

## **I. MANAGEMENT'S DISCUSSION AND ANALYSIS**





## A MESSAGE FROM THE DIRECTOR



I am pleased to have this opportunity to present the National Science Foundation's (NSF) *FY 2004 Performance and Accountability Report*. My first nine months as Acting Director have confirmed my prior impressions of the Foundation – and what I think you too will conclude from reading this report: NSF excels in managing and overseeing the \$5.65 billion in taxpayer funding entrusted to it, just as it excels in advancing the frontiers of research and education in science and engineering. The information provided in this report documents that NSF is a well-managed and effective organization with an outstanding staff dedicated to ensuring that America's future is secure and prosperous.

NSF's "business" is fundamental research and education. By their very nature, these are long-term investments. The pay-offs from these investments do not become apparent for years and often decades. Yet, we are certain of their outcome. Advances in science and engineering – such as development of the next generation of medical devices that incorporate nanoscale engineering and technology; the development of new sensors and filters that will protect buildings against chemical attack; supercomputing systems with the capability to process ten trillion calculations per second – are critical for securing the homeland, sustaining economic prosperity and advancing the quality of life for society as a whole.

FY 2004 was a busy and productive year for the agency. A record 43,817 proposals were received, and nearly 10,400 awards were made. The agency successfully achieved 27 of 30 performance goals, again exceeding its principal customer service goal of informing at least 70 percent of applicants about funding decisions within six months. These ongoing achievements were underscored by a number of noteworthy commendations, including The President's Quality Award for Management Excellence for exemplary performance in implementing the President's Management Agenda initiative to expand electronic government. Perhaps the most notable recognition was NSF's receiving the second highest ranking among all federal agencies on the list of "Best Place to Work" in the government. This was based on the first-ever OPM government-wide survey of federal employees – and it clearly reflects the level of commitment and innovation that defines both the staff and management at NSF.

Underlying the Foundation's programmatic achievements is NSF's commitment to organizational excellence and sound financial management. For the seventh consecutive year, NSF has received an unqualified opinion on its financial statements. As required by section 1116(e) of title 31 of the United States Code, I am pleased to report that the financial and performance information contained in this report is complete and reliable. I am also pleased to report that NSF is in substantial compliance with the requirements of the Federal Managers' Financial Integrity Act of 1982 (FMFIA) and the Federal Financial Management Improvement Act of 1996 (FFMIA), and that there are no material weaknesses in the agency's management controls. My assessment is

based on an independent external consulting firm's recent verification and validation review of the agency's GPRA performance results; NSF Management Controls Committee's organizational review conducted in late summer; and the Independent Auditor's Report received on November 5, 2004.

Thank you for your interest in the National Science Foundation. I invite you to visit NSF's new web site ([www.nsf.gov](http://www.nsf.gov)) to learn about the latest discoveries in fundamental science and engineering.

A handwritten signature in blue ink that reads "Arden L. Bement, Jr." with a stylized flourish at the end.

Arden L. Bement, Jr.  
Acting Director

November 8, 2004

## THE NATIONAL SCIENCE FOUNDATION

### I. AGENCY PROFILE

#### The NSF Mission

As steward of America's science and engineering enterprise, the National Science Foundation (NSF) supports advancements in science and engineering research and education to ensure that the United States maintains leadership in scientific discovery and the development of new technologies. Congress established NSF in 1950 as an independent agency of the federal government "to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense."<sup>1</sup> Over the years, NSF acquired additional responsibilities including fostering and supporting the development and use of computers and other scientific methods and technologies; providing Antarctic research, facilities and logistics support; and addressing issues of equal opportunity in science and engineering. NSF is the only federal government agency dedicated to supporting fundamental research and education in all scientific and engineering disciplines. With an annual budget of about \$5.6 billion, NSF represents only four percent of the total federal support of research and development (Figure 1) but accounts for 20 percent of federal support for basic research conducted at colleges and universities. In many fields, including computer science, mathematics and the social sciences, NSF is the primary source of federal academic funding (Figure 2).

Figure 1

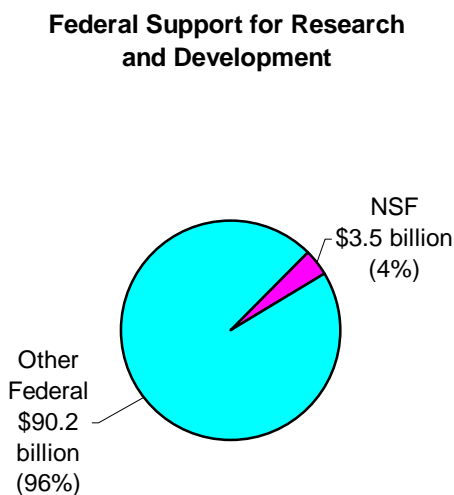
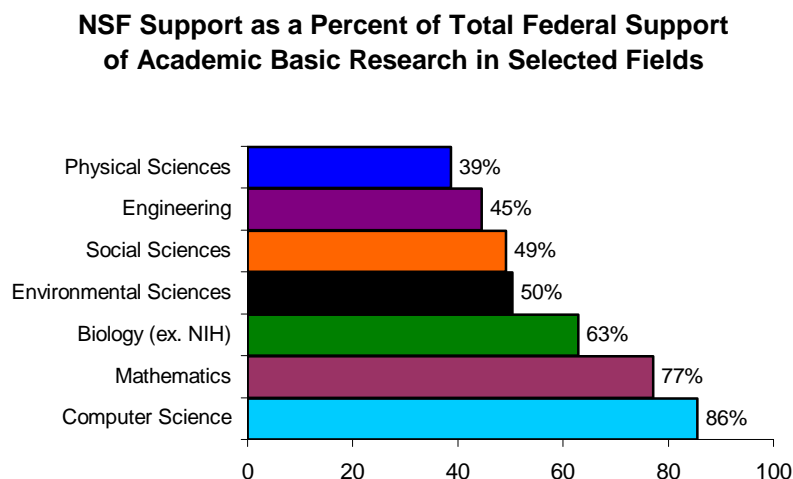


Figure 2.



Source: NSF/SRS/R&D Statistics Program, Survey of Federal Funds for Research and Development: Fiscal Years 2002-04

<sup>1</sup> The National Science Foundation Act of 1950 (P.L. 81-507).

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

Despite its small size, NSF is widely recognized as the catalyst for the advancement of basic research in America. NSF funds research that opens new frontiers of scientific inquiry and contributes to developing a competitive workforce in science and engineering. During the Foundation's more than 50 years of leadership, groundbreaking advances in science and technology have enabled the United States to become the most productive nation in history. Economic growth for the last decade has been driven by high technology industries and raised the quality of life across society. Most importantly, not since World War II have advances in science and technology been more critical for ensuring our national security and combating terrorism here at home and abroad, today and for the future. A host of advances are helping to increase safety and security: technologies to protect and monitor the food supply against intentional contamination; new sensors and filters to protect buildings against chemical attack; new techniques to detect biological infections prior to clinical symptoms; and improved security architecture and cryptography to protect critical infrastructure such as telecommunication and water supply systems. Clearly, the surest way to keep our nation prosperous and secure is to keep it at the forefront of learning, discovery and innovation in science and engineering.



*NSF supports research on nano-engineered products that can neutralize chemical hazards, providing useful tools to promote security. Photo courtesy of NanoScale Materials, Inc.*

### Organizational Structure

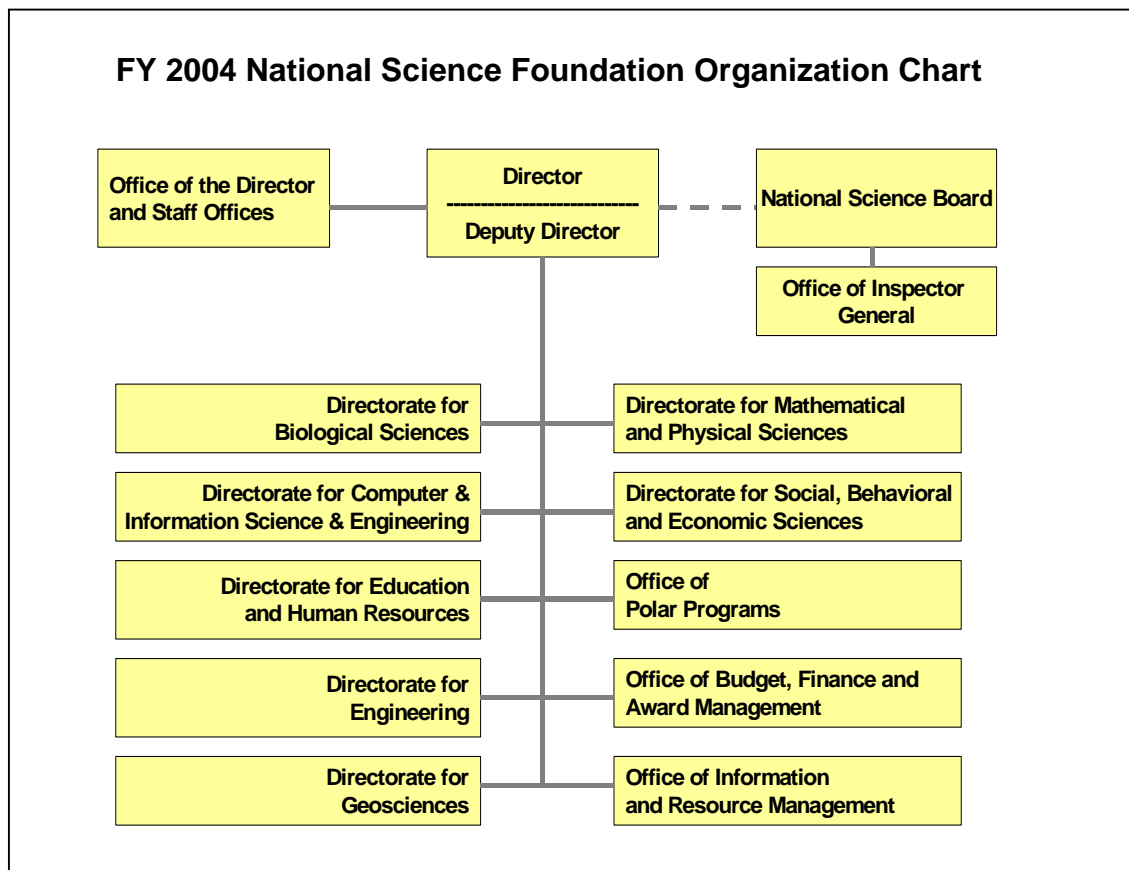
A Director who is appointed by the President and confirmed by the U.S. Senate to serve a six-year term heads NSF. A 24-member National Science Board (NSB) establishes policies and reviews programs of the Foundation. NSB members, prominent contributors to the science, mathematics, engineering and education communities, are also appointed by the President and confirmed by the Senate for a six-year term. The Board, of which the NSF director is a member *ex officio*, also serves the President and 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, technology, engineering and math (STEM) education. There are seven program directorates, an Office of Polar Programs and two business offices (Figure 3). Appendix 1 provides a description of each directorate and business office.

NSF is funded primarily by congressional appropriations and maintains a staff of about 1,300 (FTEs). NSF also employs about 200 contractors who are engaged in commercial administrative activities. Additionally, about 50,000 members of the scientific community donate time each year to review proposals and serve in a variety of advisory capacities. To complement the permanent workforce, NSF regularly recruits visiting scientists, engineers, and educators who are

at the forefront of their fields to spend one to three years with the agency.<sup>2</sup> Recruiting active researchers and educators to fill rotating assignments infuses new talent and expertise into NSF, while also providing these “rotators” with valuable information and knowledge to take back to their home institutions. The contributions made by rotators are integral to the Foundation’s mission of supporting the entire spectrum of science and engineering research and education and help ensure that NSF maintains a close association with the nation’s colleges and universities.

A recent report on NSF management by the National Academy of Public Administration (NAPA)<sup>3</sup> called NSF’s workforce “its most distinctive organizational characteristic.” The NAPA study recognized a “clear need for a mix of rotators and permanent employees.” In addition, “Rotators strengthen NSF with fresh academic based research experiences and perspectives.” The study also noted “NSF’s success in bringing very specialized scientific expertise to support its merit review process is contemporary, as the work-force is self-renewing and cost effective due to its on-demand design.”

Figure 3.

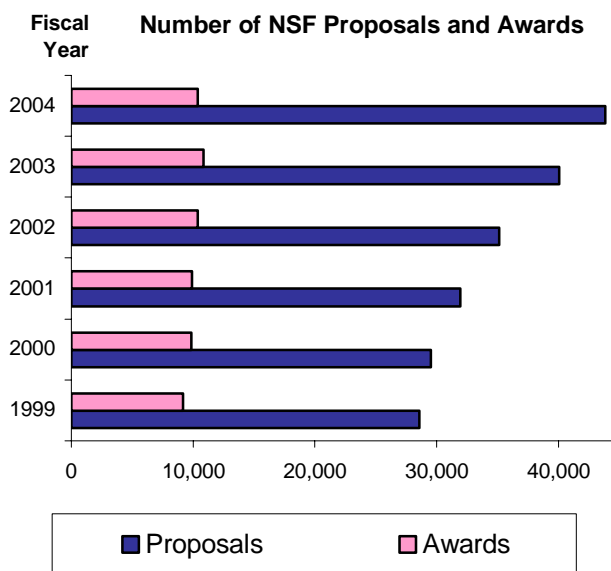


<sup>2</sup> These are appointments made under the Intergovernmental Personnel Act (IPA) or are Visiting Scientists, Engineers and Educators (VSEEs). IPAs are funded through program accounts. As of September 30, 2004, there were 140 IPAs and 33 VSEEs.

### How NSF Does Business: Merit-based Grants and the S&E Investment Portfolio

NSF carries out its mission primarily by making merit-based grants and cooperative agreements to support individual researchers and groups, in partnership with over 2,000 universities and other institutions throughout the nation. In fact, except for the South Pole Station and other Antarctic Program facilities, NSF does not conduct research or operate laboratories or facilities. In FY 2004, NSF funded 10,380 new awards from nearly 44,000 proposals submitted by the science and engineering (S&E) research and education communities (Figure 4).<sup>4</sup> It is estimated that these projects directly involve nearly 200,000 people, including senior researchers, post-doctoral associates, teachers and students ranging from kindergarten to graduate level. In FY 2004, the number of proposals submitted to NSF increased 9.2 percent; over the past five years proposals have increased 54 percent.

Figure 4.



About 90 percent of NSF funding is allocated through a merit-based competitive process that is critical to fostering the highest standards of excellence. NSF's merit review process is recognized throughout the government as the gold standard for responsible use of public funds. Reviewers focus on two primary criteria – the intellectual merit of the proposed activity and the broader impacts of the proposed activity, e.g., how well the activity promotes teaching, training, and learning and the potential benefits of the proposed activity to society. Reviewers also consider how well the proposed activity fosters the integration of research and education and attracts a diverse set of participants, particularly from underrepresented groups in science and engineering. To achieve its mission to promote the progress of science and engineering, NSF invests in three strategic areas – *People, Ideas and Tools* – each of which translates to an agency strategic

<sup>3</sup> *National Science Foundation: Governance and Management for the Future*, National Academy of Public Administration, April 2004.

<sup>4</sup> In FY 2004, NSF's total investment portfolio included about 30,000 active awards.

outcome goal.<sup>5</sup> NSF's fourth strategic goal, *Organizational Excellence*, supports the achievement of *People, Ideas and Tools*. A discussion of NSF's FY 2004 performance goals, measures and results can be found on page I-14.

### Meeting Future Challenges

NSF is often called "America's investment in the future." New discoveries and technological innovations allow the U.S. to remain competitive in the global marketplace, help sustain a high quality of life, protect the environment, counter terrorist threats and secure the homeland. Underpinning all NSF's activities is a commitment to excellence in management and stewardship of the public's investment. NSF has always set the highest standards for results-oriented management and stewardship, and it is recognized as a well-managed agency with a long record of success in leveraging its agile, motivated workforce, management processes and technological resources to enhance productivity and effectiveness.

In FY 2004, NSF received a number of notable commendations. The President's Quality Award for Management Excellence was awarded to NSF for exemplary performance in implementing the President's Management Agenda (PMA) initiative to expand electronic government.<sup>6</sup> The award recognized NSF's FastLane system, an interactive, real-time web-based system used by the nation's extensive science and engineering communities to conduct NSF business over the Internet. The House Committee on Government Reform commended NSF's significant progress on information security with an "A-" on their Federal Computer Security Report Card for FY 2003.<sup>7</sup> In a joint study by the Partnership for Public Service and The American University Institute for the Study of Public Policy Implementation, NSF ranked second out of 28 federal agencies on a list of "Best Place to Work."<sup>8</sup> The ranking was based on results from the first-ever government-wide survey of federal employees conducted by the Office of Personnel Management (OPM) in 2002.<sup>8</sup> In an independent study from IBM's Center for the Business of Government, NSF was one of two agencies rated an "A+" for outstanding public accountability reporting.<sup>9</sup> For the past three years, NSF's annual *Performance Highlights* reports have been rated among the Top 10 in a national review of annual reports by the League of American Communications Professionals and this past spring it received a Blue Pencil Award of Excellence from the National Association of Government Communicators.



*NSF supports research into new teaching approaches that make use of cutting-edge technology to improve learning. Shown here are hearing-impaired students using the Signing-Avatar® accessibility software to access science content on the Web. Photo courtesy of Dr. Judy Vesel – TERC, Cambridge, MA.*

<sup>5</sup> NSF Strategic Plan, FY 2003-2008 can be found at [http://www.nsf.gov/od/gpra/Strategic\\_Plan/FY2003-2008.pdf](http://www.nsf.gov/od/gpra/Strategic_Plan/FY2003-2008.pdf).

<sup>6</sup> Complete results of the 2003 President's Quality Award for Management Excellence can be found at <http://www.opm.gov/pqa/2003winners.asp>.

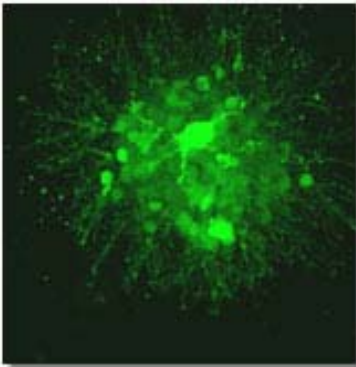
<sup>7</sup> Subcommittee on Technology, Information Policy, Intergovernmental Relation and the Census, <http://reform.house.gov/TIPRC/News/DocumentSingle.aspx?DocumentID=2025>

<sup>8</sup> The study is available at: <http://spa.american.edu/bestplacestowork/content/pdf/BPTW-Rankings.pdf>.

<sup>9</sup> *E-Reporting: Strengthening Democratic Accountability*, by Mordecai Lee (IBM Center for The Business of Government), February 2004, [http://www.businessofgovernment.org/pdfs/Lee\\_Report.pdf](http://www.businessofgovernment.org/pdfs/Lee_Report.pdf).



This tradition of success will be vital to meeting future challenges. Historically, administrative overhead has accounted for only around five percent of the agency's total budget; NSF recognizes that modest increases are likely necessary given the dramatically increased workload. In addition to the increase in the volume of the workload, complexity has also increased significantly with the rise in multi-disciplinary, collaborative projects and international activities, as well as new investments in major research facility projects and the continuing need for increased accountability and transparency. The Foundation continually strives to do more with less and work smarter by instituting more efficient and cost-effective business processes. The technological and business practices implemented in past years continue to yield cost efficiencies for the agency; as an example, printing and postage costs are about one-third of what they were five years ago because virtually all NSF publications are now available online.



*Shown here is a cluster of cells found in the developing nervous system growing in a controlled environment. NSF-supported tissue engineers at the University of Colorado at Boulder work to control how cells grow and communicate. Their techniques may be used someday in procedures to heal injuries and treat diseases, such as Parkinson's. Photo courtesy of Melissa Mahoney of Dr. Kristi Anseth's Lab.*

To better prepare and position itself to meet these challenges, NSF, in partnership with an external management consultant firm, is currently engaged in a multi-year comprehensive business analysis to examine the agency's core business processes, human capital management, and information technology architecture. The business analysis focuses on the needs and opportunities that will help guide NSF's long-term administration and management investments. In FY 2004, the business analysis team undertook and completed a number of major reviews: an external effective practices review of merit review (MR) and award management and oversight (AM&O) practices in both government and private industry; developing process improvements to NSF's MR and AM&O core processes; an agency-wide workload analysis; a plan to streamline major business processes in human resource management; a review of NSF change management processes with particular emphasis on technology implementations; a Technology Governance Framework; a long-term IT implementation plan; an initial NSF-wide Enterprise Architecture; FY 2006 IT Business Cases; and NSF knowledge management pilot projects for design and implementation.


























## II. PRESIDENT'S MANAGEMENT AGENDA

The President's Management Agenda (PMA) was launched in August 2001 as a government-wide strategy to improve the management, performance and accountability of federal agencies.<sup>10</sup> The PMA consists of management initiatives in five areas: Strategic Management of Human Capital; Competitive Sourcing; Improved Financial Performance; Expanded Electronic Government (E-Gov); and Budget and Performance Integration. The White House Office of Management and Budget (OMB) tracks the progress of agencies in meeting specific criteria under each of the PMA initiatives by issuing a quarterly scorecard. NSF is the only agency to have achieved a "green" successful rating for financial performance for four consecutive years and a "green" successful rating for E-Gov for three consecutive years (Figure 6).

In the fall of 2003, NSF updated its strategic plan to include *Organizational Excellence (OE)* as an agency strategic goal. The inclusion of *OE* as a strategic goal on par with NSF's three mission goals of *People, Ideas and Tools* recognizes that excellence in management is critical to the success of the other three mission goals and allows NSF to sharpen its focus on the agency's PMA efforts and efforts to meet the agency's management challenges.



In FY 2004, NSF successfully maintained its "green" ratings for the E-Gov and financial management initiatives and progressed from "red" to "yellow" status for the Human Capital initiative. NSF staff will continue to work closely with OMB to clarify specific management improvements, establish accountability and develop useful management tools and a set of milestones for each initiative in an effort to achieve success in the upcoming year. A more detailed discussion of the progress made on each PMA initiative in the past year follows.

Figure 5.

President's Management Agenda Scorecard					
	9/30/01	9/30/02	9/30/03	9/30/04	
	Baseline	Status	Status	Status	Progress
Strategic Management of Human Capital					
Competitive Sourcing					
Improving Financial Performance					
Expanded E-Gov't.					
Budget and Performance Integration					

Note: Green (G) represents success; yellow (Y) for mixed results; and red (R) for unsatisfactory. Ratings are issued quarterly by the Office of Management and Budget. For more information on the President's Management Agenda, see [www.results.gov/agenda/scorecard.html](http://www.results.gov/agenda/scorecard.html).

<sup>10</sup> Further information about the PMA is available at [www.whitehouse.gov/omb/budget/fy2002/mgmt.pdf](http://www.whitehouse.gov/omb/budget/fy2002/mgmt.pdf).

PMA Initiative	Progress in FY 2004
<p><b>Strategic Management of Human Capital</b></p> <p><u>As of 9/30/04</u></p> <p>Status: </p> <p>Progress: </p>	<p>NSF has developed a comprehensive Human Capital Management Plan (HCMP) that links human capital activities to the NSF Business Plan and to the Human Capital Assessment and Accountability Framework provided by the Office of Personnel Management (OPM). The HCMP also provides NSF with a framework for achieving the PMA Human Capital initiative. NSF utilized the HCMP in FY 2004 to make considerable progress towards “green” by implementing priority action items identified in the plan. Progress has included organizational restructuring in response to changes in business needs; expansion of succession strategies and executive development programs; introduction of performance appraisal plans linked to agency mission, goals and outcomes; verifiable results from efforts to reduce underrepresentation at the Foundation; integration of competitive sourcing efforts and e-Gov solutions into strategies aimed at the reduction of skill gaps in job families most closely related to the core business processes of the Foundation; and the deployment of human capital metrics to drive human capital decisions and exhibit results.</p> <p>Key portions of the Human Capital Management Plan planned to be undertaken or continued in FY 2005 include the introduction of an Administrative Functions Study; development of a comprehensive workforce planning system; acquisition and development of a Learning Management System (LMS); utilization of competency-based job families to create career pathing and career management opportunities for staff; and development of a competency-based performance management assessment system tied to mission accomplishment. Success in these human capital initiatives and others articulated in the HCMP will facilitate NSF’s efforts to make progress and hopefully obtain “green” on the PMA scorecard in FY 2005.</p>

PMA Initiative	Progress in FY 2004
<p><b>Competitive Sourcing</b></p> <p><u>As of 9/30/04</u></p> <p>Status: ●</p> <p>Progress: ●</p>	<p>NSF's strategic approach to workforce planning and deployment requires consideration of Competitive Sourcing as a tool for effecting changes suggested by the business analysis findings. Initial results from the NSF Business Analysis led to the development of a job family framework for assembling the 2004 FAIR Act Inventory. The job family framework, the 2004 Inventory, and other reports to OMB articulating the Foundation's consideration of Competitive Sourcing have been accepted in FY 2004, as has its participation in the Competitive Sourcing Civilian Agency Workgroup. In FY 2005, NSF will maintain its benchmarking activities and participation in the Workgroup, and will continue to integrate findings from the Business Analysis to refine its strategy for addressing the competitive sourcing initiative of the President's Management Agenda.</p>
<p><b>Improved Financial Performance</b></p> <p><u>As of 9/30/04</u></p> <p>Status: ●</p> <p>Progress: ●</p>	<p>NSF has received a clean audit opinion for seven consecutive years. NSF maintains financial systems that meet federal requirements and prepares clean and timely financial statements.</p> <p>Each quarter, senior management review, as a group, financial and performance information to inform management decisions. NSF's Enterprise Information System and ReportWeb tool currently provide financial and performance information that is easily accessed, distributed and stored.</p> <p>NSF was one of only eight agencies to successfully prepare its FY 2003 PAR report 45 days after the close of the fiscal year, a full year ahead of OMB requirements. NSF automatically prepares its quarterly financial statements and simultaneously produces its Treasury government-wide statements and year-end agency financial statements using an automated closing and data-warehousing environment. In February 2004, in an independent report issued by IBM's Center for the Business of Government's report, <i>E-reporting: Strengthening Democratic Accountability</i>, NSF was commended for excellence in public accountability reporting by receiving an "A+" rating.</p> <p>In May 2004, NSF implemented E-Payroll, successfully converting to DOI's Federal Personnel and Payroll System (FPPS).</p> <p>NSF has maintained a "green" status in financial performance since establishment of the PMA initiative. NSF's Five-Year Financial Management Plan (Fiscal Years 2001-2005) supports the PMA by establishing key components to accomplish our financial management strategic vision. These components are: Accountability and Stewardship of the resources provided to NSF; Top Quality Business Services to our external and internal customers (E-travel, E-payroll and</p>

PMA Initiative	Progress in FY 2004
	panel travel); Electronic Delivery Systems for operations, transactions and outreach (Fast Lane and Financial System grant financial functions); and Constructive Partnerships to pilot new practices and to provide specialized services (Grants.gov, Lines of Business).
<p><b>Expanded Electronic Government (E-Gov)</b></p> <p><u>As of 9/30/04</u></p> <p>Status: ●</p> <p>Progress: ●</p>	<p>NSF has maintained a “green” status in electronic government since FY 2002. NSF has a long and distinguished history of electronic grants management efforts; since October 2000 NSF has conducted virtually all business interactions electronically with its external grantee community. NSF has implemented e-Payroll transfer to the DOI system and its conversion has been cited as a planning model by DOI. NSF is actively engaged in supporting numerous other E-Gov initiatives such as the E-Human Resources Initiatives, E-Travel, Integrated Acquisition Environment, E-Authentication, new lines of business initiatives and is integrating existing systems into government-wide capabilities when they become available. The Foundation is a full-fledged Grants.gov Partner Agency, contributing both financial and staff support to participate in technology evaluations, technical panels, steering committees, stakeholder committees, and working groups and has led the Grants Line of Business initiative. NSF is continuing to evolve FastLane, the agency’s interactive real-time system that is used to conduct business with the grantee community over the Internet, to seamlessly integrate with Grants.gov. In addition, a new Electronic Jacket System (E-Jacket) is being developed and released in phases as a path-finding effort for NSF’s comprehensive proposal review and grants management functions. The implementation of E-Jacket is improving business processes while significantly reducing paper documents by maintaining proposal and award records electronically and allowing the electronic signing of official documents by staff. In addition, NSF has an Enterprise Architecture that is consistent with the Federal Enterprise Architecture, and used it along with the Business Analysis results to develop a phased IT plan consistent with government-wide E-Gov efforts.</p> <p>Security of information technology (IT) systems is a management issue of the highest priority for NSF. In FY 2004, the Foundation made significant investments to enhance an already strong security program and produced remarkable results. At the close of FY 2004, NSF had completed all 52 program and system milestones on the FY 2004 Plan of Actions and Milestones (POAM).</p> <p>Equally important, 19 of 21 have current certification and accreditation status (C&amp;A); C&amp;A for two systems added to the Foundation’s inventory in FY 2004 was begun in the fourth quarter and is expected to be completed by January 2005. NSF Security awareness training, now in its third year, was taken by over 96% percent of NSF staff and contractors. Based on an audit and review of the Foundation’s IT security program, the NSF Office of Inspector General (OIG) closed</p>

PMA Initiative	Progress in FY 2004
	<p>three prior year findings, reissued two findings as “other weaknesses” and one as a “reportable condition,” and issued two new findings categorized as “other weaknesses.”</p> <p>All of NSF’s investments in information technology are guided by and consistent with the Federal Enterprise Architecture. NSF continues to ensure that its five-year IT Plan is consistent with government-wide E-Gov efforts. NSF will continue to focus its efforts on planning and integrating next generation technology initiatives with E-Gov initiatives and implementation of initiatives to address security needs. Recognizing there are always risks that must be appropriately assessed and mitigated, NSF’s overall security program and posture continues to be positive and reflects a commitment to continuous and sustained improvement to what will remain complex and challenging issues in the years ahead.</p>
<p><b>Budget and Performance Integration</b></p> <p><u>As of 9/30/04</u></p> <p>Status: </p> <p>Progress: </p>	<p>In FY 2004, NSF aligned planning, budgeting, performance and cost to establish an integrated process in which strategic planning drives budgetary decisions and tracks accountability for performance and identifies full cost. NSF’s new Strategic Plan, adopted in the fall of 2003, established a new budget and GPRA* framework that aligned all NSF’s programmatic activities to one of ten Investment Categories and align to NSF’s strategic outcome goals. This mapping of all program activities to performance goals also allows NSF to identify budgetary costs and track obligations and expenditures to determine full program cost. The Financial Accounting System is currently being updated to enable systematic tracking of program expenditures and the Statement of Net Cost has been revised to reflect NSF’s new program structure.</p> <p>Four NSF Investment Categories underwent OMB PART* review in the summer of 2003; all received an “Effective” rating. All PART reviews have been completed for FY 2006 and efficiency measures that apply to all programs have been established. NSF’s FY 2005 performance budget incorporated performance information, including PART ratings, into the formulation process to inform budgetary planning and resource allocation decisions.</p> <p>NSF senior management meets at least every quarter to review financial and performance information. In addition, all NSF employee performance appraisal plans are now linked to agency mission, goals and outcomes.</p> <p><i>* A more detailed discussion of The Government Performance and Results Act of 1993 (GPRA) and the Program Assessment Rating Tool (PART) can be found on page I-14.</i></p>

### III. PERFORMANCE HIGHLIGHTS

This discussion features highlights of the NSF's FY 2004 GPRA<sup>11</sup> and PART<sup>12</sup> results. Pertinent background information and a brief discussion of several relevant GPRA performance issues are included to help put NSF's performance results in proper context for those who may not be familiar with the GPRA process or with evaluating research and development programs. For a comprehensive discussion of each of NSF's FY 2004 GPRA performance goals see Chapter II, "Detailed Performance Information."

#### NSF Assessment Activities, PART Results and the R&D Criteria

NSF has a long-standing practice of conducting a wide range of assessment activities. Committees of Visitors (COVs) and Advisory Committees (AC) reporting on Directorates/Offices are two external reviews that the Foundation has used for over 20 years to conduct independent assessments of the quality and integrity of NSF's investments. On broader issues, NSF often uses external third parties such as the National Academies of Sciences for outside review. NSF may also convene external panels of experts for special studies. A schedule of NSF's program evaluations can be found in Appendix 5 and a list of the external evaluations completed in FY 2004 can be found in Appendix 6.

In FY 1999, NSF began reporting on the agency's annual GPRA performance goals. In FY 2002, NSF began using the Program Assessment Rating Tool (PART), a systematic method for assessing program performance developed by the White House Office of Management and Budget (OMB). During the summer of 2003, four NSF programs underwent PART evaluation: Facilities, Individuals, Informational Technology Research and Nanoscale Science and Engineering. All received the highest possible overall rating of "Effective."<sup>13</sup> Of the 399 federal programs that underwent OMB evaluation in the summer of 2003, only 11 percent were rated "Effective." Others were rated as "Moderately Effective," "Adequate" or "Ineffective," and about 40 percent of programs across the government were unable to demonstrate results.

In addition to the five cross-government PMA initiatives, OMB and the White House Office of Science and Technology Policy (OSTP) also established a research and development (R&D) initiative focused on improving the management and effectiveness of federal R&D programs. Federal agency R&D programs are assessed to meet three primary criteria: Relevance, Quality and Performance.<sup>14</sup> Aspects of the criteria were modeled after existing effective NSF practices; NSF has received feedback that it is doing well with respect to the criteria. NSF senior managers meet at least quarterly to plan, coordinate, assess and redirect the agency's R&D activities as appropriate, based on factors including the R&D criteria, program priorities, potential benefits

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<sup>11</sup> For more information about the Government Performance and Results Act of 1993 (GPRA), see [http://www.whitehouse.gov/omb/legislative/testimony/cjohnson/030918\\_cjohnson.html](http://www.whitehouse.gov/omb/legislative/testimony/cjohnson/030918_cjohnson.html).

<sup>12</sup> For more information about OMB's Program Assessment Rating Tool (PART) see [http://www.whitehouse.gov/omb/part/2004\\_program\\_eval.pdf](http://www.whitehouse.gov/omb/part/2004_program_eval.pdf).

<sup>13</sup> NSF is not reporting the results of the programs that underwent PART assessment in 2002 for the FY 2004 Budget because they are no longer relevant in the updated strategic plan framework. Thus we are reporting results from the PART assessments completed in the summer of 2003. For more detailed information on NSF's FY 2003 PART results see <http://www.whitehouse.gov/omb/budget/fy2005/pma/nsf.pdf>.

<sup>14</sup> <http://www.ostp.gov/html/ombguidmemo.pdf>



and past performance of agency R&D programs. NSF has demonstrated the high quality of its programs in its PART reviews, and in the recently completed FY 2006 OMB Budget Request, NSF placed special emphasis on the R&D investment criteria, integrating specific information on each R&D criteria throughout the Budget.

### **A New Strategic Plan and the Integration of GPRA and PART**

In the fall of 2003, as required by GPRA, NSF updated its Strategic Plan<sup>15</sup> and added a new strategic outcome goal, *Organizational Excellence (OE)*. OE puts excellence in NSF's administration and management activities on par with the Foundation's mission-oriented goals of *People, Ideas and Tools*, recognizing its critical role in the achievement of all NSF goals. As noted in NSF's Strategic Plan, the OE goal focuses on the strategies and resources that enable NSF to be a leader among federal agencies in implementing state-of-the art business and management practices. Moreover, NSF's commitment to OE furthers its efforts under the President's Management Agenda as well as enables the agency to focus more sharply on efforts to meet its management challenges.

Also, for FY 2004, NSF worked with OMB to better integrate its GPRA and PART performance measures.<sup>16</sup> NSF's FY 2004 performance goals include four overarching strategic outcome goals – *People, Ideas, Tools and Organizational Excellence (PITO)* – and 26 other performance goals and PART programmatic measures, all of which align with the overarching strategic PITO framework defined in NSF's new strategic plan. (See Figure 6 on page I-23.)

### **Some NSF GPRA Issues**

GPRA implementation has been a particular challenge for agencies like NSF whose mission involves long-term investments in research and education programs. This is primarily due to: (1) the difficulty of linking outcomes to annual investments and the agency's annual budget; it is not unusual for the benefits of research to appear years or even decades after the initial investment, and (2) the fact that assessing the impact of advances in science and engineering is inherently retrospective and is best performed through the qualitative judgment of experts. These issues required NSF to develop an alternative GPRA reporting format that has been approved by OMB. This alternative reporting format uses an external expert review panel to assess program results and achievement with respect to research outcome goals on a qualitative rather than a quantitative basis. The use of external expert panels to review results and outcomes is a common, long-standing practice used by the academic research and education community.

In FY 2002, in response to the Administration's mandate to accelerate the reporting of agency performance results, NSF established an Advisory Committee for GPRA Performance Assessment (AC/GPA). This Committee includes experts from various disciplines and fields of science, engineering, mathematics and education. In June 2004, the AC/GPA convened to assess

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<sup>15</sup> NSF Strategic Plan, FY 2003-2008 is available at [http://www.nsf.gov/od/gpra/Strategic\\_Plan/FY2003-2008.pdf](http://www.nsf.gov/od/gpra/Strategic_Plan/FY2003-2008.pdf)

<sup>16</sup> This integration is reflected in NSF's FY 2005 performance budget, which was prepared February 2004. NSF no longer prepares a separate annual performance plan; both the FY 2004 and FY 2005 performance goals appear in NSF's FY 2005 Budget Request to Congress (<http://www.nsf.gov/bfa/bud/fy2005/toc.htm>).



results for the strategic outcome goals of *People, Ideas, Tools* and *Organizational Excellence*.<sup>17</sup> However, as the reporting and determination of results for performance goals are inherently governmental functions, NSF makes the final determination on achievement using the Advisory Committee as one critical input.

Collections of outstanding accomplishments from awards obtained from NSF Program Officers, together with COV reports, award abstracts and investigator project reports formed the basis for determining, through the recommendations of the external AC/GPA, whether NSF demonstrated significant achievement with respect to its FY 2004 *People, Ideas and Tools* strategic outcome goals. In prior years, the Committee, which includes experts in statistics and performance assessment, had thorough discussions about the sampling technique used for the “nuggets” (notable outcomes). The approach to nugget collection is a type of non-probabilistic sampling, commonly referred to as “judgmental” or “purposeful” sampling, that is best designed to identify notable examples and outcomes resulting from NSF’s investments. It is the aggregate of collections of notable examples and outcomes that can, by themselves, demonstrate significant agency-wide achievement in the strategic outcome goals.

It is possible, although unlikely, that the Committee could incorrectly conclude that NSF failed to show significant achievement, due to the limited set, when it actually achieved the goals. That is, the Committee could conclude that NSF did not show sufficient achievements based upon over 800 distinct accomplishments of results while, if time permitted, reviewing hundreds or thousands more would add enough to show sufficient total results. The inverse, however, could not occur. If a subset were sufficient to show significant achievement, then adding more results would not change that outcome. Therefore, the limitation imposed by using a “judgmental” sample is that there is a possibility, though likely small given hundreds of examples, that significant achievement would not be sufficiently demonstrated while a larger sample would show otherwise.<sup>18</sup>

The Committee had access to over 50,000 project reports and three years of COV reports (COV reviews are done on a three year cycle) in addition to nuggets, ensuring coverage of the NSF portfolio. While it is correct that some COV reports do not address all of the strategic outcome goals, the volume of information covering the NSF portfolio from these various sources vastly overshadows these minor gaps. The work of COVs is well known to the Committee membership as most currently and formerly served as COV members. Moreover, the process of assessment by NSF’s external advisory committee is itself assessed by an independent, external management consulting firm. See data verification and validation discussion on page I-21.


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<sup>17</sup> The AC/GPA assessed results for indicators associated with the strategic outcome goals of *People, Ideas, Tools* and with the merit review indicator for the *Organizational Excellence* goal. The Advisory Committee on Business and Operations assessed the other three indicators for OE.

<sup>18</sup> Regarding sampling, the Committee noted in their FY 2003 report that “The Committee believes that a purposeful sampling technique, i.e., one that relies on the judgment of internal experts (NSF program staff) combined with review by an external group of experts, is appropriate, reasonable and useful for GPRA reporting purposes. Such a technique will provide adequate data on which to base conclusions about performance relative to NSF’s outcome goals.”



## Select Performance Goals and Results

The following table presents the results of NSF's four strategic outcome goals and three management efficiency goals. For a more detailed discussion of all of the Foundation's FY 2004 GPRA goals, see Chapter II. Examples that illustrate the impact and success of NSF's investments in *People, Ideas, Tools* and *Organizational Excellence* are also included in Chapter II. Overall, in FY 2004, NSF achieved all four of its strategic outcome goals and 23 of 26 other management and programmatic measures. NSF's annual success rate in achieving its goals have ranged from 64 percent in FY 2000 to 90 percent in 2004.

Strategic Outcome	FY 2004 Performance Goal/Indicators	Results
<p><b>PEOPLE:</b> A diverse, competitive, and globally engaged U.S. workforce of scientists, engineers, technologist and well-prepared citizens</p>	<p><b><u>Strategic Outcome Goal 1:</u></b> NSF will demonstrate significant achievement in the majority of the following indicators:</p> <ul style="list-style-type: none"> <li>-Promote greater diversity in the science and engineering workforce through increased participation of underrepresented groups and institutions in all NSF programs and activities.</li> <li>-Support programs that attract and prepare U.S. students to be highly qualified members of the global S&amp;E workforce, including providing opportunities for international study, collaborations and partnerships.</li> <li>-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.</li> <li>-Promote public understanding and appreciation of science, technology, engineering, and mathematics, and build bridges between formal and informal science education.</li> </ul> <p>Support innovative research on learning, teaching and mentoring that provides a scientific basis for improving science, technology, engineering and mathematics education at all levels.</p>	<p>FY 2001: Successful FY 2002: Successful FY 2003: Successful FY 2004: Successful</p> <p style="text-align: center;"></p> <p>External expert assessment determined that the Foundation has demonstrated significant achievement in each of the performance indicators associated with this goal.</p>

Strategic Outcome	FY 2004 Performance Goal/Indicators	Results
<p><b>IDEAS:</b></p> <p>Discovery across the frontier of science and engineering, connected to learning, innovation and service to society</p>	<p><u><b>Strategic Outcome Goal 2:</b></u></p> <p>NSF will demonstrate significant achievement in the majority of the following indicators:</p> <ul style="list-style-type: none"> <li>-Enable people who work at the forefront of discovery to make important and significant contributions to science and engineering knowledge.</li> <li>-Encourage collaborative research and education efforts – across organizations, disciplines, sectors and international boundaries.</li> <li>-Foster connections between discoveries and their use in the service of society.</li> <li>-Increase opportunities for underrepresented individuals and institutions to conduct high quality, competitive research and education activities.</li> <li>-Provide leadership in identifying and developing new research and education opportunities within and across science and engineering fields.</li> <li>-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.</li> </ul>	<p>FY 2001: Successful  FY 2002: Successful  FY 2003: Successful  FY 2004: Successful</p> <p style="text-align: center;">●</p> <p>External expert assessment determined that the Foundation has demonstrated significant achievement in each of the performance indicators associated with this goal.</p>
<p><b>TOOLS:</b></p> <p>Broadly accessible, state-of-the-art science and engineering facilities, tools and other infrastructure that enable discovery, learning and innovation.</p>	<p><u><b>Strategic Outcome Goal 3:</b></u></p> <p>NSF will demonstrate significant achievement for the majority of the following performance indicators related to the Tools outcome goal:</p> <ul style="list-style-type: none"> <li>-Expand opportunities for U.S. researchers, educators, and students at all levels to access state-of-the-art S&amp;E facilities, tools, databases, and other infrastructure.</li> <li>-Provide leadership in the development, construction, and operation of major, next-generation facilities and other large research and education platforms.</li> <li>-Develop and deploy an advanced cyberinfrastructure to enable all fields of science and engineering to fully utilize state-of-the-art computation.</li> <li>-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.</li> <li>-Support research that advances instrument technology and leads to the development of next-generation research and education tools.</li> </ul>	<p>FY 2001: Successful  FY 2002: Successful  FY 2003: Successful  FY 2004: Successful</p> <p style="text-align: center;">●</p> <p>External expert assessment determined that the Foundation has demonstrated significant achievement in each of the performance indicators associated with this goal.</p>

Strategic Outcome	FY 2004 Performance Goal/Indicators	Results																		
<p><b>ORGANIZATIONAL EXCELLENCE:</b></p> <p>An agile, innovative organization that fulfills its mission through leadership in state-of-the-art business practices.</p>	<p><u><b>Strategic Outcome Goal 4 (new goal):</b></u></p> <p>NSF will demonstrate significant achievement for the majority of the following performance indicators related to the <i>Organizational Excellence</i> outcome goal:</p> <ul style="list-style-type: none"> <li>- Operate a credible, efficient merit review system.</li> <li>- Utilize and sustain broad access to new and emerging technologies for business application.</li> <li>- Develop a diverse, capable, motivated staff that operates with efficiency and integrity.</li> <li>- 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.</li> </ul>	<p>FY 2004: Successful</p> <p style="text-align: center;">●</p> <p>External expert assessment determined that NSF has demonstrated significant achievement in each of the performance indicators associated with this goal.</p>																		
<b>Other Performance Goals</b>																				
Performance Area	Performance Goal/Measure	Result																		
<p><b>Award Size</b></p>	<p>NSF will increase the average annualized award size for research grants to \$139,000.</p> <table border="0" style="width: 100%;"> <tr> <td style="padding-left: 40px;">FY 2000 Result</td> <td style="text-align: right;">\$106,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2001 Goal</td> <td style="text-align: right;">\$110,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2001 Result</td> <td style="text-align: right;">\$114,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2002 Goal</td> <td style="text-align: right;">\$113,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2002 Result</td> <td style="text-align: right;">\$116,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2003 Goal</td> <td style="text-align: right;">\$125,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2003 Result</td> <td style="text-align: right;">\$136,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2004 Goal</td> <td style="text-align: right;">\$139,000</td> </tr> <tr> <td style="padding-left: 40px;">FY 2004 Result</td> <td style="text-align: right;">\$140,000</td> </tr> </table>	FY 2000 Result	\$106,000	FY 2001 Goal	\$110,000	FY 2001 Result	\$114,000	FY 2002 Goal	\$113,000	FY 2002 Result	\$116,000	FY 2003 Goal	\$125,000	FY 2003 Result	\$136,000	FY 2004 Goal	\$139,000	FY 2004 Result	\$140,000	<p style="text-align: center;">●</p> <p>FY 2004: Successful</p>
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FY 2004 Result	\$140,000																			

Performance Area	Performance Goal/Measure	Result																				
<p><b>Award Duration</b></p>	<p>The average duration of awards for research grants will be 3.0 years.</p> <table border="0"> <tr> <td>FY 2000 Result</td> <td>2.8 years</td> </tr> <tr> <td>FY 2001 Goal</td> <td>3.0 years</td> </tr> <tr> <td>FY 2001 Result</td> <td>2.9 years</td> </tr> <tr> <td>FY 2002 Goal</td> <td>3.0 years</td> </tr> <tr> <td>FY 2002 Result</td> <td>2.9 years</td> </tr> <tr> <td>FY 2003 Goal</td> <td>3.0 years</td> </tr> <tr> <td>FY 2003 Result</td> <td>2.9 years</td> </tr> <tr> <td>FY 2004 Goal</td> <td>3.0 years</td> </tr> <tr> <td>FY 2004 Result</td> <td>2.96 years</td> </tr> </table>	FY 2000 Result	2.8 years	FY 2001 Goal	3.0 years	FY 2001 Result	2.9 years	FY 2002 Goal	3.0 years	FY 2002 Result	2.9 years	FY 2003 Goal	3.0 years	FY 2003 Result	2.9 years	FY 2004 Goal	3.0 years	FY 2004 Result	2.96 years	<p style="text-align: center;"></p> <p>FY 2004: Not Successful</p> <p>Progress on this goal is budget dependent. Program Directors must balance competing requirements: increasing award size, increasing duration of awards, and success rates. NSF will continue to focus in FY 2005 on increasing award size and duration. However, due to the decreasing success rate for NSF investigators, this goal is being re-evaluated.</p>		
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<p><b>Customer Service:</b> <b>Time to Decision</b></p>	<p>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.</p> <table border="0"> <tr> <td>FY 2000 Goal</td> <td>70%</td> </tr> <tr> <td>FY 2000 Result</td> <td>54%</td> </tr> <tr> <td>FY 2001 Goal</td> <td>70%</td> </tr> <tr> <td>FY 2001 Result</td> <td>62%</td> </tr> <tr> <td>FY 2002 Goal</td> <td>70%</td> </tr> <tr> <td>FY 2002 Result</td> <td>74%</td> </tr> <tr> <td>FY 2003 Goal</td> <td>70%</td> </tr> <tr> <td>FY 2003 Result</td> <td>77%</td> </tr> <tr> <td>FY 2004 Goal</td> <td>70%</td> </tr> <tr> <td>FY 2004 Result</td> <td>77%</td> </tr> </table>	FY 2000 Goal	70%	FY 2000 Result	54%	FY 2001 Goal	70%	FY 2001 Result	62%	FY 2002 Goal	70%	FY 2002 Result	74%	FY 2003 Goal	70%	FY 2003 Result	77%	FY 2004 Goal	70%	FY 2004 Result	77%	<p style="text-align: center;"></p> <p>FY 2004: Successful</p>
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## Data Verification and Validation

For the fifth consecutive year, NSF has engaged an independent, external consulting firm, IBM Business Consulting Services (IBMBCS), to verify and validate the reported results of the agency's annual performance goals. The assessment is based on criteria established by the General Accounting Office's *Guide to Assessing Agency Annual Performance Plans (GAO/GCD-10.1.20)*. IBMBCS assessed the accuracy of NSF's performance data and reported outcomes of performance goals and indicators; described the reliability of the processes used to collect, process, maintain and report data; reviewed system controls to confirm that quality input resulted 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 an updated review. IBMBCS' final report included the following statement:

*Once again, we commend NSF for undertaking this fifth-year effort to verify the reliability of its processes to collect, process, maintain, and report data for its performance goals and the validity of its reported results. NSF reaffirmed its commitment to reporting accurate and reliable performance results by incorporating its PART process into our verification and validation review for the first time this year. The relative infancy and unique nature of the PART process presented some new challenges to the Foundation in collecting data and developing processes in a relatively short period of time for our review. To address these challenges, NSF staff worked and collaborated extensively to provide us with the necessary data, documentation and access to staff and systems to complete our review. We commend the Foundation for this effort.*

*Based on our third quarter and fiscal year-end review, we were able to verify the reliability of the processes and validate the accuracy of all 30 GPRA and PART goals under review. Overall, we conclude that NSF has made a concerted effort to report its performance results accurately and has effective systems, policies and procedures to promote data quality. We verify that NSF relies on sound business policies, internal controls, and manual checks of system queries to report performance. Finally, NSF maintains adequate documentation of its processes and data to allow for an effective verification and validation review.<sup>19</sup>*

The IBMBCS team also reviewed the work of the AC/GPA and verified that the Committee's process of evaluating NSF's achievements against its strategic outcome goals involved a robust collection of performance information. IBMBCS also verified that this performance information was reviewed qualitatively by a highly qualified and diverse committee of science experts with sufficient documentation and transparency to assure accountability and confidence in the AC/GPA's assessments. IBMBCS' final verification and validation review report included the following statement:

*We did not directly evaluate the AC/GPA's conclusions, as the Committee's review is inherently subjective and independent. However, we did assess the*

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<sup>19</sup> NSF GPRA and PART Performance Measurement Validation and Verification Report on FY 2004 Results, IBM Business Consulting Services, October 2004.

*process NSF used to provide information and guidance to the Committee; the quality of the performance information; the Committee's qualifications and independence; and how the Committee performed its work. Based on our observations, we verify that this process is appropriate and leads to a proper determination of results by the Committee. In summary, the Foundation's processes related to its strategic outcome goals are sufficiently robust and reliable to yield a valid conclusion by the AC/GPA. A number of challenges and areas for improvement still exist for NSF as it seeks to improve this process in future years. However, NSF continues to position itself to address these challenges and remain at the forefront of evaluating federally funded scientific research and development programs.<sup>20</sup>*

### **The Linkage Between Budget, Performance and Costs**

Beginning with FY 2004, NSF's updated strategic plan established a new programmatic framework for the budget and GPRA. As shown in Figure 6, every agency programmatic activity is now assigned to an "Investment Category" that aligns with a strategic outcome goal.<sup>21</sup> NSF's new programmatic framework required updating the FY 2004 Statement of Net Cost to include the investment categories that align to *People, Ideas and Tools*. NSF's new *Organizational Excellence (OE)* strategic goal focuses on NSF's administrative and management activities so its portfolio supports operational costs such as staff compensation and benefits, administrative travel, training, rent, IT business systems, the Office of the Inspector General and the National Science Board. In the Statement of Net Cost, these *OE* operational costs have been allocated to the ten investment categories aligned to *People, Ideas and Tools*, in order to identify the full cost of NSF's primary programs. Figure 8 (on page I-24) shows the FY 2004 obligations for *People, Ideas and Tools*, also with *OE* allocated to the ten investment categories.

NSF's new programmatic framework allows for a complete alignment and integration of NSF's performance goals, budgetary resources, obligations and expenditures. NSF's strategic plan drives budget allocation decisions that are clearly identified with performance goals and outcomes; obligations and expenditures are tracked so that the full costing of programs can be identified. Figure 6 is a schematic presentation of NSF's new programmatic framework.

NSF's budget is funded through six congressional appropriations: Research and Related Activities (R&RA); Major Research Equipment and Facilities Construction (MREFC); Education and Human Resources (EHR); and Salaries and Expenses (S&E).<sup>22</sup> The National Science Board and the Office of the Inspector General are each funded under its own separate appropriation. Approximately 95 percent of NSF's budget goes directly to the investments it makes in support of its mission-related strategic outcome goals of *People, Ideas and Tools*. The remaining five percent of the budget funds *Organizational Excellence*. As shown in Figure 7, NSF's strategic outcome goals were supported at the following levels: \$1.15 billion for *People*, \$2.82 billion for *Ideas* and \$1.40 billion for *Tools* and \$0.28 billion for *Organizational Excellence*.

<sup>20</sup> *NSF GPRA and PART Performance Measurement Validation and Verification Report on FY 2004 Results*, IBM Business Consulting Services, October 2004.

<sup>21</sup> The Investment Categories associated with *People, Ideas and Tools* are also NSF's PART programs.

<sup>22</sup> 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.

Figure 6.

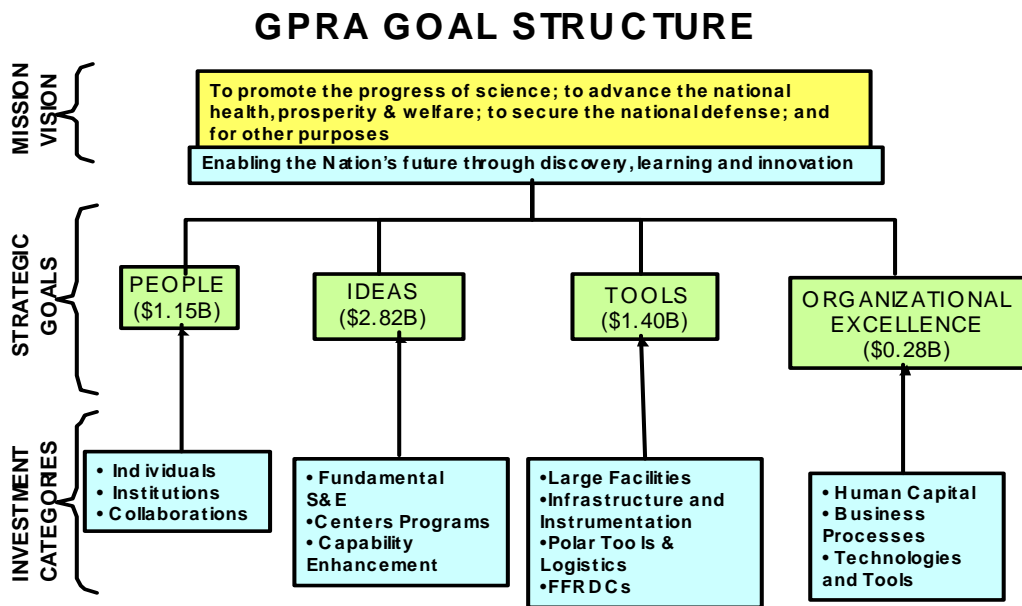
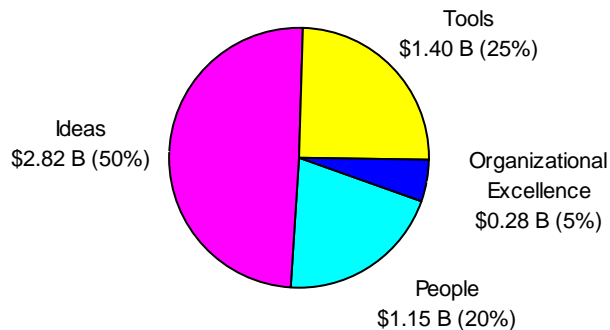


Figure 7.

### NSF FY 2004 Budget Obligations \$5.65 Billion





The table below (Figure 8) shows how funds from each NSF appropriation were obligated by strategic goal and investment category. However, this view of how NSF deploys its budget does not reflect the fact that NSF investments often serve multiple purposes. For example, research projects in programs categorized under Ideas commonly provide funds that involve graduate students. They contribute, therefore, to the *People* strategic outcome goal. These 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. The synergy attained across the four strategic goals attests to the real strength of the NSF process.

Figure 8.

**FY 2004 Support of NSF's Strategic Outcome Goals and Investment Categories**

(Obligations in Millions of Dollars)

	R&RA*	EHR*	MREFC*	S&E*	NSB*	OIG*	TOTAL
<b>PEOPLE</b>							
Individuals	319.7	204.8	0.0	21.2	0.2	0.9	546.9
Institutions	41.4	142.2	0.0	7.4	0.1	0.3	191.4
Collaborations	42.9	413.7	0.0	18.4	0.2	0.8	476.0
<b>IDEAS</b>							
Fundamental Science & Engineering	2,166.6	50.9	0.0	89.5	0.9	3.9	2,311.8
Centers	365.9	0.0	0.0	14.8	0.2	0.6	381.5
Capability Enhancements	145.9	114.4	0.0	10.5	0.1	0.5	271.4
<b>TOOLS</b>							
Large Facilities	406.0	0.0	162.9	23.8	0.2	1.0	594.0
Infrastructure & Instrumentation	349.4	18.0	0.0	14.8	0.2	0.6	383.0
Polar Tools, Facilities & Logistics	258.2	0.0	21.0	10.4	0.1	0.5	290.2
FFRDC's	197.2	0.0	0.0	8.0	0.1	0.3	205.6
<b>TOTAL</b>	4,293.3	944.1	184.0	218.9	2.2	9.5	5,652.0 **

Notes:

\* R&RA=Research & Related Activities; EHR=Education and Human Resources; MREFC=Major Research Equipment and Facilities Construction; S&E=Salaries and Expenses; OIG=Office of Inspector General; and NSB=National Science Board.

\*\* Base obligation of \$5,652.0M plus Trust Funds (\$29.7M), H1-B Nonimmigrant Petitioner Receipts (\$57.3M), Reimbursable Authority (\$111.6M), and appropriation with expired obligation authority in FY 2004 (\$20.1M) equals total obligations incurred as shown on the Statement of Budgetary Resources (\$5,870.7M).

Totals may not add due to rounding.

#### **IV. MANAGEMENT INTEGRITY: CONTROLS, COMPLIANCE AND CHALLENGES**

The Federal Managers' Financial Integrity Act of 1982 (FMFIA) requires annual review of an agency's internal accounting and administrative controls. The results of NSF's assessment are reported here in the agency's *FY 2004 Performance and Accountability Report*, consistent with the provisions of the Reports Consolidation Act of 2000.

The National Science Foundation's Management Controls Committee (MCC), chaired by the Chief Financial Officer, is responsible for coordinating the annual review and reporting process. NSF Assistant Directors and Staff Office Directors provide annual statements on FMFIA reviews and the status of management controls within their organizations. These statements serve as the primary basis for the Foundation's assurance that management controls are adequate and effective. Together, these statements cover programmatic, administrative, IT and financial functions, including assessments from the Chief Financial Officer and the Chief Information Officer. The statements are consolidated and reviewed by MCC and, in turn, by the agency Senior Management Integration Group (SMIG). The individual organizational reviews, together with the consolidated summary assessments, are reported to the Acting Director via the Deputy Director (and Chief Operating Officer), who chairs SMIG.

Based on the organizational reviews conducted June-August 2004, and the consideration by MCC and SMIG, it was reported to the Acting Director, NSF, that the agency's management controls and financial management systems, taken as a whole, provide reasonable assurance that provisions of FMFIA Section 2 (internal and administrative controls) and Section 4 (financial systems) were achieved for FY 2004, as well as requirements of the Federal Financial Management Improvement Act (FFMIA). NSF systems are in compliance with applicable laws and administrative requirements, including OMB Circular A-123: Management Accountability and Controls and OMB Circular A-127: Financial Management Systems.

During the FY 2004 management controls evaluation process, no material weaknesses were identified, as defined by OMB guidance. As in previous years senior management identified issues that, while not management control deficiencies, could be potential impediments to effective controls in the future if not addressed. Challenges were identified, in particular, at the intersection between people, processes and systems: administrative resources and staffing have not kept pace with the volume and complexity of the Foundation's workload; the move toward fully electronic business processes has yielded efficiencies, but has also resulted in a need to redefine duties and responsibilities. NSF gives high priority to these issues – many are being addressed through activities already underway.

In the FY 2004 Independent Auditors' Report NSF received an unqualified opinion on its financial condition, with no material weaknesses and two reportable conditions: post-award administration and contract monitoring. NSF management believes that the Auditors' Report does not contain findings sufficient to support reportable conditions. In addition, management disagrees with the characterization of post-award administration – identified in three prior audits – as a repeat finding. Post-award administration is appropriately classified as a management challenge. NSF management's position is fully discussed in the response to the Auditors' Report.

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

## V. DISCUSSION AND ANALYSIS OF THE FINANCIAL STATEMENTS

The National Science Foundation is committed to excellence in financial management and providing the highest quality of business services to its stakeholders. It honors that commitment by preparing annual financial statements in conformity with Generally Accepted Accounting Principles (GAAP) in the United States and then subjecting the statements to an independent audit to ensure their integrity and reliability in assessing the performance of NSF. For FY 2004, NSF received an unqualified opinion that the financial statements were fairly stated in all material respects. The Auditors' Report also conveyed two reportable conditions, post-award administration and contract monitoring. NSF management believes that the Auditors' Report does not contain findings sufficient to support reportable conditions. For further discussion, see management's response on page III-55.

NSF's Five-Year Financial Management Plan (Fiscal Years 2001-2005) supports the President's Management Agenda by establishing key components to accomplish our financial management strategic vision. They are Accountability and Stewardship of the resources provided to NSF; Top Quality Business Services to our external and internal customers (E-travel, panel travel, and E-payroll); Electronic Delivery Systems for operations, transactions and outreach (related to Fastlane and the Financial System); and Constructive Partnerships to pilot new practices and to provide specialized services (Grants.gov, Lines of Business).

NSF's Financial Accounting System (FAS) provides the full spectrum of financial transaction-based functionality required for a federal agency. FAS processes financial transactions on a real time basis providing NSF decision makers with accurate and up-to-date information. The FAS is extensively integrated with our FastLane and other award systems to create an optimal end-to-end electronic grant process. Grant cash drawdown payments and expenditure reporting are both processed electronically. The FAS system is currently in a steady state requiring only maintenance and modification, due to new guidance requirement. NSF is participating in the Financial Management and Grants Management Lines of Business initiatives that will determine the next generation of NSF's financial system.

### Understanding the Financial Statements

NSF's FY 2004 financial statements and notes are presented in the format required for the current year by OMB Bulletin No. 01-09, *Form and Content of Agency Financial Statements*, dated September 25, 2001, and OMB Memorandums specifically M-04-20, *FY 2004 Performance and Accountability Reports and Reporting*, dated July 22, 2004. NSF's current year financial statements and notes are presented in a comparative format, except for the Statement of Net Cost, providing financial information for FY 2004 as well as for FY 2003. The Stewardship Investment Statement presents information over the past five years. The following table (Figure 9) summarizes the significant changes in NSF's financial position during FY 2004.

Figure 9.

**Significant Changes in NSF's Financial Position in FY 2004**

(Dollars in thousands)

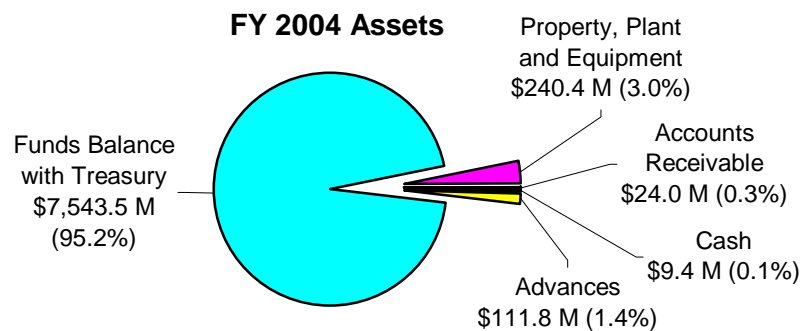
Net Financial Condition	FY 2004	FY 2003	Increase/ (Decrease)	% Change
Assets	\$7,929,034	\$7,424,919	\$504,115	7%
Liabilities	\$396,113	\$379,705	\$16,408	4%
Net Position	\$7,532,921	\$7,045,214	\$487,707	7%
Net Cost	\$5,100,143	\$4,707,771	\$392,372	8%

The following is 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 total 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 (Figure 10). *Fund Balance With Treasury* is funding available through the Department of Treasury accounts from which NSF is authorized to make expenditures and pay amounts due. *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 (USAP). *Advances* are funds advanced to NSF grantees, contractors, and other government agencies. NSF's FY 2003 net position shown on the balance sheet was restated due to reclassifying balances from *Unexpended Appropriations* to *Cumulative Results of Operations*. The reclassification was to correct H-1B Nonimmigrant Petitioner Fees that were reported as appropriated funds rather than Earmarked Receipts in prior years. See footnote 14 in the financial statement for further details.

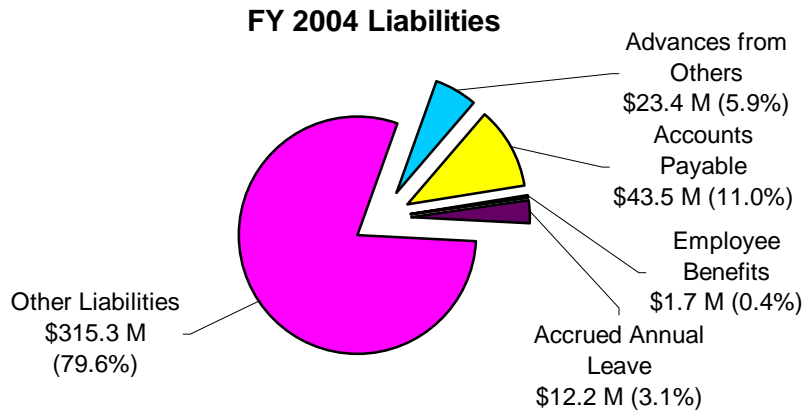
Figure 10.



Three line items, *Advances From Others*, *Accounts Payable* and *Accrued Liabilities (Other Liabilities)* represent 96 percent of NSF's current year liabilities (Figure 11). *Advances From Others* are prior year amounts remaining advanced to NSF from other federal entities for the

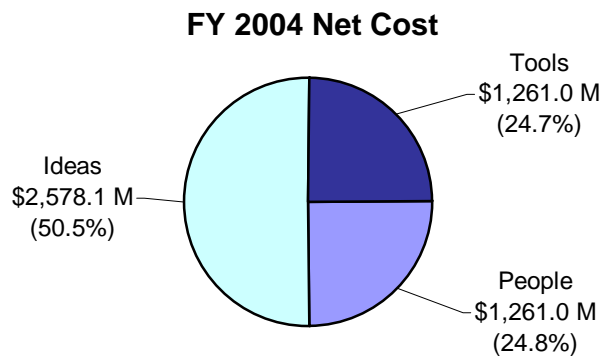
administration of grants on their behalf. NSF maintains the expertise and automated systems for the administration of research grants upon which other federal entities rely to assist in the administering of their grants. *Accounts Payable* includes liabilities to NSF vendors for unpaid goods and services received. *Accrued Liabilities* are amounts recorded for NSF's grants and contracts for which work has been completed, although payment has not been rendered.

Figure 11.



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. In FY 2004 the Statement of Net Cost has been revised to reflect NSF's new programmatic framework; a discussion of NSF's new Investment Categories can be found on page I-22.

Figure 12.



*Note: Included in People, Ideas and Tools is approximately 5 percent of Salaries & Expenses, National Science Board and OIG costs that are the administration and management costs addressed by NSF's new Organizational Excellence strategic goal.*

Approximately 95 percent of all current year NSF costs incurred were directly related to the support of NSF *People, Ideas and Tools* programs (Figure 12). Costs were incurred for indirect general operation activities – e.g., as salaries, training, activities related to the advancement of NSF information systems technology, and the activities of the National Science Board and the Office of Inspector General. These costs were allocated to NSF's investment categories under *People, Ideas, and Tools* and account for slightly more than five percent of the total current year NSF Net Cost of Operations. These administration and management activities are the focus of NSF's new *Organizational Excellence* strategic goal.

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. NSF's Net Position increased to \$7.5 million in FY 2004 – an increase of 7 percent – due to the increase in *Unexpended Appropriations*. *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. NSF's FY 2003 Statement of Changes in Net Position was restated due to reclassifying balances from *Unexpended Appropriations* to *Cumulative Results of Operations*. The reclassification was to correct H-1B Nonimmigrant Petitioner Fees that were reported as appropriated funds rather than earmarked receipts in prior years. The reclassification also corrects expenditures reported as *Appropriations Used–Unexpended Appropriation* rather than *Unexpended Appropriations-Cumulative Results of Operations*. See footnote 14 in the financial statements for further details.

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. For FY 2004, *Budgetary Authority* for Research and Related Activities, Education and Human Resources, Major Research Equipment and Facilities Construction, the combined National Science Board, OIG and Salaries & Expenses were \$4,277 million, \$945 million, \$156 million and \$234 million, respectively. *Total Budgetary Resources* increased by 4 percent and *Net Outlays* increased by 9 percent in FY 2004, which is due to NSF's increase in appropriated funds. The *Net Outlays* reported on this statement reflects the actual cash disbursed for the year by Treasury for NSF obligations; it is reduced by the amount of Donation Fund receipts, to include donations and interest received by NSF.

Statement of Financing: This statement illustrates the 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 is 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. *Total Resources Used to Finance Activities* are only resources that have been obligated and are derived from information provided on the Statement of Budgetary Resources. *Total Resources Used to Finance Items Not Part of Net Cost of Operations* consists mainly of an adjustment to undelivered orders of the agency that are reflected in net obligations but not part of *Net Cost of Operations*. *Components Requiring or Generating Resources in Future Periods* adjusts for future funded expenses that are recognized in *Net Cost of Operations* but resources will not be provided until subsequent periods.

**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, students and teachers supported or involved in the pursuit of discoveries in science and engineering and in science and math education. Stewardship investments from FY 2003 to FY 2004 showed consistent incremental increases in research and human capital activities in support of NSF's overall mission as reported in monetary investments and measured outputs. 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 six Congressional appropriations that totaled \$5.6 billion in FY 2004, a 5.0 percent increase from the prior year.<sup>23</sup> As of September 30, 2004, other FY 2004 revenue sources included \$111.6 million in reimbursable authority, \$11.3 million in appropriation transfers from other federal agencies, and \$23.9 million in donations to support NSF activities.

As shown in the Statement of Net Cost, in FY 2004, the Foundation made investments in fundamental research and education through ten Investment Categories that are linked to the agency's strategic outcome goals of *People, Ideas, Tools* and *Organization Excellence*. These Investment Categories, which together with NSF's priority areas, constitute the agency's PART programs. The investment categories are: Individuals; Institutions; Collaborations; Fundamental Science and Engineering; Centers; Capability Enhancements; Large Facilities; Infrastructure and Instrumentation; Polar Tools, Facilities, and Logistics; and Federally Funded Research and Development Centers. Support was provided across the full range of science and engineering disciplines with emphasis on the physical sciences. The Foundation also supported five key multidisciplinary priority areas: Biocomplexity in the Environment; Information Technology Research; Nanoscale Science and Engineering; Mathematical Sciences; and Human and Social Dynamics. NSF support of education activities span from pre-K to the post-doctoral level. NSF continued its third year of support for the President's Math and Science Partnership, to link state and local school districts with science, mathematics, engineering and education faculty in colleges and universities to improve preK-12 math and science educational practices, train teachers, and create innovative ways to reach out to underserved students and schools. Among major facility projects supported were the Atacama Large Millimeter Array (ALMA) aperture-synthesis radio telescope; EarthScope, a distributed geophysical instrument array that will enhance our understanding of the structure and dynamics of the North America continent; the IceCube Neutrino Detector Observatory in Antarctica; and Terascale Computing Systems that will provide state-of-the-art capabilities for simulation and modeling for a vast array of scientific, engineering and mathematical problems.

At the time of this report, NSF had not yet received its FY 2005 appropriations. For FY 2005, in keeping with efforts to promote fiscal responsibility across the government, NSF has identified three priorities: (1) Strengthen NSF management of the investment process and operations by increasing the workforce, enhancing the information technology infrastructure, promoting leading-edge approaches to e-Government and ensuring adequate safety and security for all of NSF's IT and physical resources; (2) Improve the productivity of researchers and expand opportunities for students; and (3) Strengthen the nation's performance with world-class

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<sup>23</sup> Includes a government-wide 0.59 percent rescission.

instruments and facilities. Among the programmatic activities slated for support in FY 2005 are fundamental research that will help address homeland security challenges facing the nation; investments in cyberinfrastructure to bring next-generation computer and networking capabilities to researchers and educators nationwide; the Administration's Climate Change Research Initiative; ongoing research on the genomics of plants of major economic importance; and international science and engineering, to ensure that American researchers have opportunities to engage with the world's top researchers, to lead major international collaborations and to have access to the best research facilities throughout the world and across all the frontiers of science and engineering. Support is also slated for the four ongoing FY 2004 priority areas and for several major research equipment and facilities construction projects including ALMA, IceCube and EarthScope.

### **Improper Payments Information Act of 2002: Summary of Implementation Efforts for FY 2004 and Agency Plans for FY 2005 - 2007**

NSF has made substantial progress in executing its approved action plan<sup>24</sup> implementing the Improper Payments Information Act of 2002 (IPIA). Our approach is to integrate this effort into our existing grant monitoring activities by sampling for improper payments during site visits to entities with high-risk awards. NSF's grant monitoring framework assesses and manages awardee risks and assets based on a planned, dynamic multi-level risk minimization strategy.

NSF has undertaken the lead in measuring improper payments in the research grant community. This was a result of NSF's research and education awards being the only research grant programs identified for improper payments reporting in the former Section 57 of OMB Circular A-11. This year, NSF has been a key participant in both the Chief Financial Officers Council (CFOC) improper payments PAR workgroup and the Erroneous and Improper Payments Grant workgroup (EIP).

Our initial baseline attempt for measuring improper use payments showed a very low level. NSF's method was designed to comply with OMB guidance on implementing IPIA, however, our methodology was not statistically valid. Accordingly, our projection is not a comprehensive estimate of the potential improper payments. Our sampling was skewed towards our high risk grantees and as such is not statistically valid across the continuum of NSF awards.

Even using this conservative approach, our sampling indicated that improper payments have an incidence of less than one percent of our outlays – less than \$5 million. The sampling exercise reviewed our grantees expenses for propriety in accordance with OMB's May 21, 2003 improper payment guidance ("Improper Payments Information Act of 2002," M-03-13) and OMB's cost principles for grants.

After the award is made, awardees (e.g., colleges and universities, school systems, non-profit etc.), gain access to funds primarily through the Cash Request Function of the FastLane Financial Functions. Grantees can request funds as an advance or a reimbursement. NSF records all grantee payments in its general ledger as advances to the organizations. The grantees report actual expenditures quarterly on Part II of their Federal Cash Transaction Report (FCTR), "SF272a, Federal Share of Net Disbursements". These same expenditures are also included in the

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<sup>24</sup> Submitted to OMB December 1, 2003.



annual A-133 audit. It is this FCTR report that provides the starting point for the sampling process and the link to the accounting records. From this point, we can identify individual transactions for further review as to the propriety of the payment.

NSF does not have an issue with determining whether the correct amount is paid to the correct grantee. NSF's electronic process for cash draws and FCTR payments are highly automated and accurate in paying the correct grantee with the proper amount. Our accuracy in this grant payment process is 99.9 percent.

As the lead research grant-making agency in this initiative, NSF encountered challenges this year developing an IPIA program. We will meet this challenge with a future focus on improving our sampling methodology, revising our plan, and most importantly improving our baseline information. We are also continuing our involvement in the EIP work group that is addressing how to report and measure improper payments for complex programs. Additional detailed information is provided in Appendix 4.

### **The Integration of Financial and Management Information**

The goal of NSF's financial management team has always been to provide the highest quality of business services to our customers, stakeholders and staff, through effective funds control, prompt and streamlined award processes and reliable and timely financial data to support good management decisions. In today's environment of tight fiscal constraints where management decisions are often difficult to make, the availability of accurate and useful financial information and effective and efficient financial operations are especially important. This year, as part of NSF's continuing efforts to make information more easily and quickly available to management and staff, NSF established ReportWeb, an information website of on-line reports, that along with NSF's Financial Accounting System (FAS) and Enterprise Information System (EIS), provide management and staff access to the agency's full spectrum of financial, budgetary, grants administration, merit review, general management and GPRA performance information.

The establishment of ReportWeb has not only improved the timeliness of the distribution of information but has also provided efficient access to financial management data that supports the day-to-day operations of the program offices. The NSF program offices use the Budget Execution Plan reports to monitor funds on an ongoing basis, to track trends, monitor operating expenses, identify travel and training costs and determine overall fund availability. Further drilldown of financial data is available in NSF's FAS, which reports real-time commitments, obligations and fund availability. ReportWeb, EIS and FAS have become an integral source of information flow to program offices; with the availability of grant award system and financial system reports on ReportWeb, an added benefit has been the savings the agency has realized from reduced printing and storage costs.

The availability of this information allows management to link agency resources to performance goals and outputs/outcomes and identify the cost of achieving program goals. This budget, cost and performance integration means strategic planning drives budgetary decisions, tracks accountability for performance and identifies cost. Up-to-date financial data is accessible to senior management on a "24/7" basis and is used to inform resource allocation, resource management and policy decisions.

## Key Financial Metrics

The information presented in this section relates some key financial measures of NSF's core business of awarding grants and our progress in associated electronic processes. NSF has an established record of success in leveraging automation to increase efficiency and productivity. In FY 2004, the Department of Treasury inaugurated a Financial Management Service Scorecard; like the PMA Executive Scorecard, ratings are issued quarterly. For the initial scorecard of FY 2004, NSF received the highest "green" rating, for accuracy and timeliness of reporting FMS reports 224, SF1218/1221 and FMS 1219/1220 (Figure 13). The third category, for Cash and Investments Held Outside of Treasury, does not apply to NSF.

Figures 14 and 15 focus on the agency's Federal Cash Transaction Report (FCTR) process, a key part of NSF's core grant business. In FY 1998, NSF established the capability for grantees to go online through a web-based "FastLane" system to electronically transmit their FCTR (SF 272) reports which are required by nearly all federal grant-making agencies. Within two years, virtually 100 percent of NSF grantees were submitting FCTR reports online and this trend has continued into FY 2004.

Figures 16, 17 and 18 depict the latest available information on key measures for NSF as reported in the Federal Measurement Tracking System (MTS) sponsored by the CFO Council Committee on Performance Measurement.<sup>25</sup> Figure 16 shows that in FY 2004, nearly 100 percent of grantee payments were transmitted electronically. Figure 17 shows that 100 percent of NSF vendor payments are made through electronic fund transfer; only vendor payments to foreign countries are not made via EFT. Figure 18 shows that close to 100 percent of NSF's non-credit card invoices are paid on time; NSF implemented an accounts payable module in its financial accounting system to ensure that Prompt Payment Act requirements are met. Finally, Figure 19 summarizes some of NSF's key workload and financial indicators.

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<sup>25</sup> <http://www.fido.gov/mts/>

Figure 13.

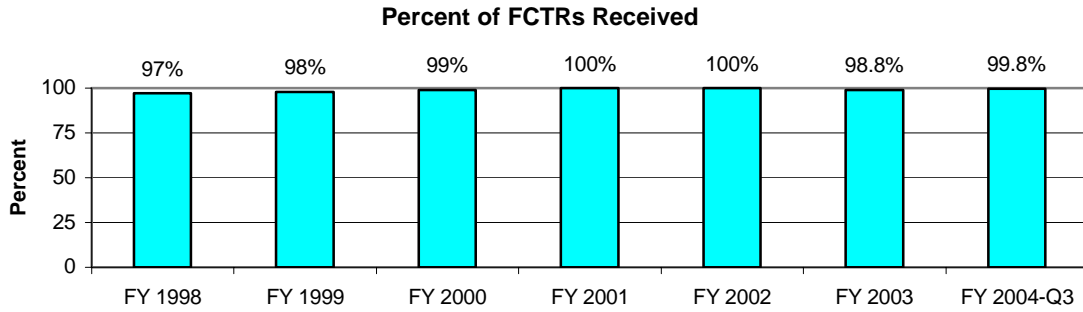
**U.S. Department of Treasury Financial Management Scorecard**

	Standard	Initial Results as of 6/30/04
Accuracy of Reporting*	<p><i>Green:</i> If differences outstanding for &lt;3 months.</p> <p><i>Yellow:</i> If differences outstanding from 3 to 6 months.</p> <p><i>Red:</i> If differences outstanding for &gt;6 months.</p>	<p style="text-align: center;">● GREEN</p>
Timeliness of Reporting*	<p><i>Green:</i> If original and supplemental reporting completed by the 3<sup>rd</sup> workday.</p> <p><i>Yellow:</i> If supplemental report submitted on the 4<sup>th</sup> day.</p> <p><i>Red:</i> If original submitted after the 3<sup>rd</sup> workday and/or supplemental submitted after the 4<sup>th</sup> workday.</p>	<p style="text-align: center;">● GREEN</p>
Cash and Investments Held Outside of the Treasury (CIHO) Reporting**	<p><i>Green:</i> If no differences between CIHO activity reported monthly (via 224, 1218/1221 and 1219/1220) and quarterly/annual Financial Statements.</p> <p><i>Yellow:</i> If CIHO reported on the monthly 224, 1218/1221 and/or 1219/1220, classified to a Treasury Account Symbol, however, there is an accountability balance on line 5.0 of the 1218 or 1219, and/or line 5.4 of the 224.</p> <p><i>Red:</i> If CIHO activities reported on a quarterly/annual Financial Statement not included on the monthly 224, 1218/1221 and/or 1219/1220.</p>	<p style="text-align: center;">N/A</p>

\* FMS 224, SF1218/1221 and FMS 1219/1220.

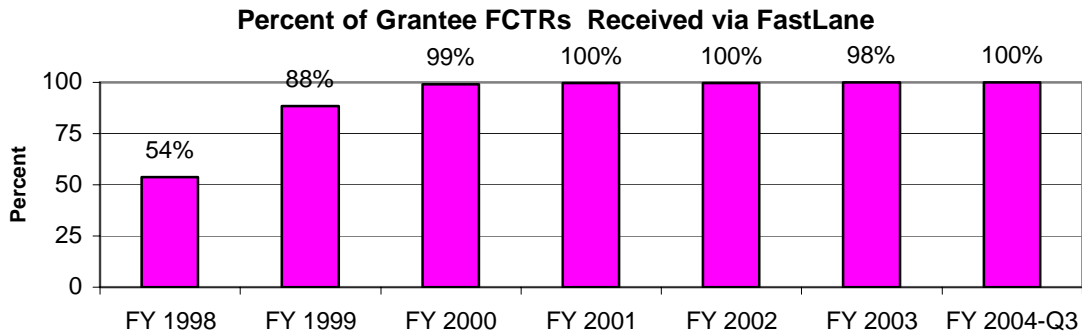
\*\* NSF does not have any of CIHO types of accounts.

Figure 14.



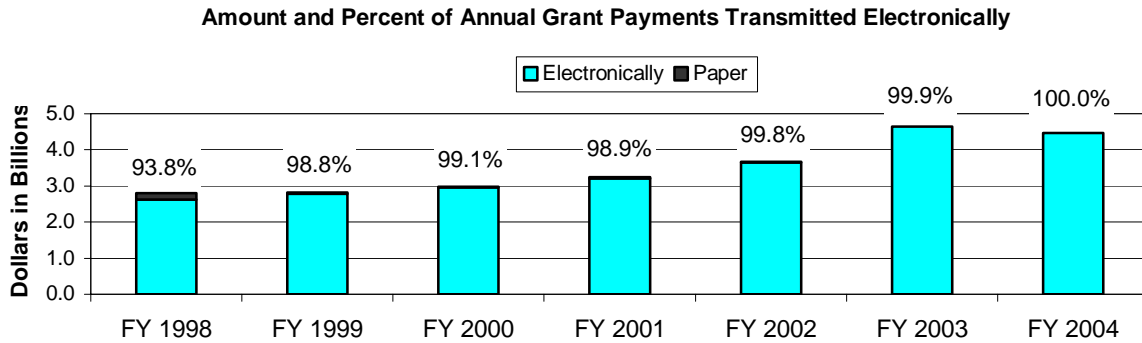
*NSF has established the capability for grantees to go online through a web-based “FastLane” system to electronically transmit Federal Cash Transaction Reports (SF 272). Nearly 100% of grantees submit FCTRs on time.*

Figure 15.



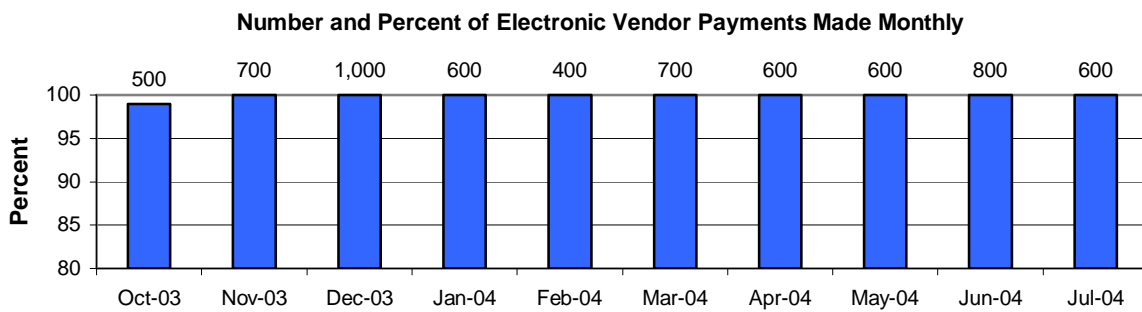
*Virtually 100% of NSF grantees submit their FCTRs online. NSF receives close to 100% of FCTRs from those grantees eligible to use electronic transmission of the report.*

Figure 16.



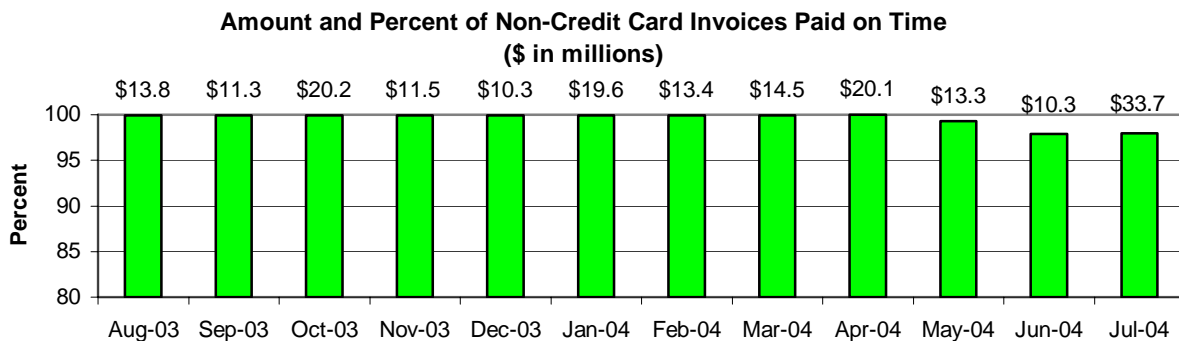
Customer-friendly enhancements to the FastLane FCTR module have greatly improved the efficiency of payments to grantees. Numbers shown above the bars indicate the percent of grantee payments transmitted electronically.

Figure 17.



NSF requires all commercial vendor payments be made through EFT, except foreign ones. Numbers shown above the bars indicate the number of electronic payments made. (Note: July 2004 is most recent data available at this time.)

Figure 18.



NSF has implemented an accounts payable module in its financial accounting system that ensures that Prompt Payment Act requirements are met. Numbers shown above bars indicate dollar amounts of invoices paid. (Note: July 2004 is most recent data available at this time.)

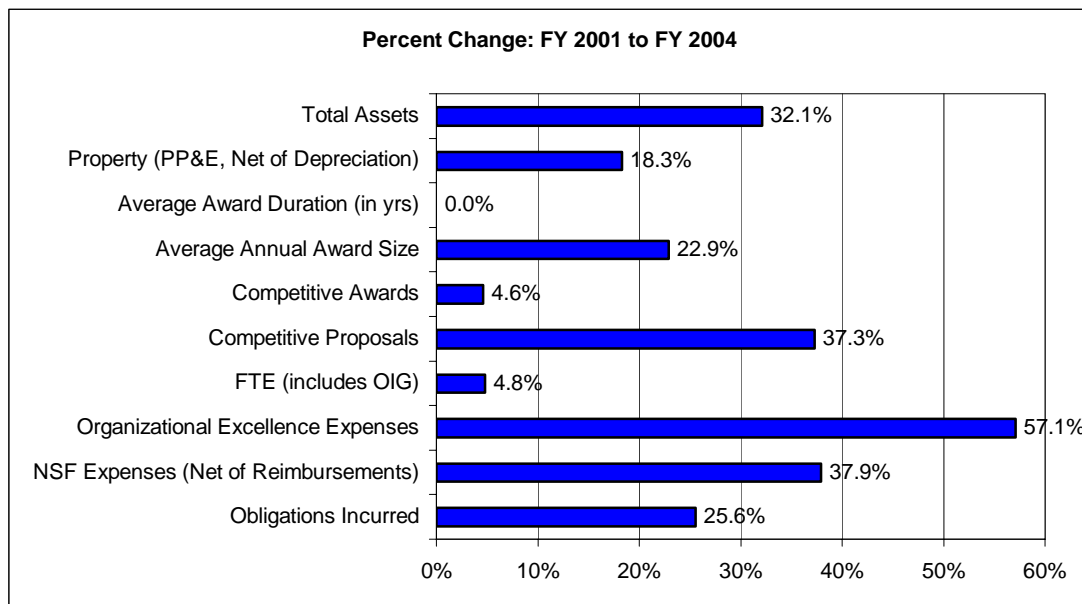
Figure 19.

**Recent Trends**

The following table summarizes several of NSF's key workload and financial indicators. For the period FY 2001 to FY 2004, 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 staff. NSF property increased substantially due to the Antarctic South Pole Station Modernization multi-year project that is nearing completion. NSF's total assets increased mainly due to a larger cash balance with Treasury, which is also related to NSF's budget increase.

(Dollars in Millions)

	FY 2001	FY 2002	FY 2003	FY 2004	%Change FY 01-04
Obligations Incurred	\$4,674.88	\$4,953.64	\$5,578.64	\$5,870.72	25.6%
NSF Expenses (Net of Reimbursements)	\$3,698.14	\$4,132.27	\$4,707.77	\$5,100.14	37.9%
Organizational Excellence (Expenses)	\$170.76	\$183.89	\$196.36	\$268.30	57.1%
FTE (includes OIG)	1,216	1,239	1,242	1,274	4.8%
Competitive Proposals	31,942	35,164	40,075	43,851	37.3%
Competitive Awards	9,925	10,406	10,844	10,380	4.6%
Average Annual Award Size	\$113,601	\$115,666	\$135,609	\$139,637	22.9%
Average Award Duration (in yrs)	2.9	2.9	2.9	2.9	0.0%
Property (PP&E, Net of Depreciation)	\$203.24	\$224.14	\$230.78	\$240.44	18.3%
Total Assets	\$6,001.90	\$6,713.15	\$7,424.92	\$7,929.03	32.1%



## 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 administrative policy initiatives mandate that NSF, like other agencies, demonstrate consistent results and progress in improving financial management practices. NSF, although continuing to receive high marks from OMB and the financial community, will need to engineer constant improvements in achieving 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:** NSF has always prided itself in meeting all financial reporting deadlines as we have done with the new OMB accelerated reporting requirements for quarterly Financials as well as pro-actively meeting the fiscal year-end reporting requirements.

Our next goal is to institutionalize this accelerated process into our daily financial reporting. NSF believes that it can use this accelerated process to help develop tools that can be used to identify financial issues earlier in the fiscal year. Through this process NSF has developed a system that generates Closing Entries and Financial Statements automatically. We have also incorporated the requirements for the New Government-wide Financial Reporting System (GFRS), by generating our Financial Statements in the format required by this new system. As a result of this automation process NSF is allowed to spend more time analyzing its data prior to producing the statements. With the Financial process accelerated NSF can ensure that its stakeholders have accurate and timely information available for their use.

The accelerated process has been very demanding but NSF feels that we are meeting the challenge and believes through this we will become even better financial innovators.

- **Budget, Cost and Performance Integration:** NSF is making progress to accomplish this PMA goal; for a more detailed discussion see the PMA discussion on page I-13. A key element of NSF's Budget, Cost and Performance Integration Work Plan is to interface the Financial Accounting System with the new strategic framework, to allow automatic tracking of expenditures by the Foundation's primary investment categories. The availability of this information should enable better planning for long-term investments.
- **E-Grants:** NSF is utilizing a centralized approach for eGrants to leverage and coordinate our efforts for Grants.gov, Grants management Line of Business and the P.L. 106-107 initiatives. NSF continues our support as a full-fledged Grants.gov partner agency among the eleven partner agencies in the government-wide Grants.Gov Initiative; we continue to be a lead partner agency in the Grants Line of Business President's Management Agenda initiative. See PMA discussion on E-Gov, on page I-12.

- E-Travel: NSF is an official “participating agency” for the eTravel initiative. This project, one element of the PMA E-Gov initiative, will provide a government-wide, integrated state-of-the-art web-based solution for travel authorization; reservation and ticketing; and vouchering and payment processes. NSF’s administrative and financial employees collaborated to make the eTravel system selection. This collaborative approach will continue as we plan and migrate to a new system. This eTravel system will automate the current financial paper system, improve employee productivity, increase controls, and institute systematic travel card management capabilities. By the end FY 2005, eTravel will put an integrated, easy to use end-to-end travel service on the desktop of every NSF employee.
- FM-Line of Business (FM-LOB): In March 2003, OMB launched new lines of business initiatives, which focus on common solutions within federal agencies. “Financial Management-Line of Business” is one of the new initiatives. The FM-LOB intends to establish and operate a Government-wide financial management solution that is efficient and improves business performance while ensuring integrity in accountability, financial controls and mission effectiveness.

Some of the goals desired through the FM-LOB are to enhance process improvements and cost savings in the acquisition, development, implementation, and operation of financial management systems through shared services, joint procurements, and consolidation; provide standardization of business processes and data definitions; seamless data exchange between and among federal agencies and; strengthen internal controls through interoperability of core financial and subsidiary systems. NSF participates as an *ex-officio* member on the FM-LOB task force working to develop a government-wide financial management system business strategy that identifies efficiencies, improve business performance and reduces cost. Financially, NSF is focusing efforts on providing next generation grant financial functions as part of an overall end-to-end LOB solution. NSF serves on the Business Management Workgroup and the Business Case Work Group.

### **Limitations of the Financial Statements**

In accordance with OMB Bulletin 01-09, *Form and Content of Agency Financial Statements*, we are disclosing the following limitations of NSF’s FY 2004 financial statements, which are contained in NSF’s *FY 2004 Performance and Accountability Report*. The financial statements have been prepared to report the financial position and results of operations of NSF, pursuant to the requirements of 31 U.S.C. 3515(b). While the statements have been prepared from NSF’s books and records in accordance with generally accepted accounting principles (GAAP) for federal entities and the formats prescribed by OMB, the 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 statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.