2002. This report summarizes the Foundation's programmatic achievements, core business priorities and accomplishments, as well as its financial status of the past year.

As steward of the nation's science and engineering enterprise, NSF has responsibility for advancing the frontier of fundamental research and education in all fields of science, mathematics and engineering. For more than 50 years, NSF-supported research has improved the quality of our lives, increased productivity, bolstered economic prosperity and enhanced national security.

- In FY 2002, for example, an NSF-funded biomedical engineer extended the frontiers of drug delivery technology by developing an implantable micro-scale device for diabetics that releases a steady supply of insulin to the bloodstream.
- Other NSF-funded researchers have made discoveries that will improve hurricane predictions and enhance our understanding of climate change, while others have developed a process to control a worldwide crop-killing fungus – a fungus that many consider to be a potential biological weapon for agricultural terrorism.
- NSF-supported astronomers have reported a newly found planetary system that has a "hometown" look much like our own solar system, and among the 2002 Nobel laureates were four who currently are or have been NSF grant recipients.

Underlying the achievement of the Foundation's mission to advance the progress of science and engineering is administrative excellence and sound financial management. In FY 2002, NSF was the only federal agency to receive any successful "green" ratings for the President's Management Agenda initiatives, and it received two, one for E-government and one for financial management. Over the past year the Foundation realized cost savings of over $500,000 as a result of re-engineering a number of business processes, and made significant improvements in awards management, customer service, and large facilities management. Moreover, NSF developed a strategic plan for administration and management which currently serves as a working roadmap to guide the effective development and strategic management of the agency.

As required by the Reports Consolidation Act of 2000, it is my assertion that the financial and performance information contained in this report are complete and reliable. I am pleased to report that based on internal management evaluations and the independent auditor's report, NSF does not have any material deficiencies to report for FY 2002. NSF is in substantial compliance with all requirements of the Federal Managers' Financial Integrity Act (FMFIA) of 1982. Additionally, I assert that NSF's financial management systems are in substantial compliance with the Federal Financial Management Improvement Act (FFMIA) of 1996.

As this report makes clear, our pursuit of new knowledge, together with our commitment to the highest standards of efficiency and integrity, ensure that the Foundation is delivering the highest return to the American taxpayer.

Rita R. Colwell

January 29, 2003

AGENCY PROFILE

The National Science Foundation (NSF) supports and promotes progress in science and engineering to ensure that our nation maintains its global leadership in science and technology. Unlike other federal agencies whose support of research and development is mission-oriented, NSF is the only federal agency responsible for advancing research and education across all disciplines of science and engineering. NSF was created by the National Science Foundation Act of 1950 (P.L. 81-507), in recognition of the important contributions made by science and engineering to World War II. Over the years, the agency has acquired additional responsibilities, including fostering and supporting the development and use of computers and other scientific methods and technologies; providing Antarctic research, facilities and logistic support; and addressing issues of equal opportunity in science and engineering.

Despite its small size, NSF has had an extraordinary impact on America's scientific and engineering knowledge and capacity. With an annual budget of about $5 billion, NSF represents only about four percent of the total federal budget for basic research and development (Figure 1). However, NSF accounts for 20 percent of total federal funding of basic research and 40 percent of non-medical basic research at colleges and universities (Figure 2). In many fields, NSF is a major source of federal funding to academic institutions, including math and computer sciences (75 percent), the social sciences (48 percent), the physical sciences (35 percent), environmental sciences (44 percent), and engineering (42 percent).[1]

Figure 1.

Federal Support for Basic Research and Development in the U.S. in FY 2000

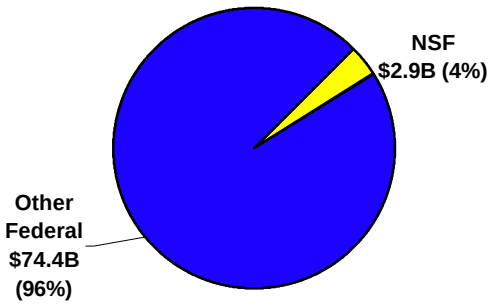
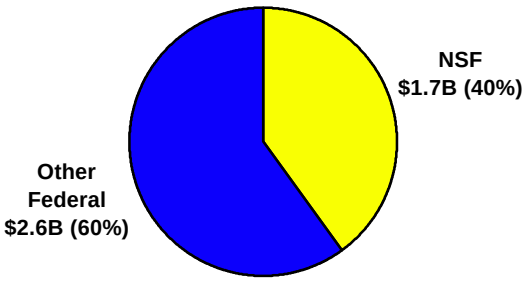


Figure 2.

Federal Spending for Academic Non-Medical Basic Research in the U.S. in FY 2000



[1] Based on FY 2000 data, which is the most recent available.

The NSF Vision: Enabling the Nation's Future through Discovery, Learning and Innovation

Today we live in a society defined by and dependent on science and technology. As noted in NSF's Strategic Plan, "Realizing the promise of the 21st century will depend in large measure on today's investments in science, engineering and mathematics research and education." For more than 50 years, NSF investments have helped train generations of outstanding researchers and educators, among them scores of Nobel laureates; advanced knowledge across the frontier of all science, mathematics and engineering disciplines; fueled innovation; contributed to productivity gains and economic growth; and enhanced the quality of the environment as well as the quality of human health and well being. America's basic research enterprise is the envy of the world in no small part due to five decades of NSF leadership and support.

Moreover, in the aftermath of the events of September 11, investments to promote and support research and development are critical for achieving America's highest priority to reduce vulnerability to terrorism and make the Nation safer. Research can lead to better equipment for rescue workers such as more protective gear and sensors to alert them to chemical or other hazards in disaster areas. Research can also lead to improved critical infrastructures like city water reservoirs, communications networks and transportation systems that can better thwart sabotage and buildings that are more blast and fire resistant. Not since World War II have NSF's efforts to catalyze progress in science and engineering been more important for securing the Nation's future.

What NSF Does and How We Do It

To achieve its mission to promote the progress of science, NSF invests in three strategic areas: People, Ideas, and Tools.

- People: NSF's first priority is to facilitate the creation of a diverse, internationally competitive and globally engaged workforce of scientists, engineers and well-prepared citizens. NSF supports efforts to improve formal and informal science, mathematics, engineering and technology education at all levels, as well as public science literacy projects that engage people of all ages in life-long learning. NSF is also committed to enhancing diversity in the science and engineering workforce. Broadening the participation of individuals who are members of underrepresented groups in the S&E workforce will not only further scientific progress by drawing on all intellectual talent but also help meet the need for a technically trained workforce. Across its science, mathematics, engineering, technology research and education programs, NSF investments support almost 200,000 people, including students, teachers, researchers, post-doctorates and trainees.

Figure 3.

Estimated Number of People Involved in NSF Activities in FY 2002

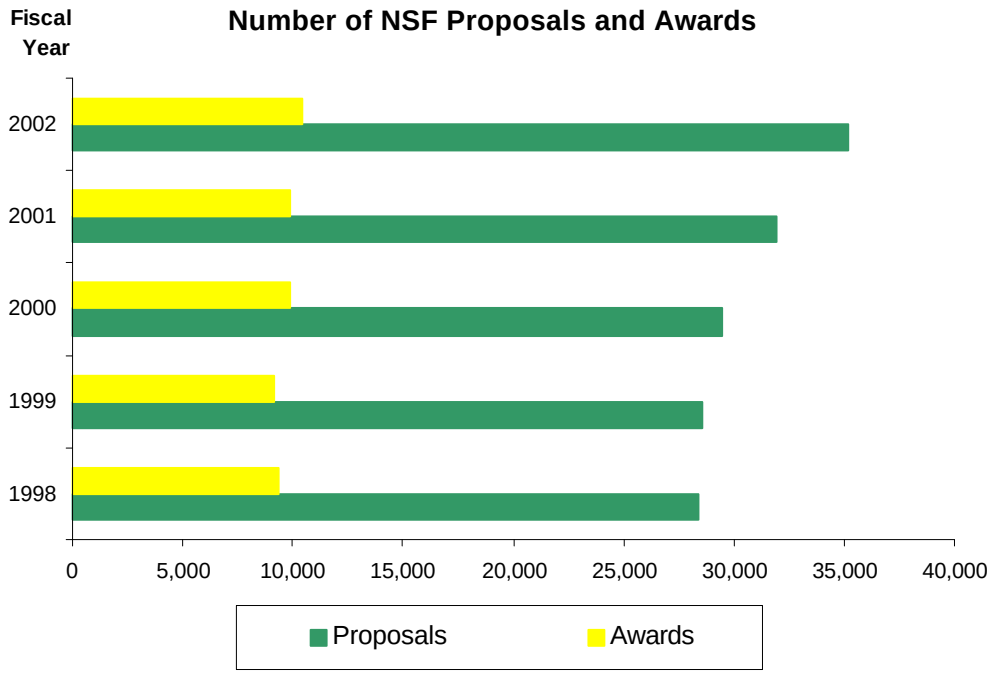
Senior Researchers	28,000
Other Professionals	11,000
Postdoctoral Associates	6,000
Graduate Students	26,000
Undergraduate Students	32,000
K-12 Students	11,000
K-12 Teachers	84,000
Total	198,000

- Ideas: NSF supports cutting edge research and education that yield new and important discoveries and promote the development of new knowledge and techniques within and across traditional boundaries. These investments help maintain the Nation's academic institutions at the forefront in science and engineering. The results of NSF-funded projects provide a rich foundation for broad and useful applications of knowledge and the development of new technologies. Support for Ideas also promotes the education and training of the next generation of scientists and engineers by providing students with an opportunity to participate in discovery oriented research.

- Tools: NSF investments provide state-of-the-art tools for research and education, such as instrumentation and equipment, multi-user facilities, digital libraries, accelerators, telescopes, research vessels and aircraft, and earthquake simulators. In addition, resources support large surveys and databases as well as computation and computing infrastructures for all fields of science, engineering and education. Support for these unique national facilities is essential to advancing U.S. research and education, with the need driven predominately by research opportunities and priorities. NSF-supported facilities also stimulate technological breakthroughs in instrumentation, and are the site of research and mentoring for many science and engineering students.

NSF itself does not conduct research or operate laboratories. Instead, the Foundation's role is that of a catalyst – seeking and funding the best ideas and most capable people, making it possible for these researchers to pursue new knowledge, discoveries and innovation. In FY 2002, of the more than 35,000 proposals submitted, over 10,400 awards were made to about 1,800 colleges, universities, and other public and private institutions throughout the U.S.

Figure 4.



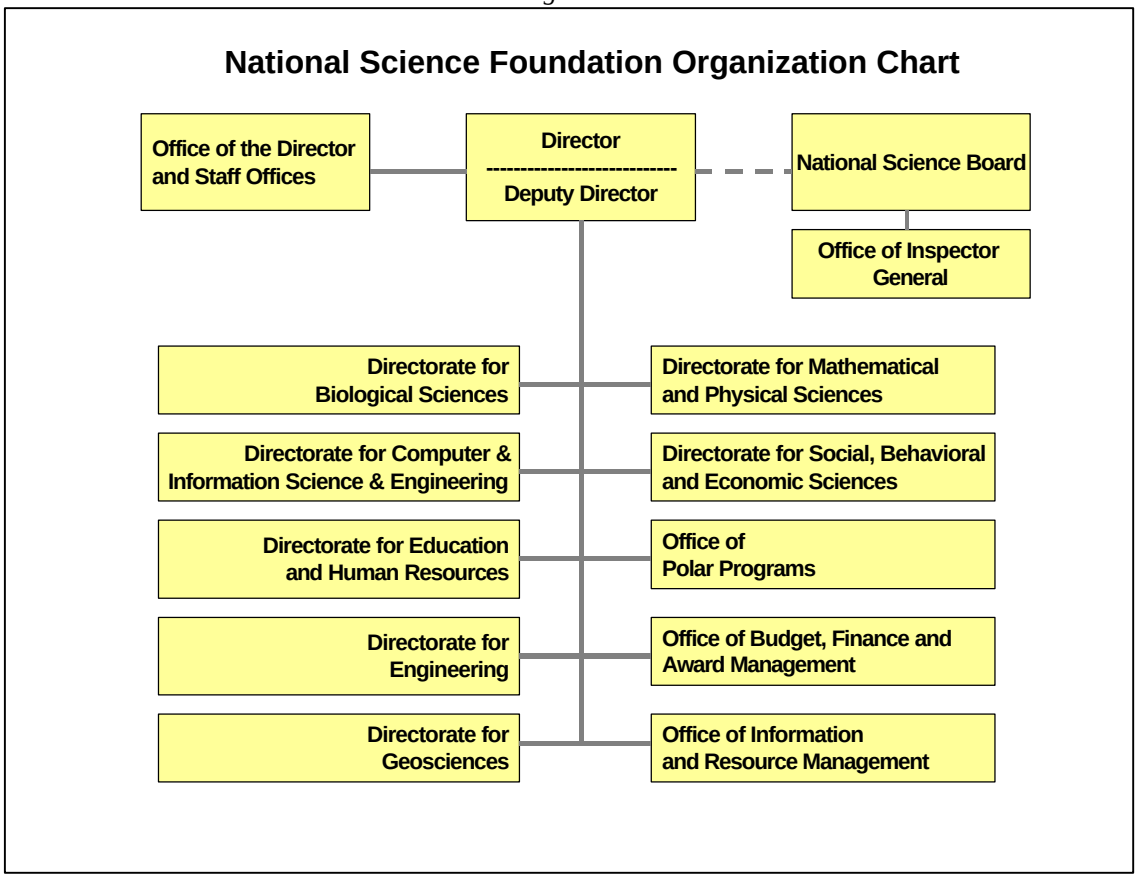
Nearly 90 percent of NSF funding is allocated through a merit-based competitive process that is critical to fostering the highest standards of excellence and accountability – standards for which NSF is known the world over. Reviewers focus on two primary criteria – the intellectual merit of the proposed activity and its broader impacts, e.g., how well the activity promotes teaching, training, and learning and what may be the benefits of the proposed activity to society. Reviewers also consider how well the proposed activity fosters the integration of research and education and broadens opportunities to include a diversity of participants, particularly underrepresented groups.

Organization Structure

NSF is headed by a director appointed by the President and confirmed by the U.S. Senate. In 1998, distinguished biologist Dr. Rita R. Colwell became the Foundation's eleventh Director and the first woman to head the Foundation. A 24-member National Science Board (NSB) oversees the policies and programs of the Foundation. NSB members, prominent contributors to the science, mathematics, engineering and education communities, are also appointed by the President with the consent of the Senate. The NSF director is a member *ex officio* of the Board. Both the director and NSB members serve six-year terms. The Board also serves the President and the Congress as an independent advisory body on policies related to the U.S. science and engineering enterprise.

NSF is structured much like an academic institution, with directorates organized by discipline and fields of science and engineering, and for science, math, engineering and technology education. There are seven program directorates, an Office of Polar Programs and two business offices (Figure 5). Appendix 1 provides a detailed description of each directorate and business office.

Figure 5.



NSF is funded primarily by Congressional appropriations and maintains a staff of about 1,240. To ensure that the science and engineering projects funded by the Foundation remain at the frontier of the research enterprise, NSF regularly recruits visiting scientists, engineers and mathematicians who are at the forefront of their fields, to spend one to three years with the agency to complement the permanent workforce. These individuals motivate innovation in perspective and stimulate science and engineering investments that may not occur otherwise.

Operations Management: Doing Business More Efficiently and Effectively

NSF is recognized as a well-run agency with a long record of success in managing the resources entrusted to it. Pursuing more effective and efficient core management operations is a longstanding priority for the agency. Although NSF's budget has nearly doubled in the last ten years, the agency's staffing level has remained relatively constant. Maintaining operations overhead at five percent of the agency's budget is an ongoing challenge, as workload has grown more complex with involvement in more multi-disciplinary, partnership and international activities, as well as new large research facility projects. The agency has accommodated its increased funding and programmatic responsibilities by leveraging its agile, motivated workforce and continuing to re-engineer business processes to enhance productivity. NSF is a recognized leader in financial management, particularly in its use of advanced information technologies to improve internal operations and business transactions with the academic research community. Currently, NSF is the only federal research agency routinely receiving and processing virtually all its proposals electronically.

In FY 2002, in line with the Administration's call for better management and improved program performance, NSF engaged considerable efforts in a wide range of activities, several which are highlighted here.

- *Developed a Strategic Plan for Administration and Management*: In FY 2002, NSF developed a comprehensive strategic plan for its investments and responsibilities in administration and management (A&M). The plan builds upon efforts begun in FY 2000 and FY 2001, to plan for new information technology (IT) investments and to assess the impact of new systems and processes on the NSF workforce. The A&M Strategic Plan *(www.nsf.gov/od/am)* elevates these earlier efforts by linking them directly to the five government-wide initiatives included in the President's Management Agenda (PMA). (See Figure 6.) The Plan serves as a working roadmap, providing a set of goals that will drive the effective development and strategic management of the agency over the next three years. The Plan directly supports the growth of the agency through three significant administration and management strategic goals: strategic management of human capital; ongoing development of effective and efficient business processes; and sustained investment in supportive, state-of-the-art technologies and tools. Central to the plan is a comprehensive multi-year business analysis, which will inform progress in each of the initiatives and will ultimately result in an organization that conducts business with even greater efficiency and productivity.

- *Initiated Business Analysis:* Realization of the strategic goals outlined in the Administration and Management Strategic Plan must begin with a knowledge of the agency – the current staff competencies and skill mix, core business processes and current IT systems and applications. NSF has engaged the services of Booz Allen Hamilton, a global leader in strategic planning and technology consulting, to assist the agency in developing a

comprehensive documentation of the Foundation's current business process, human capital and IT environments. The outcomes of this analysis will guide long-term administration and management investments that promise important results for the agency's mission operations. The analysis will enable NSF to respond to challenges such as the management of increasingly interdisciplinary research and education portfolio and management and oversight of a growing number of complex large facility projects. It will also help the agency respond to issues raised in the President's Management Agenda and to government-wide issues identified by the General Accounting Office. Initial results are expected in FY 2003.

- *Achieved Progress on President's Management Agenda*: Last year, the PMA initiated a government-wide effort to improve the management, performance and accountability of federal agencies. An Executive Management Scorecard is now issued quarterly by the Office of Management and Budget (OMB) to track the progress of agencies in meeting specific criteria under the government-wide initiatives that constitute the PMA. As shown in the following chart, at year-end, NSF maintained its "green" successful status for Financial Performance and received a second "green" for E-Government. For the second consecutive year, NSF remains the only federal agency to receive a green rating for any of the PMA initiatives. Although NSF did not fully meet the standards for success for the Strategic Management of Human Capital, Competitive Sourcing and Budget and Performance Integration initiatives, the agency has made progress overall and has worked with OMB to develop a framework for "getting to green" in future years. NSF's newly developed *Strategic Plan for Administration and Management* will serve as the blueprint for accomplishing all five PMA initiatives.

Figure 6.

President's Management Agenda Scorecard

	Baseline 9/30/2001	Status: 9/30/2002	Progress: FY 2002-Q4
Strategic Management of Human Capital	R	R	G
Competitive Sourcing	R	R	R
Financial Management	G	G	G
Expanding E-Gov't.	Y	G	G
Budget and Performance Integration	R	R	Y

Note: Green represents success; yellow for mixed results; and red for unsatisfactory. Ratings were issued by the Office of Management and Budget. For more detailed information on the standards of success for each of the President's Management Agenda initiatives, see www.whitehouse.gov/omb/budget/fy2003/msr06.html.

- *Improved Customer Service:* In an effort to be more responsive to its primary customers, the science and engineering research and education community, NSF has included annual GPRA (Government Performance and Results Act) performance goals that address the community's two most significant concerns: time to prepare proposals and time to decision. In FY 2002, 94 percent[2] of all NSF program announcements were available at least three months prior to the proposal due date and 74 percent[3] of proposals were processed within six months of submission. Both results were significant accomplishments that represented a year-long focused effort by staff across the Foundation.

- *Improved Large Facilities Management:* During FY 2002, NSF made significant progress in implementing improvements noted in the Large Facility Projects Management & Oversight Plan. The Plan was developed in cooperation with the OMB and the National Science Board (NSB). A best practices guide for managing and overseeing large facility projects was developed and will be released for use by NSF and awardee personnel in FY 2003. NSF also revised the GPRA management goals for facilities construction and operations so that they better measure performance in this critical area. In addition, definitions of key terms were developed and system improvements for GPRA data collection and reporting were implemented.

- *Improved Awards Management*: NSF developed and formalized a risk-based monitoring program, updated written grant monitoring procedures, developed site visit monitoring tools and established a program for follow-up. Together these constitute a business and administrative awards monitoring program for the Foundation, although NSF will continue to pursue improvements in awards monitoring.

- *Re-engineered GPRA Assessment Process:* This year, NSF re-engineered its GPRA (Government Performance and Results Act) assessment and reporting process in anticipation of upcoming OMB requirements to accelerate the reporting of agency performance results. An external committee of experts was established and met in September 2002, to conduct an evaluation of NSF's strategic outcome goals. Both the committee and NSF staff agreed that the re-engineered process was more streamlined and efficient and warranted repeating through at least one more cycle.

Cost Efficiencies Realized in FY 2002

Doing more with less and working smarter by instituting more efficient and cost-effective business processes have always been NSF hallmarks. In FY 2002, the agency re-engineered a number of business processes that yielded significant cost savings. It is conservatively estimated that cost efficiencies realized in FY 2002 totaled nearly $540,000.

- *Electronic information dissemination:* NSF launched its external business web site in 1994. As customer access to the Internet expanded over the years, NSF began offering its most popular documents online. Today, virtually all NSF publications are electronically available. In FY 2002, no program announcements were printed or mailed; there were 74,000 online downloads of the NSF Bulletin, a monthly document describing NSF funding opportunities;

[2] GPRA performance target for FY 2002 was 95 percent.

[3] GPRA performance target for FY 2002 was 70 percent.

and over 35,000 monthly downloads of the Grant Proposal Guide. Compared with the prior year, in FY 2002, printing costs dropped 22 percent – from $500,000 to $392,000 – for a cost savings of $108,000.

- *Bulk Mailing Costs:* With the decrease in printed publications, bulk mailing costs have also decreased significantly. In FY 2002, there was a 45 percent decrease in the number of pieces of bulk mailings – from nearly 206,000 in FY 2001 to about 114,000 in FY 2002. This resulted in a savings in bulk mailing costs of $35,000 – from $102,000 in FY 2001 to about $67,000 in FY 2002.

- *POD/Electronic Review:* NSF created "Print on Demand" (POD) to encourage the growth of electronic proposal reviews. POD precludes the need for printing multiple copies of proposals because reviewers can access proposals electronically or, if they prefer, submit a POD request for paper copies to be sent to them. As a result of the availability of POD, in FY 2002, there was a significant increase in the number of programs that adopted the electronic review process. Of the 447 programs that participated in the POD/electronic review program in FY 2002, 48,973 proposals were actually printed compared to the 170,520 proposals that would have been printed if not for POD. It is estimated that, based on an average cost of $3.43 for printing and mailing a proposal, NSF saved at least $203,415.

- *Electronic Signatures/Jackets:* Prior to electronic signature implementation last year, paper signatures were obtained from organizations submitting proposals and supplements. The majority of these were submitted through express mail, and most were single signature page submissions. With about 35,000 proposals and 6,000 supplements submitted last year and assuming express mail costs average about $8.00, savings for NSF's research and education community is conservatively estimated at $300,000. On the NSF side, a computer specialist was freed-up from her full-time task of opening paper signature submissions, entering them in the electronic systems and working with NSF divisions who placed these signatures in paper jackets. These processing steps were eliminated in FY 2002, for a conservative estimated savings of $40,000.

- *Videoconferencing:* Following September 11, there was considerably more interest in videoconferencing, and in FY 2002, videoconferencing became a mainstream meeting technology at NSF. NSF supported 110 videoconferences in FY 2002; program offices have reported that they have been able to reduce travel costs by scheduling videoconferences for a least some of their attendees. One program office estimated that in FY 2002, videoconferencing saved about $140,000 in panel travel costs.

- *Online Self-booking Travel:* In FY 2002, NSF adapted an online self-booking tool, FedTrip, for staff travelers. Advantages in using FedTrip include flexibility for the traveler in making his/her own reservations and the ability to make changes up to the time of ticketing. In terms of cost savings, per ticket fees have dropped by more than half – from $34 to $15 – per ticket. Since November 2001, 520 tickets have been issued, saving NSF nearly $9,880 in fees. This number will continue to grow as users become more comfortable with self-booking.

SUMMARY GPRA PERFORMANCE RESULTS

This discussion provides a summary overview of NSF's FY 2002 GPRA performance results. For a comprehensive discussion of NSF's performance goals and results, see Chapter II, "FY 2002 GPRA Performance Results."

In compliance with the Government Performance and Results Act of 1993, NSF began implementation of GPRA in 1997 by developing an agency GPRA Strategic Plan.[4] In September 2000, NSF updated the Strategic Plan to cover the period FY 2001-2006, and established three strategic outcome goals – People, Ideas and Tools (PIT).[5] The PIT strategic outcome goals provided the guiding framework for NSF's FY 2002 Annual Performance Plan as well as NSF's FY 2002 Budget, which were developed concurrently to ensure a direct link between programmatic activities and the achievement of NSF's strategic outcome goals.[6]

GPRA implementation has been a particular challenge for agencies like NSF whose mission involves research activities. This is primarily due to: (1) the difficulty of linking research outcomes to annual investments and the agency's annual budget; it is not unusual for research outcomes to appear years or decades after the initial investment, and (2) the fact that assessing the results of research is inherently retrospective and requires the qualitative judgment of experts. NSF developed an alternative format that has been approved by OMB, using external expert review panels to assess research results and reporting research outcome goals on a qualitative rather than a quantitative basis. The use of external expert panels to review research results and outcomes is a common, long-standing practice used by the academic research community.

This year, in response to the Administration's mandate to accelerate the reporting of agency management and program performance results, NSF re-engineered its GPRA reporting and assessment process. An external committee of experts, the Advisory Committee for GPRA Performance Assessment (AC/GPA), was established in the summer of 2002 and met in the fall to evaluate a collection of data and information compiled by NSF staff for the entire Foundation. The Committee also had access to Committee of Visitor (COV) reports of program assessments conducted by external programmatic expert panels that are routinely used by NSF program management; COV (and Advisory Committee) reports have also been used for the Foundation's annual GPRA assessments in the past. AC/GPA's final report called the Foundation's new process "a positive and welcome change," suggested improvements in the process and recommended that it be continued through at least one more cycle. The Committee's "Report of the Advisory Committee for GPRA Performance Assessment," available on NSF's website (*www.nsf.gov/od/gpra/reports/transmittal_letter.doc),* provided important input for the agency's FY 2002 GPRA performance report.[7]

[4] *NSF's GPRA Strategic Plan* can be found on the NSF website (www.nsf.gov/od/gpra).
[5] See page I-4, "What NSF Does and How We Do It," for a more detailed description of NSF's three strategic outcome goals of People, Ideas and Tools.
[6] *NSF's FY 2002 Annual Performance Plan* can be found on the NSF website (www.nsf.gov/od/gpra). *NSF's FY 2002 Budget Request to Congress* can be also be found on the NSF website, (www.nsf.gov/od/olpa).
[7] See Chapter II, "FY 2002 GPRA Performance Results."

NSF's Performance Goals and Results

For FY 2002, NSF's annual performance goals are organized into two categories – Strategic Outcome Goals and Management Goals.[8] The Strategic Outcome Goals focus on the long-term results of NSF grants and programs. They represent what the agency seeks to accomplish with the investments that are made in science and engineering research and education. To accomplish the NSF mission to promote the progress of science, NSF invests in the best People, with the best Ideas and provides them with the Tools they need. NSF's outcomes from its awards provide evidence of the success of NSF's investments in People, Ideas and Tools. NSF's Management Goals focus on the factors and strategies that enable the Foundation to successfully implement and attain its strategic outcomes. They relate to the procedures that the agency uses to make awards, fund and manage capital projects, and otherwise serve its customers.

Figure 7.
FY 2000 – FY 2002 Performance Results
Number of Goals Achieved

	FY 2000	FY 2001	FY 2002
Strategic Outcome Goals	6 out of 8 (75%)	4 out of 5 (80%)	4 out of 4 (100%)
Management Goals	12 out of 20 (60%)	11 out of 18 (61%)	14 out of 19 (74%)
Total	18 out of 28 (64%)	15 out of 23 (65%)	18 out of 23 (78%)

Note: In FY 2000 and FY 2001, Management Goals include goals that have been identified in previous years as Investment Process Goals.

In FY 2002, NSF was successful for 78 percent – 18 out of 23 – of its GPRA performance goals. There was a notable improvement in the agency's performance; in the prior two years NSF achieved about 65 percent of its GPRA goals.

Strategic Outcome Goals: NSF was successful for all four outcome goals related to:

- Developing "a diverse, internationally competitive and globally-engaged workforce of scientists, engineers, and well-prepared citizens;"
- Achieving systemic reform in K-12 schools;
- Enabling "discovery across the frontier of science and engineering, connected to learning, innovation and service to society;" and,
- Providing "broadly accessible, state-of-the-art and shared research and education tools."

[8] The Investment Process Goals of previous years have been subsumed within the Management Goals.

The following examples illustrate the impact and success of NSF's investments in People, Ideas and Tools. Because many research results appear long after the period when the investment is made, these are outcomes and results of NSF support of research and education projects made in prior years but which emerged in FY 2002. Additional examples can be found in Chapter II.

FY 2002 Nobel Laureates: Among the FY 2002 Nobel Prize recipients were four who currently are or have been NSF grant recipients. They include Raymond Davis, Jr., of Brookhaven National Laboratory and the University of Pennsylvania, who received the Nobel Prize in Physics for work on the detection of solar neutrinos; John B. Fenn of the Virginia Commonwealth University, recipient of the Nobel Prize in Chemistry for his work developing mass-spectrometric analysis tools that allow scientists to "weigh" and identify large biological molecules; Daniel Kahneman of Princeton University, who received the Nobel Prize in Economics for his groundbreaking work in behavioral economics; and Vernon L. Smith of George Mason University, who also received the Nobel Prize in Economics for founding the field of experimental economics.

Strengthening Undergraduate Education: The project "Strengthening Undergraduate Education through Research in Radio Astronomy" is designed to combine the development of a small radio telescope with the development of educational materials and a Web-based environment to support the use of radio astronomy in undergraduate research. Twenty-three institutions have utilized the 37-meter telescope for educational activities; 165 students participated in the activities, 8 student theses were written based on undergraduate research experiences associated with the use of the telescope or Web-based material, and 14 student projects were completed. In addition, faculty from 23 community colleges and small four-year colleges attended in an NSF Chautauqua course on "Radio Astronomy in the Undergraduate Classroom." Two articles and a book chapter were either published or accepted for publication based on the work of the project.

Project Links Pre-Service Teacher Preparation to In-Service Teacher Enhancement: To address the need for more science and math teachers, the Montana Systemic Teacher Excellence Preparation (STEP) project has connected state universities and colleges with Tribal Colleges and has combined distance education courses with on-site courses. In Years 3-5 of the project, investigators developed an "early career support program" that served 127 beginning teachers and continues to serve about 60 new teachers each year. To date, there is a 95 percent retention rate in the profession for teachers who participated in the program. In addition to providing professional development for new teachers, the Montana STEP project has established an M.S. in Science Education degree program which is an interdisciplinary program involving both on-campus and distance learning. It is the only inter-college program for science education in the U.S. with a 65 percent distance education component. To date, 119 teachers have been admitted to the program; 42 have received graduate degrees and 77 are currently enrolled.

Composite Bone Material: An NSF-supported project has developed a nanoscale self-assembly technique to create composite materials very similar to bone tissue. Specifically, new polymeric molecules that assembled on their own to form cylindrical nano-sized fibers. These fibers direct the growth of reinforcing minerals such as hydroxyapatite into an alignment that is very similar to that in natural bone. This new technique holds promise not only for development of artificial bone, but also for repairing nerve fibers, creating nano-electronic wires, and preparing high-strength polymeric composite. This result was published in *Science* and elicited major coverage in *Chemical & Engineering News* and other publications.

National Virtual Observatory (NVO): The first concept of the virtual observatory was developed with the help of an NSF Small Grant for Exploratory Research award that enabled fuller discussions in the community and the creation of a white paper on the idea. This year saw the culmination of this effort with the support of a large collaborative project to build the framework for the NVO. This project will federate astronomical data sets and establish them as a common resource for both researchers and the public. The project also establishes the protocols, standards and tools that will permit the large astronomical data sets of the future to be fully utilized. Coordinated efforts are also underway at collaborating institutions to develop archives, visualization tools and related resources.

Management Goals: Among agency achievements were the following:[9]

- Processed 74 percent of proposals within six months of receipt, compared to 62 percent in the prior year. The agency exceeded its target goal of 70 percent. The success of this goal is particularly significant in light of the fact there was a 10 percent increase in the number of proposals submitted in FY 2002 – from 31,942 in FY 2001 to over 35,000 in FY 2002. This is the first year that NSF has achieved this goal since its establishment in FY 1999.
- Allocated 88 percent of funds to projects reviewed by external peer groups and selected through merit-based competition. This is the fifth consecutive year that the agency has exceeded the FY 1997 baseline target goal of 85 percent.
- Increased the diversity of the science and engineering staff; compared to an FY 2000 baseline, there was a 17 percent increase in female hires (41) and a 42 percent increase (27) in the number of hires of who were members of underrepresented minority groups. NSF has achieved this goal every year since its establishment in FY 1999.
- Increased average annualized award size for research projects to nearly $116,000, exceeding the target goal of $113,000. The goal to increase award size has been achieved in both years of its existence.
- Met the goal for cost of construction and upgrade projects. For projects initiated after 1996 and completed in FY 2002, all met goal of keeping total cost within 110 percent of their estimate made at the initiation of construction. Although this goal has been in effect since FY 1999, it has been applied only in the last two years when construction/upgrade projects have been completed. FY 2002 marks the second consecutive year that the agency has achieved this goal.
- Completed 31 paperless projects as part of NSF's overall "e-business" effort to move proposals through the entire review process. The FY 2002 target was to conduct 20 paperless projects – double the FY 2001 projects – as part of NSF's aggressive move towards doing business more efficiently.

Among the management goals that the agency did not achieve were the following:

- 94 percent of the agency's program announcements were available at least three months prior to its proposal submission deadline; the agency missed its 95 percent target goal by a mere one percent. Since establishment of this goal in FY 1999, NSF has achieved this goal only once. Failure to achieve this goal has been partly attributed to inadequate planning; in FY 2003, NSF will work toward this goal by planning for competitions

[9] For a complete discussion of NSF's GPRA performance goals and results, including baseline data, recent trends, performance targets, explanations of why the agency was not able to meet certain goals and the agency's plans to achieve these goals in the future, see Chapter II, "FY 2002 GPRA Performance Results." Also, a summary chart of performance results can be found in Chapter II.

requiring individual announcements and solicitations as far in advance as possible and initiating clearance processes in a timely manner.

- NSF was not able to establish a baseline for participation of members of underrepresented groups in NSF proposal review activities due to a low response rate. Since this information is provided on a voluntary basis, NSF will continue to encourage reviewers to provide demographics information.
- NSF did not achieve its goal to increase the average duration of awards for research projects to at least three years. This largely reflected the limited resources available to achieve competing goals of increasing award size – which the agency was successful in achieving – and increasing award duration. Although this is the second consecutive year that the agency failed to achieve this goal, NSF has made steady progress over the last four years in increasing the average duration rate – from the FY 1998 baseline of 2.7 years to the FY 2002 rate of 2.9 years.
- NSF did not meet its facilities goal related to unscheduled down time; 84 percent of NSF-supported facilities kept operating time lost due to unscheduled downtown to less than 10 percent of the total scheduled operating time. The target goal was 90 percent. In the last three years, unscheduled down time has remained at around 85 percent. Unscheduled down time has been attributed to circumstances beyond the control of the facility manager, such as unfavorable weather or electric power supply interruption. In FY 2003, NSF will continue to work with awardees to identify obstacles to successful performance and develop plans to avoid or mitigate their consequences in the future. NSF is also modifying this goal to improve clarity.

Data Verification and Validation

Foundation staff verified and validated all NSF performance data. In addition, for the third consecutive year, NSF engaged an independent, external consulting firm – IBM Business Consulting Services (IBM) – to conduct verification and validation review of selected performance measures. IBM's assessment was based on criteria established by the General Accounting Office's *Guide to Assessing Agency Annual Performance Plans (GAO/GCD-10.1.20).* IBM assessed the accuracy of NSF's performance measures, described the reliability of the processes NSF uses to collect, process, maintain and report data; reviewed system controls to confirm that quality input results in quality output; created detailed process descriptions and process maps for those goals being reviewed for the first time; and identified changes to processes and data for those goals undergoing and update review. In their report, IBM stated the following: "From our fiscal year (FY) 2002 review, we conclude that NSF has made a concerted effort to ensure that it reports its performance results accurately and has effective systems, policies, and procedures to ensure data quality. Further, our efforts to re-calculate the Foundation's results based on these systems, processes and data were successful." The IBM study concluded that, "…NSF has reported all 19 management goals and one EHR performance goal… in a manner such that any errors, should they exist, would not be significant enough to change the reader's interpretation of NSF's reported outcome in meeting the supporting performance goal. Overall, NSF relies on sound business processes, system and application controls, and manual checks of system queries to report performance. We believe that these processes are valid and verifiable."[10]

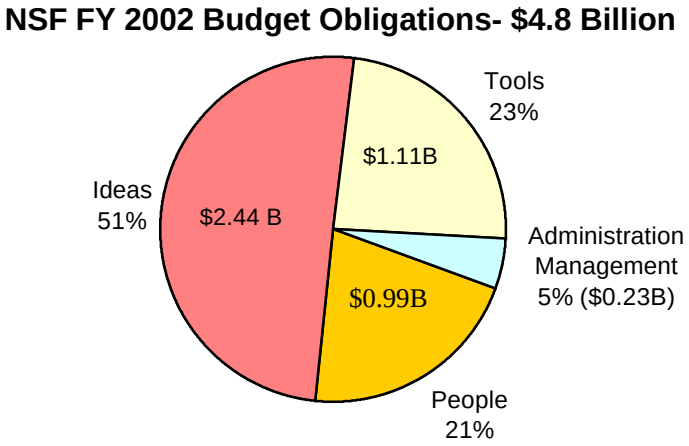
[10] The executive summary of the IBM verification and validation report can be found on page II-146.

The Linkage Between Budget, Performance and Costs

NSF's budget is comprised of five Congressional appropriations:[11] Research and Related Activities (R&RA); Major Research Equipment and Facilities Construction (MREFC); Education and Human Resources (EHR); and Salaries and Expenses (S&E). The fifth appropriation funds the Office of Inspector General. Approximately 95 percent of NSF's budget goes directly to the investments it makes in support of its Strategic Outcome Goals of People, Ideas and Tools. The remaining five percent of the budget goes toward Administration and Management, which provides support for the immediate activities of the agency, e.g., processing proposals, issuing awards and overseeing projects. These are the activities that are addressed by the agency's Management Goals.

As shown in Figure 8, in FY 2002, support for the Strategic Outcome Goals of People, Ideas and Tools totaled $0.99 billion, $2.44 billion, and $1.11 billion, respectively. Support for Administration and Management activities, which are addressed by the Management Goals, was $230.58 million in FY 2002. (Note that these base budget obligations of $4.8 billion do not include Trust Funds, H-1B Nonimmigrant Petitioner Receipts, and upward adjustments of undelivered orders.)

Figure 8.



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The following table (Figure 9) shows the support that each of NSF's budget accounts provided each of the agency's strategic outcome goals and the management goals in FY 2002. Note that the R&RA and EHR accounts have components distributed among all three strategic outcome goals. The deployment of funds in these two budget accounts to the People, Ideas or Tools goals is done on a program-by-program basis. In practice, each of NSF's several hundred programs is

[11] Other revenue sources such as reimbursable authority, appropriations transfers from other federal agencies, donations and H-1B Nonimmigrant Petitioner receipts account for a minor portion of NSF's budget.

assigned to one of the People, Ideas or Tools strategic areas based on the program's principal objective. A list of programs associated with each strategic outcome goal can be found in the NSF Strategic Plan *(www.nsf.gov/od/gpra)*. NSF's Statement of Net Cost is also presented in terms of the agency's three strategic outcome goals of People, Ideas and Tools. Cost data is also developed at the programmatic level, by tracking the program elements and their alignment with the People, Ideas, and Tools goals.

This view of how NSF deploys its budget does not reflect a key facet of NSF's approach – the multiple purposes each investment serves. For example, research projects in programs categorized under the Ideas strategic outcome almost always provide funds that involve graduate students, thus they contribute to the People outcome. Such indirect investments are important to the attainment of the Foundation's goals, and NSF program officers are expected to take such potential contributions into account when making awards.

Figure 9.
FY 2002 Support of NSF's Strategic Outcome and Management Goals
(Obligations in Millions of Dollars)[1]

	Strategic Outcome Goals			**Management Goals**	
Account[a]	*People*	*Ideas*	*Tools*	*Administration & Management*	Total
R&RA	314.9	2,290.0	972.9	38.2	3,616.0
EHR	679.9	146.3	24.2	15.7	866.1
MREFC	-	-	115.4	-	115.4
S&E	-	-	-	169.9	170.0
OIG	-	-	-	6.7	6.7
Total	$994.8	$2,436.3	$1,112.4	$230.6	$4,774.1

[1] Base obligations of $4,774.1M plus Trust Funds ($29.8M), H-1B Nonimmigrant Petitioner Receipts ($57.3M), and upward adjustments to undelivered orders ($7.1M) equals $4,868.3 M which is direct obligations as shown on the Statement of Budgetary Resources.
[2] R&RA=Research & Related Activities; EHR=Education and Human Resources; MREFC=Major Research Equipment and Facilities Construction; S&E=Salaries and Expenses; and OIG=Office of Inspector General. Numbers may not add due to rounding.

MANAGEMENT INTEGRITY: CONTROLS, COMPLIANCE AND CHALLENGES

The Federal Managers' Financial Integrity Act of 1982 (FMFIA) requires an annual review of an agency's internal accounting and administrative control systems. Consistent with the provisions of the Reports Consolidation Act of 2000, the results of NSF's management evaluations required by FMFIA for the period ending September 30, 2002 are being reported here in the agency's *FY 2002 Performance and Accountability Report*.

The National Science Foundation's Management Controls Committee (MCC), chaired by the Chief Financial Officer, is responsible for the oversight and annual reporting of the Foundation's management and internal controls program to the Director. The Committee requires that each year individual offices provide assurance statements on their respective FMFIA reviews and the status of management controls within their respective organizations. Individual assurance statements from each of NSF's Assistant Directors and Staff Office Directors serve as the primary basis for the Foundation's assurance that management controls are adequate (Section 2 of FMFIA), and that NSF systems are in compliance with all applicable laws and administrative requirements, including OMB Circulars A-123 (*Management Accountability and Control*) and A-127 *(Financial Management Systems)*, and Section 4 of FMFIA.

NSF's FMFIA review was conducted during Fall 2002. Subsequent to that review, the Committee asserted to the NSF Director that agency management controls and financial management systems taken as whole provided reasonable assurance that the objectives of FMFIA were achieved for FY 2002. It was also determined that agency assets were properly safeguarded.

During the FY 2002 management evaluation process, the MCC did not identify any material weaknesses as defined by OMB guidance. However, as in previous years, during the FMFIA assessment process senior management did identify management challenges, of which a number could be acted upon immediately, such as operational improvements and training needs. The Committee used this information to develop a list of management challenges for the agency. While these challenges are not of the magnitude to put them within the boundary conditions of the FMFIA review as material weaknesses, they are, nevertheless, important to NSF and its long-term management improvement. They are complementary to those identified by the Office of Inspector General and all are in line with the initiatives covered by the President's Management Agenda, which includes Human Capital Management; Financial Management; Expanded Electronic Government; Budget and Performance Integration; and Competitive Sourcing. Most of these management issues require long-term attention. The agency has already undertaken significant steps to address them, beginning with development of a Strategic Plan for Administration and Management and implementation of a business analysis of the agency.

The FY 2002 Independent Auditor's Report repeats two reportable conditions identified in the prior year – post-award management and IT security. During the past year, NSF has made substantial progress in both areas, implementing many of the improvements suggested by the auditors. The agency expects the have these findings resolved by the end of the next fiscal year.

The Director of NSF has determined that the National Science Foundation is in substantial compliance with FFMIA; her statement of assurance is included in the Director's letter, on page I-1.

DISCUSSION AND ANALYSIS OF THE FINANCIAL STATEMENTS

The National Science Foundation is committed to providing quality financial management to all its stakeholders. It honors that commitment by preparing annual financial statements in conformity with generally accepted accounting principles in the United States and then subjecting the statements to an independent audit to ensure their reliability in assessing the performance of NSF. The results are an opinion on the fair presentation of those financial statements. For FY 2002, NSF received an unqualified opinion that the principal financial statements were fairly stated in all material respects. The independent auditors did not report any material weaknesses. However, there are two reportable conditions related to post-award management and information security.

Understanding the Financial Statements

NSF's FY 2002 financial statements and notes are presented in the formats required for the current year by OMB 01-09, *Form and Content of Agency Financial Statements*, dated September 25, 2001. Comparative financial statements are being presented for the Balance Sheet, Statement of Net Cost, and Required Supplemental Information. The Statements of Changes in Net Position, Budgetary Resources, and Financing are being presented in new formats for the current year only, in accordance with the guidance. The Stewardship Investment Statement presents information over the past four years.

The following provides a brief description of the nature of each required financial statement and its relevance to NSF. Some significant balances or conditions are explained to help clarify their link to NSF operations.

Balance Sheet: The Balance Sheet presents the combined amounts available for use by NSF (assets) against the amounts owed (liabilities) and amounts that comprise the difference (net position).

Three line items consisting of *Fund Balance with Treasury; Property, Plant and Equipment;* and *Advances* represent 99 percent of NSF's current year assets. *Fund Balance With Treasury* is funding available through the Department of Treasury accounts from which NSF is authorized to make expenditures and pay liabilities. *Property, Plant and Equipment* comprises capitalized property located at NSF headquarters and NSF-owned property in New Zealand and Antarctica that support the United States Antarctic Program. *Advances* are funds advanced to NSF grantees, contractors, and other Government agencies.

Three line items, *Advances From Others, Accounts Payable* and *Accrued Liabilities* (*Other Liabilities)* represent 95 percent of NSF's current year liabilities. *Advances From Others* are amounts advanced to NSF from other federal entities for the administration of grants on their behalf. NSF maintains the expertise and automated systems for the administration of research grants upon which other federal entities rely to assist in the administering of their grants. *Accounts Payable* includes liabilities to NSF vendors for unreimbursed goods and services received. *Accrued Liabilities* are amounts recorded for NSF's grants and contracts for which work has been completed, although payment has not been rendered.

Comparative Discussion: Analysis of significant changes from FY 2002 to FY 2001 incorporates *Fund Balance With Treasury; Intragovernmental Accounts Receivable; Intragovernmental Advances; Accrued Liabilities (Other Liabilities);* and *Lease Liabilities*.

The increase in FY 2002 *Fund Balance with Treasury* was in correlation to the overall increase in budget authority. Our appropriated funds increased by approximately 8 percent. The FY 2002 *Intragovernmental Accounts Receivable* decrease stems from collection of receivables from Defense Department organizations. The increase in *Intragovernmental Advances* is attributable to the recordation of an advance to the Air National Guard. The decrease in *Accrued Liabilities (Other Liabilities)* was primarily due to a year-end increase in cash advances to grantees which lowered accrual calculation of payments that had not been rendered. *Lease Liabilities* are being drastically reduced over the past several years and eventually will be eliminated. The new NSF business practice is to purchase in-house equipment instead of leasing.

Statement of Net Cost: This statement presents the annual cost of operating NSF programs. The gross cost less any offsetting revenue for each NSF program is used to arrive at the net cost of specific program operations. *Intragovernmental Earned Revenues* are recognized when the related program or administrative expenses are incurred and are deducted from the full cost of the programs to arrive at the net cost of operating NSF's programs.

Approximately 96 percent of all current year NSF costs incurred were directly related to the support of NSF People, Ideas and Tools programs. Costs incurred for indirect general operation activities – e.g., as salaries, training, activities related to the advancement of NSF information systems technology, and Inspector General activities – account for slightly more than 4 percent of the total current year NSF Net Cost of Operations. NSF's commitment to administrative efficiency is evident in the relatively small portion of its total costs devoted to general operation activities.

Comparative Discussion: Analysis of changes in Net Cost from FY 2002 to FY 2001 shows about a 12 percent increase in Net Cost of Operations and 30 percent increase in earned intragovernmental revenues. This cost of operations increase primarily reflect the agency's overall 8 percent increase in Budget Authority. The earned revenue increase relates to an increase in reimbursable expenditure in the current year. Current year reimbursable expenditures increased due to prior year reimbursable activity. Reimbursable activity has been steadily growing over the past few years; the current fiscal year is the first year in which reimbursable agreements have declined. Reimbursable expenditure activity typically lags about one year behind reimbursable agreement acceptances.

Statement of Changes in Net Position: This statement presents those accounting items that caused the net position section of the Balance Sheet to change from the beginning to the end of the reporting period. The format for this statement has been revised in FY 2002 to separate into different columns, the *Cumulative Results of Operations* and *Unexpended Appropriations,* which provide a detailed analysis of how activity in these two net position components directly tied to the Balance Sheet. *Cumulative Results of Operations* is affected mainly by *Appropriations Used* and *Net Cost of Operations* with minor impact from *Donations* received and *OPM Imputed Financing Costs. Unexpended Appropriations* is affected mainly by *Appropriations Received* and *Appropriations Used* with minor impact from *Appropriation Transfers from USAID* and *Other Adjustments,* which include appropriation rescissions and cancellations. As prescribed by OMB Bulletin 01-09 new format guidance, comparative information is not being provided.

Statement of Budgetary Resources: This statement provides information on how budgetary resources were made available to NSF for the year and the status of those budgetary resources at year-end. The format for this statement has been revised in FY 2002 to show a relationship between obligations and net outlays in the bottom section. The *Net Outlays* reported on this statement reflects the actual cash disbursed for the year by Treasury for NSF obligations reduced by the amount of Trust Fund receipts, to include donations and interest, received by NSF. As prescribed by OMB Bulletin 01-09 new format guidance, comparative information is not being provided.

Statement of Financing: This statement provides a relationship between *Net Obligations* derived from NSF's budgetary accounts and the *Net Cost of Operations* reported on the Statement of Net Cost, which is derived from NSF's proprietary accounts. The statement reports the same financial relationships as in the prior year to explain the differences but is structured and grouped in a different format in FY 2002. The statement is now structured to first identify total resources classified by obligations, and then other adjustments are made to those resources based on how additional items financed those resources or contributed to net cost. The result of the relationship adjustments is a *Net Cost of Operations* total that reconciles to the Statement of Net Cost. As prescribed by OMB Bulletin 01-09 new format guidance, comparative information is not being provided.

Stewardship Investments: Stewardship investments are NSF-funded investments that yield long-term benefits to the general public. NSF investments in research and education yield quantifiable outputs shown in this statement as the number of awards made and the number of researchers and students supported in the pursuit of discoveries in science and engineering and in science and math education.

Comparative Discussion: Analysis of changes in stewardship investments from FY 2002 to FY 2001 showed consistent incremental increases in research and human capital activities in support of NSF's overall mission as reported in monetary investments and measured output/outcomes. This is also in line with overall funding increases over the past four years.

Budgetary Integrity: NSF Resources and How They Are Used

NSF is funded primarily through five Congressional appropriations that totaled $4.8 billion in FY 2002, an 8.6 percent increase from the prior year. Other FY 2002 revenue resources include $85.3 million in reimbursable authority, $14.0 million in appropriation transfers from other federal agencies, and $32.7 million in donations to support NSF activities. Additional resources were also received from the Department of Justice under the American Competitiveness and Workforce Improvement Act, enacted in 1998, which provides for a temporary increase in access to skilled personnel from abroad under the H-1B visa program. In FY 2002, NSF received $61.0 million from H-1B nonimmigrant petitioner fees, to support education activities and scholarships for financially disadvantaged students in computer science, engineering, and mathematics.

NSF's FY 2002 base obligations totaled $4.8 billion.[12] As indicated in the Statement of Net Cost, the Foundation made investments in education and fundamental research in support of its three

[12] Base obligations do not include Trust Funds, H-1B Nonimmigrant Petitioner Receipts, and upward adjustments of undelivered orders.

strategic outcome goals of People, Ideas and Tools. Administrative support for the Foundation as a whole is provided by the Salaries and Expenses appropriation. The Office of Inspector General is funded under a separate appropriation.

At the time of this report, NSF had not yet received an appropriation for FY 2003. However, ongoing priority areas of focus in FY 2003 include Biocomplexity in the Environment; Information Technology Research; Nanoscale Science and Engineering; and Mathematical Sciences. NSF will also encourage more research in the social, behavioral and economic sciences. Ongoing support is also being provided for major research instrumentation and science and technology centers. Increasing the average grant size remains an NSF long-term priority because it directly the improves the efficiency and effectiveness of the science and engineering community by allowing scientist and engineers to devote less time to preparing funding proposals. Among the ongoing large infrastructure projects being supported in FY 2003 are construction of the Atacama Large Millimeter Array, the Large Hadron Collider, the Network for Earthquake Engineering Simulation, and the South Pole Station Modernization Project.

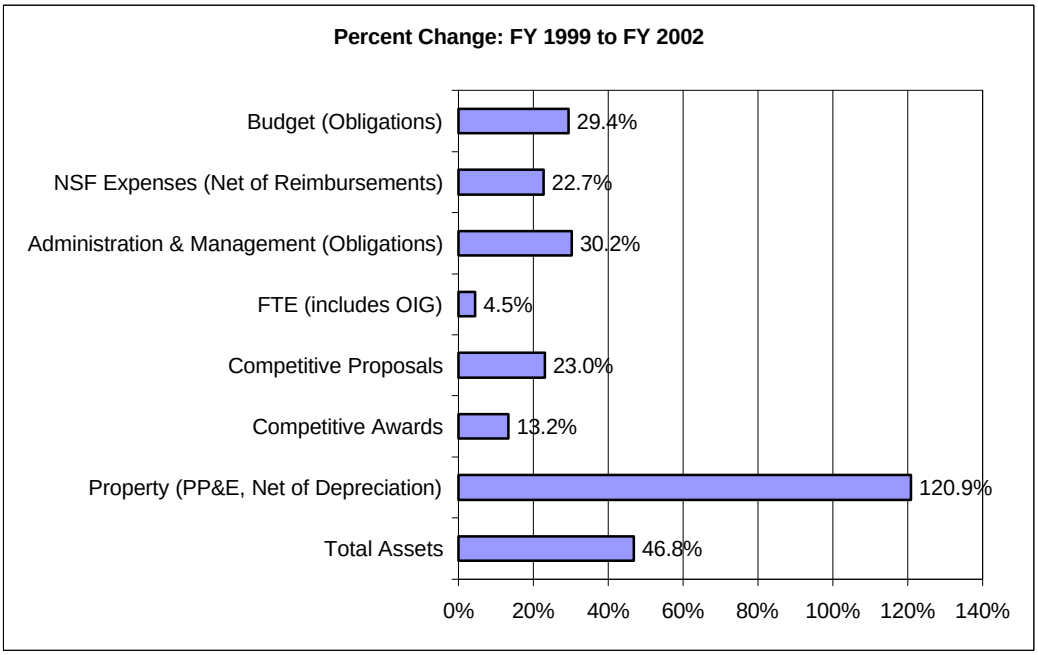
Figure 10.

Recent Trends

The following table summarizes several of NSF's key workload and financial indicators. For the period FY 1999-2002, NSF's expenses, administrative and management costs, competitive proposals and competitive awards all increased, reflecting the increase in NSF's budget. However, over this period, there has been only a small increase in the number of FTEs. NSF property increased substantially due to the Antarctic South Pole Station Modernization multi-year project that is underway. NSF's total assets increased mainly due to a larger cash balance with Treasury, which is also related to NSF's budget increase.

	FY 1999	FY 2000	FY 2001	FY 2002	% Change FY 99-02
Budget (Obligations)	$3,690.54 M	$3,948.43 M	$4,532.32 M	$4,774.06 M	29.4%
NSF Expenses (Net of Reimbursements)	$3,366.42 M	$3,484.51 M	$3,698.14 M	$4,132.27 M	22.7%
Administration & Management (Obligations)	$177.05 M	$189.32 M	$213.72 M	$230.58 M	30.2%
FTE (includes OIG)	1,189	1,200	1,220	1,242	4.5%
Competitive Proposals	28,578	29,508	31,942	35,164	23.0%
Competitive Awards	9,189	9,850	9,925	10,406	13.2%
Property (PP&E, Net of Depreciation)	$101.47 M	$167.36 M	$203.24 M	$224.14 M	120.9%
Total Assets	$4,573.00 M	$5,140.31 M	$6,001.90 M	$6,713.15 M	46.8%

Note: FY 2002 budget obligations of $4,774.06M does not include Trust Funds, H-1B Nonimmigrant Petitioner Receipts, and upward adjustments of undelivered orders.



Future Business Trends and Events

NSF is continuously evolving as we focus on new priorities and challenges. The future will require NSF to focus on demonstrating management excellence through sharpened attention to specific financial operational issues. For example, the President's Management Agenda (PMA) and other new OMB policy initiatives mandate that NSF, like other agencies, demonstrate consistent results and progress in improving financial management practices. NSF, although receiving high marks from OMB and the financial community, will need to seek continued improvements as reflected in ever evolving management and policy initiatives. NSF is also committed to improving service to its stakeholders and leveraging technology. In addition, the agency also pro-actively addresses management challenges identified through internal review and oversight. Some of the areas NSF will focus on in both the immediate future and long term are:

- *Accelerated and Interim Reporting:* The Administration has set aggressive criteria to measure agency success in improving financial performance as part of the PMA. The goal is for agencies to produce accurate, timely, and reliable financial information on a regular, recurring basis and use that information to make informed decisions. The first part of the PMA improving financial performance initiative was to produce reliable financial information more than once a year. OMB Bulletin 01-09, *Form and Content of Agency Financial Statements*, provided guidance on interim reporting requirements for financial statements. OMB Bulletin 01-09 requested semi-annual financial statements to be prepared in FY 2002 and quarterly financial statements in FY 2003 and thereafter. The second part of the initiative was to produce more timely financial information by accelerating due dates for reporting from March 31. OMB A-11 and OMB Bulletin 01-09, in conjunction with OMB memorandum "FY 2002 Financial and Performance Reporting" dated October 18, 2002, provided instruction on accelerated reporting dates. Agency Performance and Accountability Reports are due to the President, OMB, and Congress on January 31, for FY 2002 and FY 2003 and November 15, for FY 2004.

  NSF is currently implementing major changes in order to meet accelerated and interim reporting deadlines. A significant effort has been underway to re-tool and re-schedule NSF's GPRA process. NSF's Performance and Accountability Report preparation schedule is also being re-thought and revised. All sections of the report will need to be prepared on an expedited schedule utilizing information available during this earlier timeframe. NSF has realized some early successes by accomplishing the preparation of quarterly financial statements in FY 2002. NSF's financial statement strategy, to accomplish interim and accelerated reporting, is to automate the process without impeding daily operations. NSF has implemented many changes in its financial statement process to include: on-demand general ledgers, automated year-end and soft closing entries, accrual automation, and automated financial statements generated from a crosswalk in a data warehousing environment. NSF will continue to refine its new financial statement process to meet the reporting challenges ahead. A key factor in the acceleration process will be working with the Office of Inspector General and external auditors to re-engineer the audit process. NSF projects that to meet these increasing demands on reporting, additional financial and human capital resources will be required in order to maintain our standards of excellence.

- *Intragovernmental Transactions*: The General Accounting Office has classified intragovernmental transactions as a material weakness on the Government-wide audited

financial statements for the past few years. Intragovernmental transactions are the accounting of goods and services between federal agencies, which are then eliminated in a consolidation effort at the government-wide level for the Financial Statement of the United States. In September 2000, the Department of Treasury published "Federal Intragovernmental Transactions Accounting Policy Guide" which was to be a roadmap to reconcile governmental transactions for the government-wide consolidated financial statements. In accordance with these instructions agencies attempted to reconcile interagency activity. However, these reconciliation attempts revealed numerous problems. After monitoring the results of the reconciliation efforts for two years, OMB determined that a major factor in the Government's inability to reconcile these transactions is the lack of standardization in processing and recording intragovernmental activities. As a key step towards resolving this issue OMB, on October 4, 2002, issued "Business Rules for Intragovernmental Transactions" to be implemented in FY 2003. NSF is in the process of addressing its current processing practices of government transactions in relation to these new business rules.

One area in which NSF anticipates a major shift in its current process is in billing and collection of reimbursable interagency agreements with other federal agencies when NSF provides grant administration services. Traditionally NSF has worked with other agencies on an advance payment basis. Because OMB business rules now disallow processing reimbursable agreements on an advance basis, NSF must turn to a "cost-reimbursement basis" of accounting for governmental transactions. In order to accomplish this in FY 2003, NSF has made this one of the agency's highest priorities, devoting considerable effort to revising NSF policies and automated systems. The business rules are only the first part of an overall governmental plan to have an intragovernmental "Business Partner Network (BPN)." This BPN will combine standardization of business with a consolidated system that will capture and process all intragovernmental activity. The BPN practices will require significant future changes to NSF processing practices and systems as it is implemented.

- *E-Government.* NSF is one of the founders and partners of the Federal Commons initiative, a project led by the Department of Health and Human Services/National Institute of Health to develop electronic systems to support grants processes for the science and engineering research and education community. In October 2000, NSF was one of the first agencies to start conducting virtually all business interactions and transactions electronically with the grantee community through its "FastLane" grants system. NSF continues to maintain a leadership role in the Government wide E-Grants Initiative, one of 24 activities generated by the "Quicksilver" response to the President's Management Agenda. As one of the 11 partner agencies, NSF, along with the OMB and other grants making agencies and representatives of the customer segments, helped to identify the vision, goals, and objectives for the E-grants Initiative. NSF contributes both significant financial ($1.82 million for a 3-year effort) and human capital resources to this initiative. NSF senior staff is represented on the Executive Board, which is the E-Grants policy-making entity, and on the stakeholders working groups. In addition, NSF provides technical staff support in reviewing proposed statements of work for the procurement actions that will ultimately implement the E-Grants Business Case.

- *E-Payroll:* OMB has charged OPM with leading the E-payroll effort to transform the current federal payroll service environment into a more efficient system, as mandated by the President's Management Agenda. Currently, 22 executive branch payroll providers use varying customized capabilities and technology. The initiative plans to standardize and

consolidate payroll processing and reduce the number of payroll systems. NSF is expected to select a designated payroll system to convert its payroll process. This initiative will require NSF to undergo a substantial effort to transition the agency's payroll process. NSF staff will need to make a large commitment of available resources to ensure the payroll effort is seamlessly integrated into NSF's enterprise technology system architecture.

- *E-Travel*: NSF is working with GSA in FY 2003 as a vanguard pilot agency on a government-wide electronic travel management system. This project, one of the President's Management Agenda initiatives, is commonly referred to as "E-travel". The new travel management system will be a Web accessible environment. Some of the new benefits of the E-travel system are expected to be faster reimbursement, elimination of paperwork, on-line reservations, improved customer service, and internal controls. This initiative will require a commitment of NSF personnel resources throughout the pilot and implementation period.

Limitations of the Financial Statements

Responsibility for the integrity and objectivity of the financial information presented in the financial statements lies with NSF management. The accompanying financial statements are prepared to report the financial position and results of the operations of NSF, pursuant to the requirements of Chapter 31, of the United Sates Code section 3515 (b). While these statements have been prepared from the books and records of NSF in accordance with formats prescribed in Office of Management and Budget guidance on *Form and Content of Agency Financial Statements*, these financial statements are in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records. The financial statements should be read with the realization that NSF is an agency of the executive branch of the United States Government, a sovereign entity. Accordingly, unfunded liabilities reported in the statements cannot be liquidated without the enactment of an appropriation, and ongoing operations are subjected to enactment of appropriations.