NSB-10-27

Report to the National Science Board

on the

National Science Foundation's

Merit Review Process

Fiscal Year 2009

May 2010

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APPENDICES

FY 2009 Report on the NSF Merit Review Process

I. Executive Summary

This report to the National Science Board (NSB) includes data and other information relative to the National Science Foundation (NSF or the Foundation) Merit Review Process for fiscal year 2009. NSF received a $6.5 billion allocation through the FY 2009 Omnibus Bill and an additional $3.0 billion allocation through the American Recovery and Reinvestment Act (ARRA). The report includes information indicating the impact of both these allocations.

In FY 2009, NSF received a total of 45,181 proposals. This is an increase of about 2% from the number of proposals received in FY 2008, and an increase of over 40% from the number of proposals received in FY 2001.

The Foundation made 9,975 awards with Omnibus funding and 4,620 awards with ARRA funding for a total of 14,595 awards. This resulted in a 32 percent funding rate in FY 2009, significantly exceeding the 25 percent funding rate in the previous year. However, as indicated by data in **Appendix 1**, the average funding rate varies by NSF directorate. Although not included in this report, there is an even greater variation of funding rate by program.

The funding rates for groups underrepresented in science and engineering and new principal investigators (PIs) were all greater in FY 2009 than in FY 2008. In particular, the funding rate in FY 2009 for female PIs was 34 percent, PIs from underrepresented race/ethnic groups was 30 percent, persons with disabilities was 32 percent and new PIs was 25 percent. These data are provided in Section IV.A.

The ARRA allocation also contributed to an increased annualized award amount in FY 2009. This data is provided in Section IV.E, with annualized award amounts in both current and constant dollars.

Proposals are externally reviewed by three methods: panel only, mail + panel, and mail only. In FY 2009, 57 percent were reviewed by panel only, 32 percent by mail + panel, and 7 percent by mail only. These percentages have remained fairly constant over the last several years. In addition, about 4 percent of proposals are not reviewed externally (these include, for example, proposals for travel, symposia, Early Concept Grants for Exploratory Research, and Grants for Rapid Response Research). This information is provided in Section V.C.

Because of space constraints, printed versions of this report include, in most cases, data for only eight years. However, one can access additional historical data through the electronic version of the report that is posted on the NSB website (http://www.nsf.gov/nsb/).

II. Introduction

The National Science Foundation Act of 1950 directs the Foundation "to initiate and support basic scientific research and programs to strengthen scientific research potential and science education programs at all levels."[1] NSF achieves its unique mission by making merit-based awards to researchers, educators, and students at approximately 1,900 U.S. colleges, universities and other institutions.

NSF received a $6.5 billion allocation through the FY 2009 Omnibus Bill and an additional $3 billion allocation through the American Recovery and Reinvestment Act (ARRA). The report includes information indicating the impact of both these allocations.

All proposals are evaluated using the two NSB-approved criteria: *intellectual merit* and *broader impacts*. As stated in the NSF *Grant Proposal Guide*[2], consideration is also given to how well the proposed activity 1) fosters the integration of research and education, and 2) broadens opportunities to include a diversity of participants, particularly from underrepresented groups. Additional criteria, as stated in the program announcement or solicitation, may be required to highlight the specific objectives of certain programs or activities. About 96 percent of NSF's proposals are evaluated by external reviewers as well as by NSF staff. The remaining proposals fall under special categories that are, by NSF policy, exempt from external review and maybe internally reviewed only, such as EArly-concept Grants for Exploratory Research (EAGERs) and Grants for Rapid Response Research (RAPIDs) (see **Appendix 10**).

This *FY 2009 Report on the NSF Merit Review Process* responds to a National Science Board (NSB) policy endorsed in 1977 and amended in 1984, requesting that the NSF Director submit an annual report on the NSF merit review process. Section III provides information about ARRA, NSF policies and priorities in selecting proposals for ARRA support, and the distribution of ARRA award funding. Section IV of the report provides summary data about proposals, awards, and funding rates. Longitudinal data are given to provide a long-term perspective. In most cases, the data provided are for only eight years due to space constraints; however, additional historical data is available through the electronic version of the report that is posted on the NSB website (http://www.nsf.gov/nsb/).

[1] 42 CFR 16 §1862, available at http://www4.law.cornell.edu/uscode/html/uscode42/usc_sec_42_00001862----000-.html

[2] NSF *Grant Proposal Guide* (GPG) available at: http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_index.jsp

III. American Recovery and Reinvestment Act

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA) into law. One of the principal purposes of the law is to "provide investments needed to increase economic efficiency by spurring technological advances in science and health."[3] ARRA supplemented NSF fiscal year 2009 allocation by $3 billion.

NSF annually has highly rated proposals that it is unable to fund. For this reason, NSF used the majority of the $2 billion available in Research and Related Activities for proposals that were already in house and reviewed prior to September 30, 2009. NSF included for consideration proposals declined on or after October 1, 2008. In those instances where a previously declined proposal was funded with the ARRA appropriation, the reversal of the decision to decline was based on both the high quality of the proposal and on the lack of available funding at the time the original decision was made. The cognizant program officer contacted the institution when a reversal was being considered by NSF. A total of 318 ARRA awards were made through reversals of previous declined proposals.

NSF set 30 percent as the funding rate goal for FY2009. In addition, NSF's overall framework for ARRA investments emphasized the following:

- All grants issued with ARRA funds were standard grants with durations of up to five years. This approach allowed NSF to structure a sustainable portfolio.

- Funding of new Principal Investigators and funding of high-risk, high-return research were both top priorities.

[3] Pub.L. 111-5, available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_public_laws&docid=f:publ005.111

Figure 1
NSF Spending Plan for the American Recovery and Reinvestment Act of 2009

Program/Activity	Funds Received	Funds Obligated as of 9/30/09
Research & Related Activities (R&RA) • Core Research, Facilities, and Infrastructure Investments ($1,980M) • Major Research Instrumentation ($300M)* • Academic Research Infrastructure ($200M)* • Research Infrastructure Improvement Program: Inter-Campus and Intra-Campus Cyber Connectivity ($20M)*	$2,500M	$2,063M (83%)
Education and Human Resources (EHR) • Robert Noyce Scholarship Program ($60M) • Math and Science Partnership Program ($25M) • Science Masters' Program ($15M)*	$100M	$85M (85%)
Major Research Equipment and Facilities Construction Program • Alaska Region Research Vessel ($148M) • Advanced Technology Solar Telescope ($146M) • Ocean Observatories Initiative ($106M)	$400M	$254M (64%)
Office of Inspector General	$2M	$0.02M (<1%)
TOTAL	**$3,002M**	**$2,402M (80%)**

Source: NSF FY 2009 Agency Financial Report

* The funds for these programs were not intended to be obligated in FY 2009. The Foundation issued solicitations for the Science Masters, Research Infrastructure Improvement Program: Inter- Campus and Intra-Campus Cyber Connectivity, Academic Research Infrastructure, and Major Research Infrastructure Programs. Awards for proposals submitted to these programs are being made in FY 2010.

IV. Proposals and Awards

A. Proposals, Awards, and Funding Rates

A proposal is included in a given year based on whether the action (award or decline) was taken that year, not whether the proposal was received in that year. There were 45,181 proposals in FY 2009, as shown in **Figure 2**. This resulted in 14,595 awards (9,975 funded from the 2009 Omnibus and 4,620 funded from the ARRA allocation) for a funding rate of 32 percent. **Appendix 1** provides proposal, award, and funding rate data by NSF directorate and office.

Figure 2
NSF Proposal, Award, and Funding Rate Trends

	2002	2003	2004	2005	2006	2007	2008	2009 Total	2009 Omnibus	2009 ARRA
Proposals	35,165	40,075	43,851	41,722	42,352	44,577	44,428	45,181	-	-
Awards	10,406	10,844	10,380	9,757	10,425	11,463	11,149	14,595	9,975	4,620
Funding Rate	30%	27%	24%	23%	25%	26%	25%	32%	-	-

Source: NSF Enterprise Information System 10/2/09.

In addition to the full proposals in Figure 2, in FY 2009 there were 3,856 preliminary proposals, which are required for some NSF programs. See **Appendix 2** for additional data and information on preliminary proposals.

Figure 3 provides data on proposal, award, and funding rates by PI characteristics (gender, minority status, new and prior PI status).

Figure 3
Competitively Reviewed Proposals, Awards and Funding Rates
By PI Characteristics

		2002	2003	2004	2005	2006	2007	2008	2009
All PIs	Proposals	35,165	40,075	43,851	41,722	42,352	44,577	44,428	45,181
	Awards	10,406	10,844	10,380	9,757	10,425	11,463	11,149	14,595
	Omnibus								*9,975*
	ARRA								*4,620*
	Funding Rate	30%	27%	24%	23%	25%	26%	25%	32%
Female PIs	Proposals	6,704	7,335	8,427	8,266	8,510	9,197	9,431	9,727
	Awards	2,012	2,090	2,118	2,107	2,233	2,493	2,556	3,297
	Omnibus								*2,247*
	ARRA								*1,050*
	Funding Rate	30%	28%	25%	25%	26%	27%	27%	34%
Male PIs	Proposals	27,500	31,238	33,300	31,456	31,482	32,650	32,074	32,091
	Awards	8,203	8,495	7,923	7,305	7,765	8,451	7,986	10,437
	Omnibus								*7,169*
	ARRA								*3,268*
	Funding Rate	30%	27%	24%	23%	25%	26%	25%	33%
Minority PIs	Proposals	1,906	2,141	2,551	2,468	2,608	2,798	2,762	2,945
	Awards	548	569	597	569	638	713	670	889
	Omnibus								*649*
	ARRA								*240*
	Funding Rate	29%	27%	23%	23%	24%	25%	24%	30%
New PIs	Proposals	15,085	17,584	19,052	17,660	18,061	18,971	18,989	19,044
Former	Awards	3,329	3,390	3,256	3,001	3,240	3,660	3,622	4,706
Definition[*]	*Omnibus*								*2,967*
	ARRA								*1,739*
	Funding Rate	22%	19%	17%	17%	18%	19%	19%	25%
New PIs	Proposals	13,450	15,555	16,723	15,467	15,877	16,445	16,483	16,840
Revised	Awards	2,877	2,952	2,881	2,687	2,842	3,151	3,132	4,174
Definition[*]	*Omnibus*								*2,613*
	ARRA								*1,561*
	Funding Rate	21%	19%	17%	17%	18%	19%	19%	25%
Prior PIs	Proposals	20,080	22,511	24,799	24,062	24,294	25,606	25,439	26,137
Former	Awards	7,077	7,478	7,124	6,756	7,185	7,803	7,527	9,889
Definition[*]	*Omnibus*								*7,008*
	ARRA								*2,881*
	Funding Rate	35%	33%	29%	28%	30%	30%	30%	38%

		2002	2003	2004	2005	2006	2007	2008	2009
Prior PIs	Proposals	21,361	24,190	26,765	26,130	26,172	27,660	27,424	28,341
Revised	Awards	7,353	7,769	7,373	7,070	7,475	8,202	7,892	10,421
Definition[*]	*Omnibus*								*7,362*
	ARRA								*3,059*
	Funding Rate	34%	32%	28%	27%	29%	30%	29%	37%
PIs with	Proposals	466	494	525	454	434	448	448	470
Disabilities	Awards	128	124	121	95	107	104	109	149
	Omnibus								*105*
	ARRA								*44*
	Funding Rate	27%	25%	23%	21%	25%	23%	24%	32%

Source: NSF Enterprise Information System 10/2/09

* In FY 2009, in conjunction with NSF's implementation of the ARRA, NSF revised its definition of a new PI. The revised definition is "A new PI is an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia and workshop grants.)" Previously, a new PI was considered to be any individual who had not previously been a PI on any NSF award. Historical data shown for the revised definition is based on the NSF Enterprise Information System, as of October 2, 2009.

Gender and minority status is based on self-reported information in proposals, with about 91 percent of PIs providing gender information and 89 percent providing minority status information. Minority status includes American Indian, Alaska Native, Black, Hispanic, and Pacific Islander and excludes Asian and White-Not of Hispanic Origin. **Appendix 3** provides proposal, award, and funding rate information by PI race and ethnicity. **Appendix 4** provides funding rate information by new PI and prior PI status by directorate

B. Types of Awards

In general, NSF uses three kinds of funding mechanisms: grants, cooperative agreements, and contracts. Most of NSF's projects support or stimulate scientific and engineering research and education, and are funded using grants or cooperative agreements. A grant is the primary funding mechanism used by NSF. A grant can be funded as either a standard award (in which funding for the full duration of the project, generally 1-5 years, is awarded in a single fiscal year) or a continuing award (in which funding of a multi-year project is usually provided in annual increments). For continuing grants, the initial funding increment is accompanied by a statement of intent to continue funding the project in yearly increments (called "continuing grant increments" or CGIs)[4] until the project is completed. The continued funding is subject to NSF's judgment of satisfactory progress, availability of funds, and receipt and approval of required annual reports. Cooperative agreements are used when the project requires substantial agency involvement during the project performance period (e.g., research centers, multi-user

[4] While the original award is a competitive action, the Continuing Grant Increment (CGI) is a non-competitive grant. Continued incremental funding is based on NSF review of annual project reports and additional oversight mechanisms established by specific programs.

facilities). Contracts are used to acquire products, services and studies (e.g., program evaluations) required primarily for NSF or other government use.

As shown below in **Figure 4**, in FY 2009, NSF devoted 44 percent of its total budget to new standard grants and 8 percent to new continuing grants. The use of standard and continuing grants allows NSF flexibility in balancing current and future obligations, and managing funding rates. Note: ARRA awards were made as standard grants.

Figure 4
Percentage of NSF Awards by Funding Mechanism

CATEGORY	2002	2003	2004	2005	2006	2007	2008	2009
Standard Grants	27%	25%	25%	23%	25%	26%	28%	44%
New Continuing	16%	16%	14%	14%	13%	14%	13%	8%
CGIs and Supplements	26%	26%	28%	29%	28%	26%	26%	18%
Cooperative Agreements	22%	25%	24%	24%	23%	22%	23%	21%
Other*	9%	9%	9%	10%	11%	11%	11%	9%

Source: NSF Enterprise Information System 12/11/09.
Percentages may not sum to 100 due to rounding.

*Includes contracts, fellowships, interagency agreements, and IPA agreements.

C. Awards by Sector/Institution

In FY 2009, NSF awarded approximately 76 percent of its budget to academic institutions, 13 percent to non-profit and other organizations, 6 percent to for-profit businesses, and 4 percent to Federal agencies and laboratories[5]. This overall distribution of funds by type of organization has remained fairly constant over the past five years as shown in **Figure 5**.

Figure 5
Distribution of Funds by Type of Organization

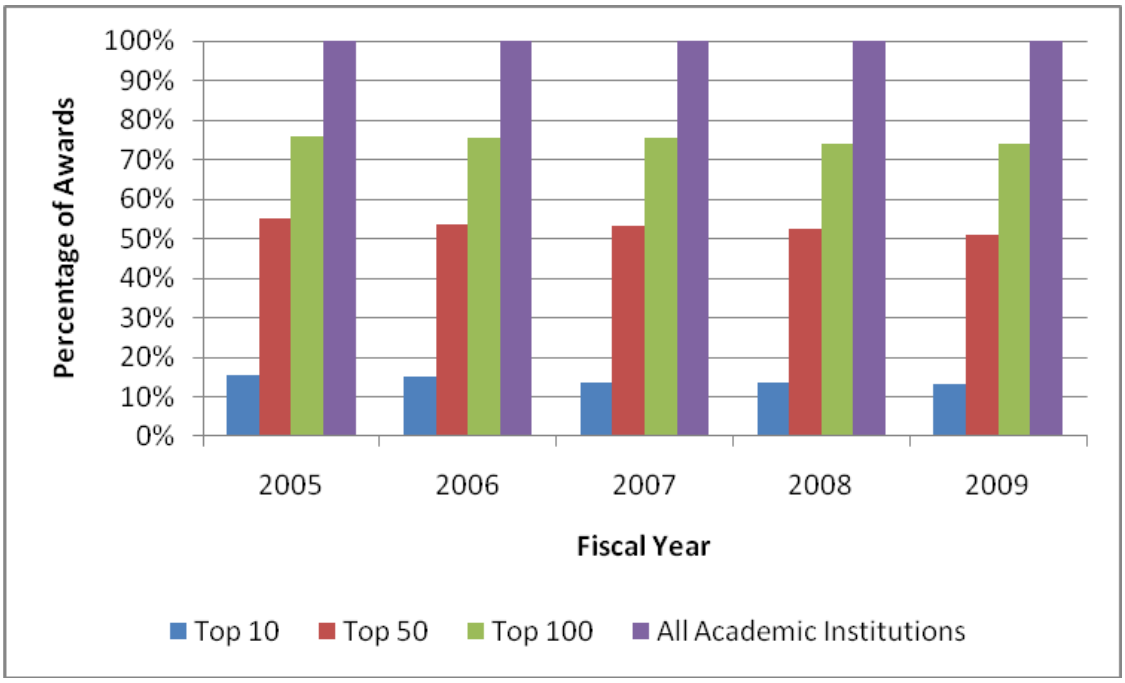
Sector/Institution	2002	2003	2004	2005	2006	2007	2008	2009
Academic Institutions	76%	76%	76%	76%	76%	76%	76%	76%
Non-Profit and Other Organizations	15%	15%	15%	15%	15%	15%	13%	13%
For-Profit	7%	7%	7%	7%	7%	7%	8%	6%
Federal Agencies and Laboratories	2%	2%	2%	2%	2%	3%	3%	4%

Source: NSF Enterprise Information System 10/02/09.
Percentages may not sum to 100 due to rounding.

For **Figure 6**, academic institutions are categorized according to the proportion of NSF funding received (i.e., those receiving the largest proportion of NSF funding – the top 10, 50, and 100 academic institutions).

[5] Numbers do not total to 100% due to rounding.

Figure 6
Percentage of Awards to Academic Institutions
(By Proportion of Funds Received)



Source: NSF Enterprise Information System 10/2/09

The Foundation also tracks funding rates for different types of academic institutions. For FY 2009, the funding rate was 35 percent for the top 100 Ph.D.-granting institutions according to the amount of FY 2009 funding received. In comparison, the rate was 24 percent for the Ph.D.-granting institutions that are not in the top 100 NSF-funded category. The funding rates for two- and four-year institutions were 27 percent and 31 percent, respectively for FY 2009. For minority-serving institutions, the FY 2009 funding rate was 26 percent.

The Foundation also promotes geographic diversity of the participants in its programs. For example, the mission of the Experimental Program to Stimulate Competitive Research (EPSCoR) is to assist the NSF in its statutory function "to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education."[6] The EPSCoR program was designed for those jurisdictions that have historically received lesser amounts of NSF Research and Development (R&D) funding. In FY 2009, 27 states, the Commonwealth of Puerto Rico and the U.S. Virgin Islands were eligible to participate in the program. **Appendix 9** has data on proposals, awards, and funding rates for the EPSCoR jurisdictions.

[6] 42 CFR 16 §1862, available at http://www4.law.cornell.edu/uscode/html/uscode42/usc_sec_42_00001862----000-.html

In addition, NSF made numerous outreach presentations to diverse institutions across the country in an effort to help increase their participation and success in NSF programs:

- Two Regional Grants Conferences were held in FY 2009. These conferences were organized by the NSF Policy Office, and hosted by the University of Nebraska Lincoln and Arizona State University.

- 10 "NSF Days" organized by the Office of Legislative and Public Affairs, were held throughout the year in Alabama, California, Hawaii (3), New York, Ohio, Wisconsin, Michigan, and Vermont.

Representatives from most of NSF's directorates and offices attended each of these conferences. They held separate focus sessions for faculty on program opportunities in specific disciplines in addition to providing general information about proposal preparation and the merit review process.

NSF also hosted several informational booths at scientific meetings such as the annual meeting of the American Association for the Advancement of Science (AAAS). In addition to these larger NSF-wide organized efforts, outreach workshops were sponsored by several of the individual directorates, as well as EPSCoR, the Small Business Innovation Research (SBIR) program, and other NSF-wide programs. Finally, Program Officers frequently conduct outreach when visiting institutions or participating in scientific meetings. NSF outreach to scientists and engineers from underrepresented groups includes efforts such as workshops for tribal colleges and minority-serving institutions, including historically black colleges and universities.

D. Time to Decision (Proposal Dwell Time)

It is important for applicants to receive a timely funding decision. The Foundation's FY 2009 GPRA performance goal calls for informing at least 70 percent of PIs of funding decisions (i.e., award or decline) within six months of deadline, target date, or proposal receipt date, whichever is later. The NSF dwell time performance measure was suspended for the second through the fourth quarters of FY 2009 to delay processing proposals that were declined due to lack of funding so that some of these proposals could be funded with ARRA allocation. The percentage of proposals meeting the dwell time goal during the first quarter was 89 percent. The percentage of proposals meeting the dwell time goal during FY 2009 was 61 percent.

Figure 7
Proposal Dwell Time
Percentage of Proposals Processed Within 6 Months

2002	2003	2004	2005	2006	2007	2008	2009
74%	77%	77%	76%	78%	77%	78%	61%

Source: NSF Enterprise Information System 10/2/09

E. Data on Research Grants

The purpose of this section is to provide data on what is referred to as "research grants." The term research grant is used by NSF to represent what could be considered a typical research award, particularly with respect to the award size. Education research grants are included in this category. Excluded are large awards such as centers and facilities, equipment and instrumentation grants, grants for conferences and symposia, grants in the Small Business Innovation Research program, Small Grants for Exploratory Research, Early-concept Grants for Exploratory Research, Grants for Rapid Response Research, and education and training grants.

E1. Research Proposal, Grant, & Funding Rate Trends

Figure 8 provides the proposal, grant, and funding rate trends for NSF research grants. The ARRA allocation allowed NSF to increase significantly the funding rate in FY 2009 to 28 percent. The Foundation awarded 10,011 research grants in FY 2009 (6,346 from the FY 2009 Omnibus and 3,665 from ARRA).

Figure 8
Research Grant Proposal, Grant & Funding Rate Trends

	2002	2003	2004	2005	2006	2007	2008	2009
Proposals	25,241	28,676	31,553	31,574	31,514	33,705	33,643	35,609
Awards	6,722	6,846	6,509	6,258	6,708	7,415	6,999	10,011
Omnibus								6,346
ARRA								3,665
Funding Rate	27%	24%	21%	20%	21%	22%	21%	28%

Source: NSF Enterprise Information System 10/2/09

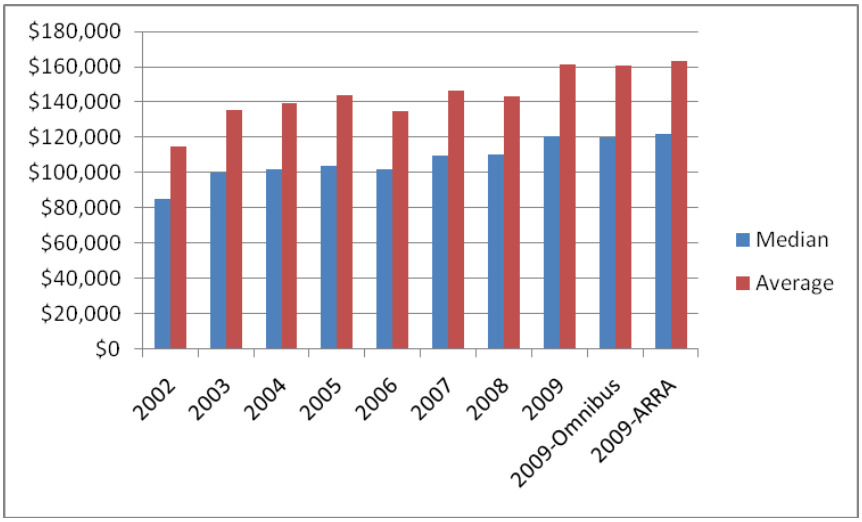
Figure 2 provides data on all NSF proposals and awards.

E2. Research Grant Size and Duration

Adequate award size and duration are important for enabling science of the highest quality and ensuring that proposed work can be accomplished as planned. Larger award size and longer award duration may also permit the participation of more students and allow investigators to devote a greater portion of their time to conducting research.

With the ARRA allocation, NSF was able to substantially increase the annualized award amounts for research grants as indicated in **Figure 9**.

Figure 9
Annualized Award Amounts for Research Grants



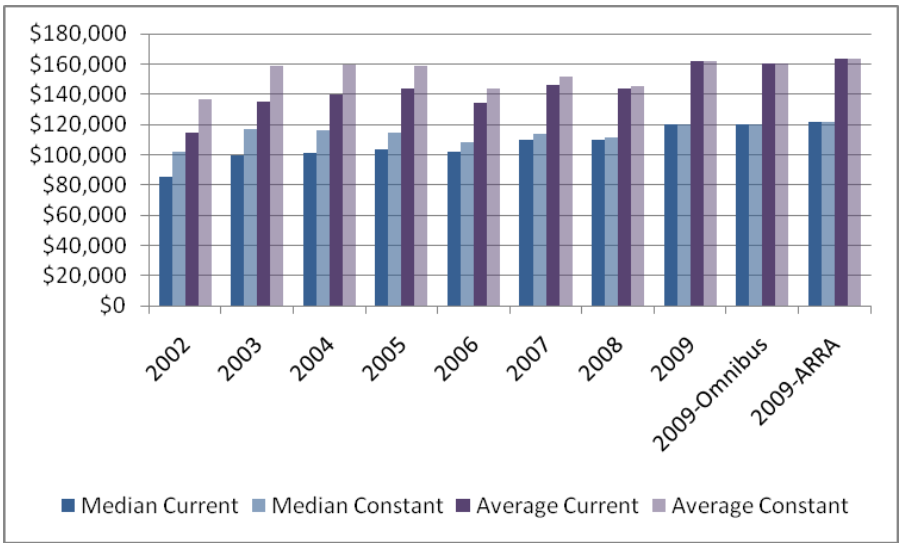
Source: NSF Enterprise Information System 10/2/09

Data on award size and duration organized by NSF directorate for the last five years are presented in **Appendix 5**.

As indicated in **Figure 10,** the average annual award size has increase by 41 percent from FY 2002 to FY 2009, while the average award size in constant dollars[7] has risen by 18 percent. It should be noted that there was a significant increase in average award size in FY 2009 made possible by the ARRA allocation. NSF may not be able to sustain the increase in future years.

[7] Constant dollars were calculated with the Gross Domestic Product (GDP) Deflator, which is the GDP (chained) Price Index. The deflator is updated by the Office of Management and Budget in the President's Budget and is based on the U.S. Government Fiscal Year, which begins on October 1 and ends on September 30. For this chart, the FY 2009 is the reference year (one FY 2009 dollar equals one constant dollar). This GDP deflator can be used from 1940, up to estimates through 2011.

Figure 10
Annualized Award Amounts for Research Grants in Constant Dollars



Source: NSF Enterprise Information System 10/2/09

As indicated in **Figure 11**, the average award duration has remained relatively constant.[8] Program officers must balance competing requirements, such as increasing award size, increasing duration of awards, and/or making more awards.

Figure 11
Average Award Duration for Research Grants

	2002	2003	2004	2005	2006	2007	2008	2009	2009 Omnibus	2009 ARRA
Duration (Years)	2.9	2.9	3.0	3.0	2.9	2.9	3.0	3.0	*2.9*	*3.1*

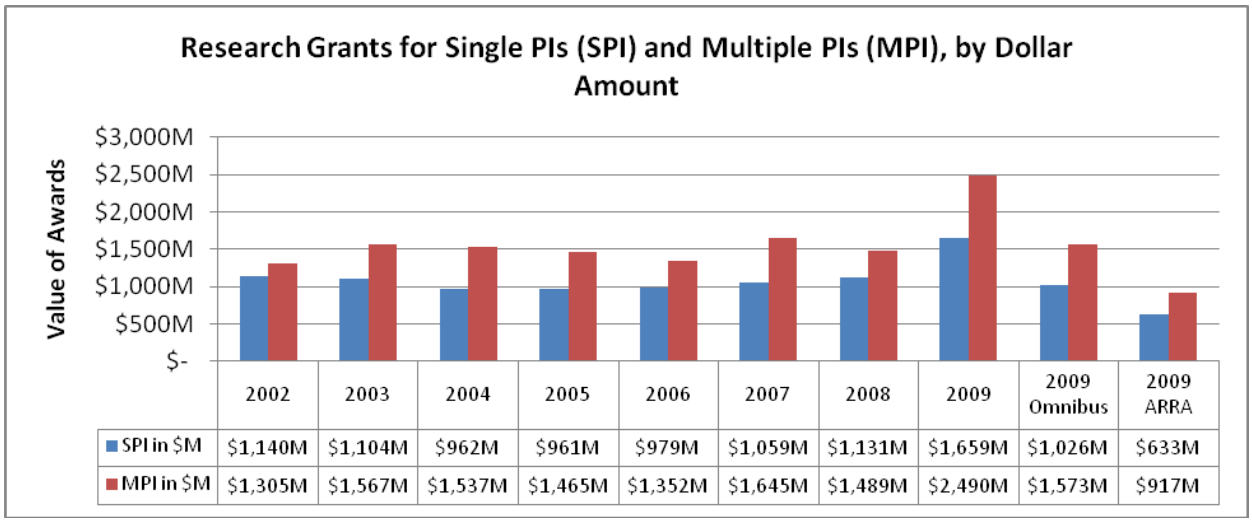
Source: NSF Enterprise Information System 10/2/09

E3. Number of Investigators per Research Grant

Figure 12 shows the number of research grants made to single PIs (SPI) compared to the number of research grants to projects with multiple PIs (MPI). The number of SPI grants remains greater than the number of MPI grants, with the gap between these two categories of awards varying over time.

[8] Although the number of years is rounded to one decimal place, the variations do not indicate significant changes since 0.1 years represents only about five weeks. In addition, this duration rate is the initial duration for new awards made in FY 2009. The rate does not take into account no-cost extensions.

Figure 12
Research Grants to Single PIs (SPI) & Multiple PIs (MPI), by Number of Awards

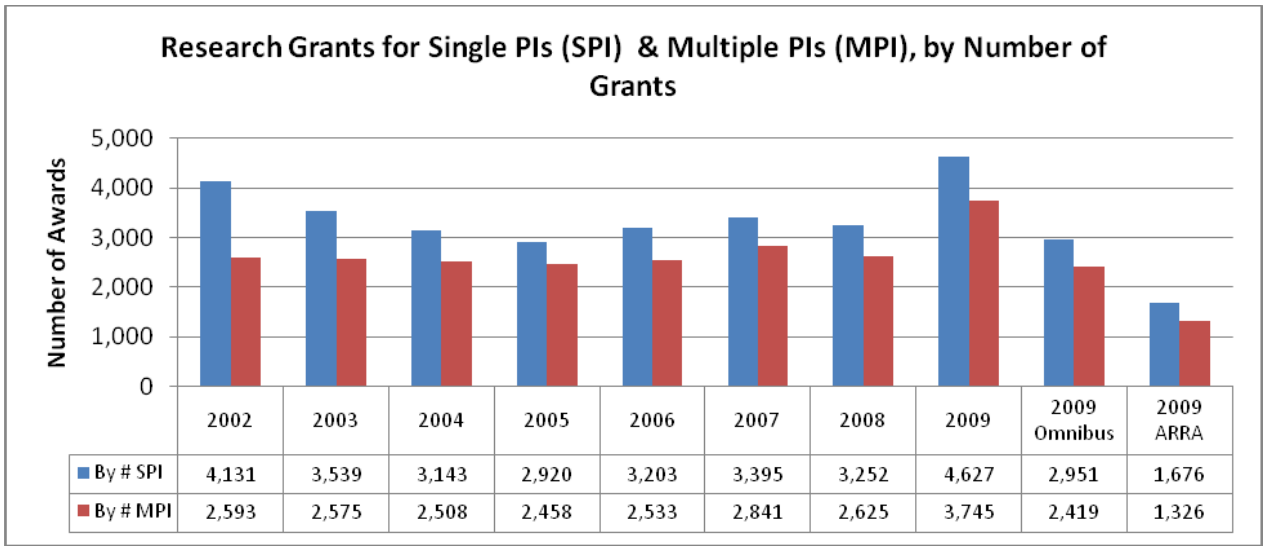


	2002	2003	2004	2005	2006	2007	2008	2009	2009 Omnibus	2009 ARRA
SPI in $M	$1,140M	$1,104M	$962M	$961M	$979M	$1,059M	$1,131M	$1,659M	$1,026M	$633M
MPI in $M	$1,305M	$1,567M	$1,537M	$1,465M	$1,352M	$1,645M	$1,489M	$2,490M	$1,573M	$917M

Source: NSF Enterprise Information System 10/2/09.

In addition, **Figure 13** indicates the total amount of funds awarded to SPI research grants in comparison to the amount of funds awarded to MPI research grants.

Figure 13
Research Grants for Single PIs (SPI) & Multiple PIs (MPI), by Dollar Amount

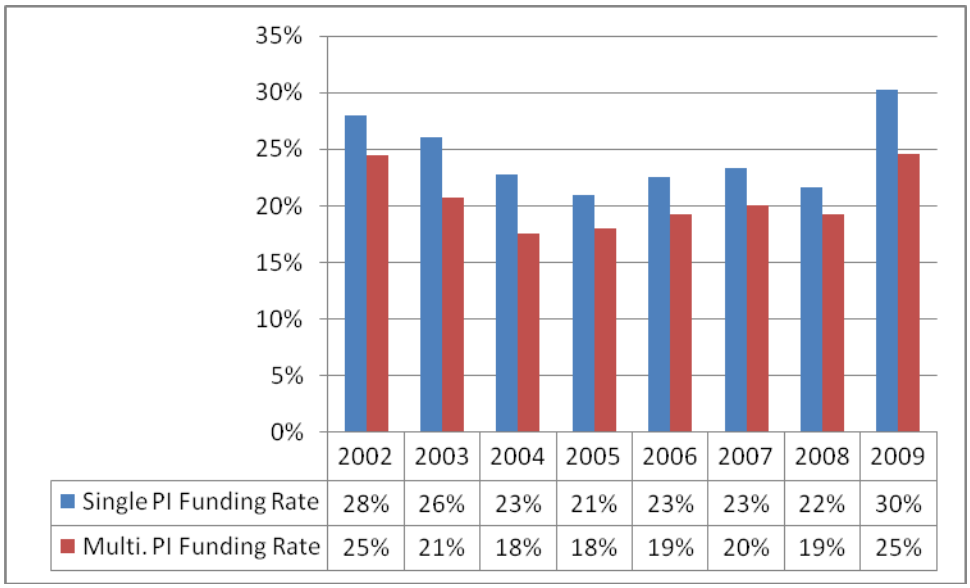


	2002	2003	2004	2005	2006	2007	2008	2009	2009 Omnibus	2009 ARRA
By # SPI	4,131	3,539	3,143	2,920	3,203	3,395	3,252	4,627	2,951	1,676
By # MPI	2,593	2,575	2,508	2,458	2,533	2,841	2,625	3,745	2,419	1,326

Source: NSF Enterprise Information System 10/2/09.

Figure 14 indicates the funding rates for SPI and MPI research proposals. The difference between the SPI and MPI funding rate has varied over the last eight years, but the SPI funding rate has been consistently higher.

Figure 14
Funding Rates for Single-PI & Multiple-PI Research Proposals



	2002	2003	2004	2005	2006	2007	2008	2009
Single PI Funding Rate	28%	26%	23%	21%	23%	23%	22%	30%
Multi. PI Funding Rate	25%	21%	18%	18%	19%	20%	19%	25%

Source: NSF Enterprise Information System 10/2/09.

E4. Number of Research Grants per PI

Figure 15 indicates the average number of active research grants per PI during the indicated time period. These percentages have remained relatively unchanged from previous years.

Figure 15
Number of Grants per PI

Fiscal Years	One	Two	Three	Four or More
2007-2009	81%	15%	3%	1%
2007-2009, Excluding ARRA	83%	13%	3%	1%

Source: NSF Enterprise Information System 10/2/09
Percentages may not sum to 100 due to rounding.

E5. Number of People Supported on Research Grants

Figure 16 provides the number of graduate students, postdoctoral associates, and senior personnel supported on NSF research grants awarded in FY 2009. These data were extracted from the budget details of research grants active in the year indicated.

Figure 16
Number of People Supported on NSF Research Grants, by Recipient Type

	2002	2003	2004	2005	2006	2007	2008	2009	*2009 Omni-bus*	*2009 ARRA*	% Change, 2002 - 2009
Senior Personnel Supported	18,643	19,864	21,711	22,255	23,186	26,176	26,494	33,536	*24,289*	*9,247*	80%
Postdocs Supported	4,320	4,629	4,399	4,068	4,023	4,034	3,909	5,580	*3,941*	*1,639*	29%
Graduate Students Supported	19,303	20,384	21,105	20,442	20,949	22,777	22,936	33,371	*22,592*	*10,779*	73%

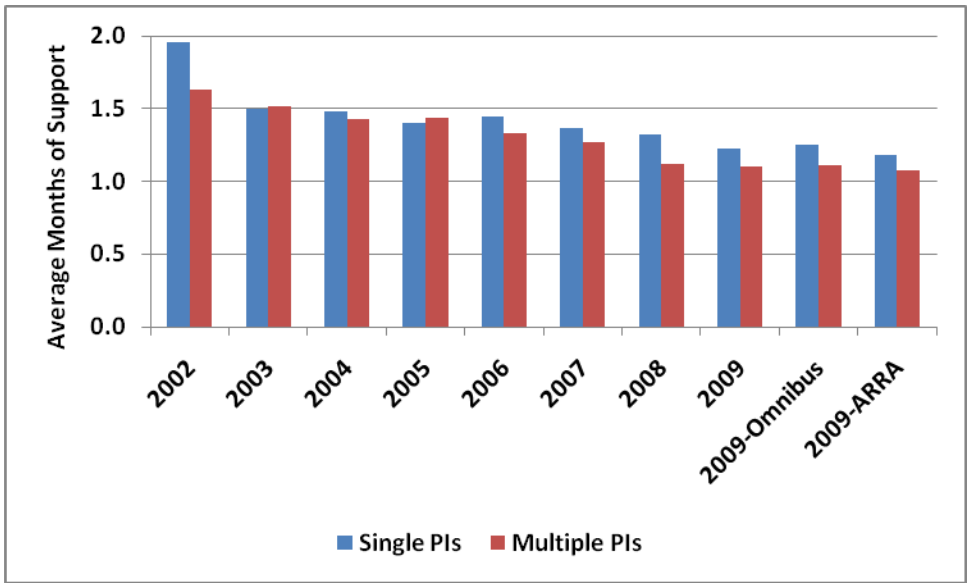
Source: NSF Enterprise Information System 10/2/09

Appendix 7 provides data on the estimated number of individuals involved in NSF activities supported by all NSF active awards, including senior researchers, postdoctoral associates, teachers, and students across all educational levels.

E6. Average Number of Months of Salary Support for Single- & Multiple-PI Research Grants

Figure 17 indicates the average number of months of salary support per individual on SPI and MPI research grants. Months of salary support are for PIs and Co-PIs only. Since FY 2002, the average number of months of support has generally decreased for both single and multiple PIs. Multiple PIs consistently averaged fewer months of support than single PIs (see **Appendix 6** for directorate or office level data on months of support).

Figure 17
Average Number of Months of Salary Support for Single- & Multiple-PI Research Grants

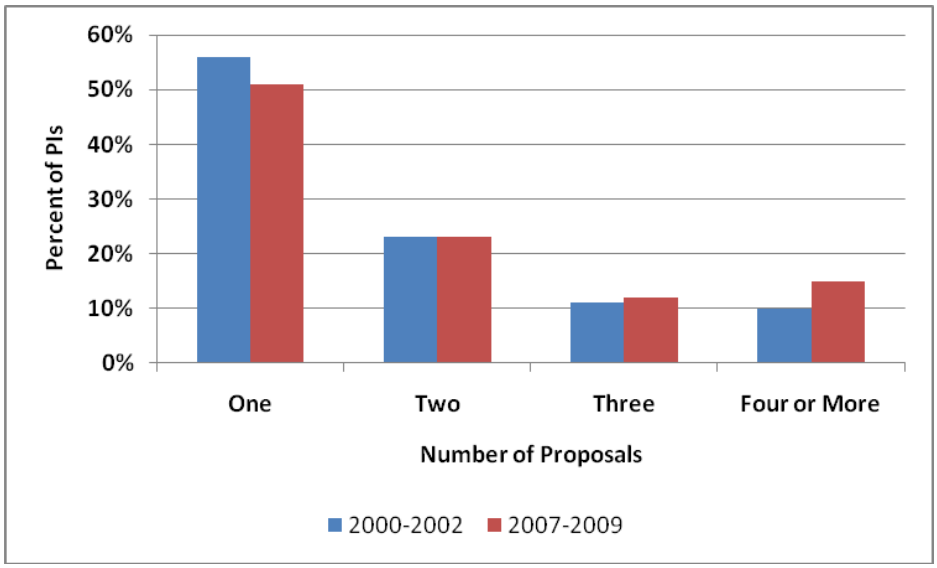


Source: NSF Enterprise Information System 10/2/09

E7. Investigator Submission and Funding Rates

Figure 18 shows that there is an increase in the percentage of investigators submitting multiple proposals during the interval FY 2007-2009 over FY 2000-2002.

Figure 18
Distribution of Number of Research Proposal Submissions per Award

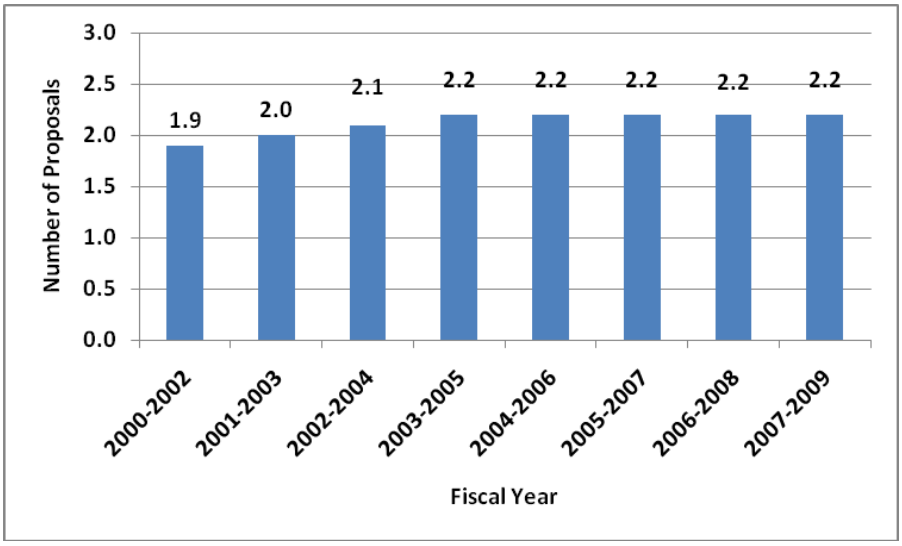


Source: NSF Enterprise Information System 10/2/09

Figure 19 shows that on average the number of proposals an investigator submits before receiving an award has stayed constant at 2.2 proposals for the past six years. This average is calculated across all PIs, including both new and previous PIs. **Appendix 8**

provides a directorate level breakout of the average number of research proposals per PI before receiving one award.

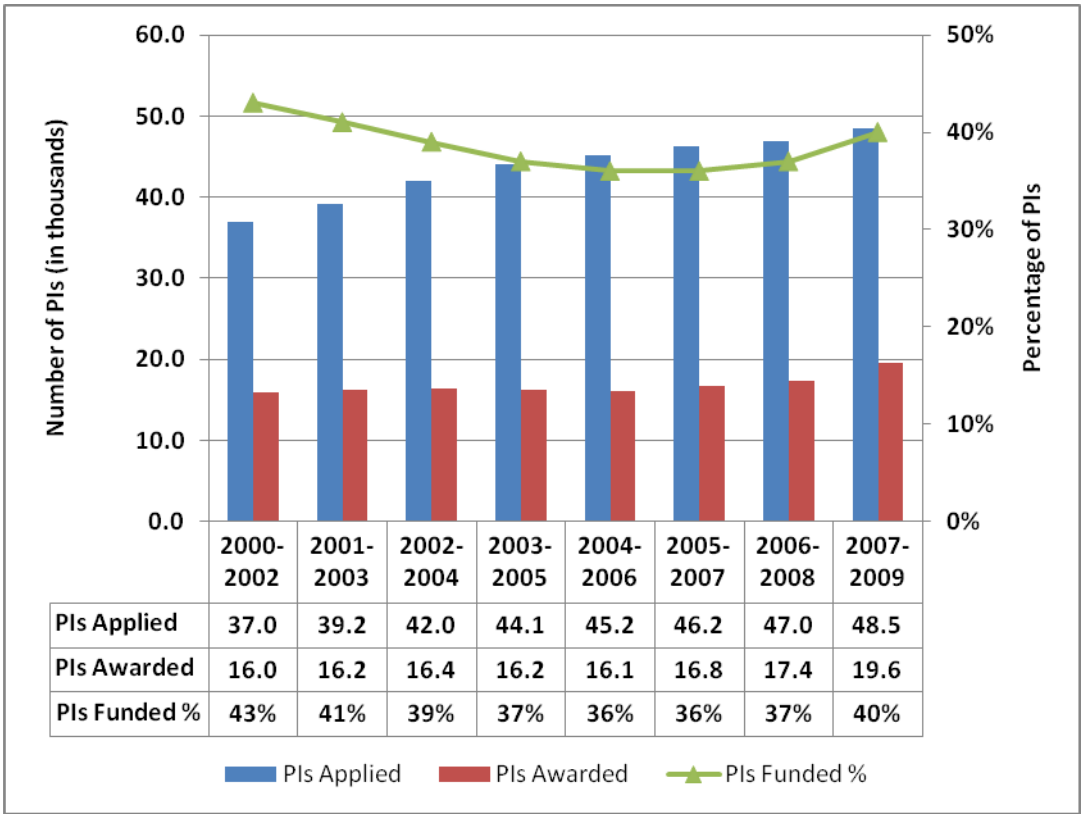
Figure 19
Average Number of Research Proposals per PI before Receiving One Award



Source: NSF Enterprise Information System 10/2/09

Figure 20 provides the funding rate for investigators (the number of investigators receiving a grant divided by the number of investigators submitting proposals).

Figure 20
NSF PI Funding Rates for Research Grants



	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009
PIs Applied	37.0	39.2	42.0	44.1	45.2	46.2	47.0	48.5
PIs Awarded	16.0	16.2	16.4	16.2	16.1	16.8	17.4	19.6
PIs Funded %	43%	41%	39%	37%	36%	36%	37%	40%

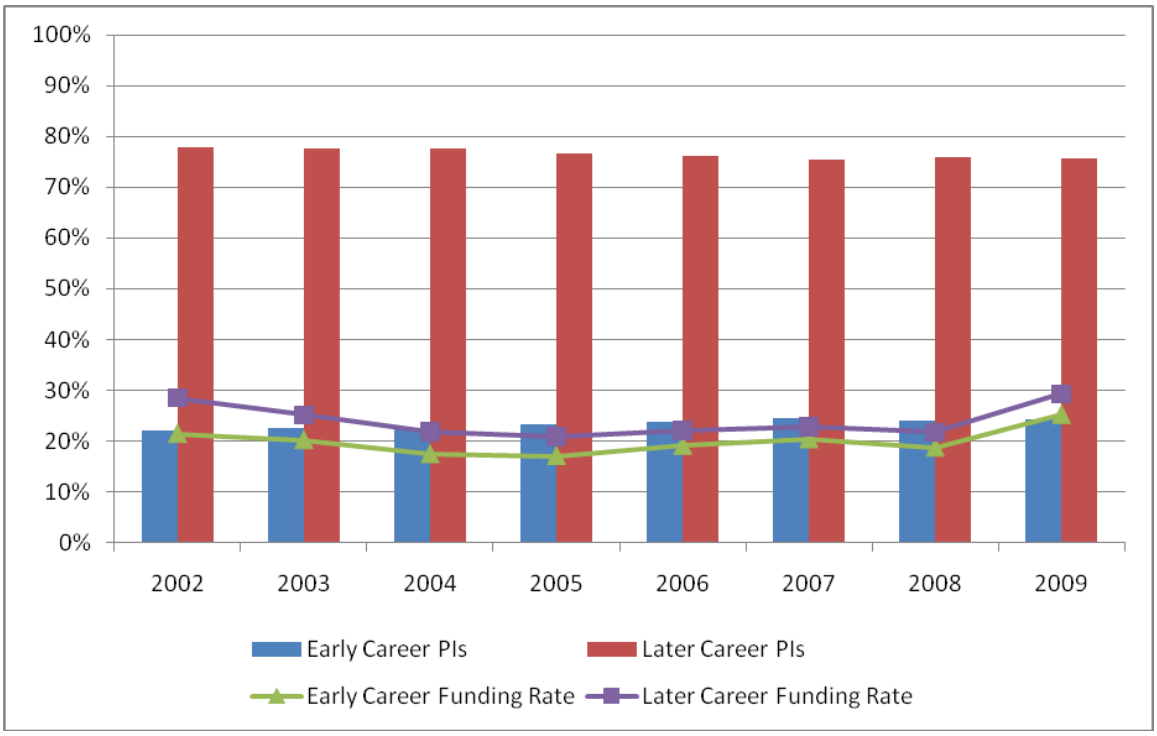
Source: NSF Enterprise Information System 10/2/09

E8. Early and Later Career PIs

Figure 21 indicates the percentage of NSF PIs that are in the early or later stage of their career. An early career PI is defined as someone within seven years of receiving their last degree at the time of the award. For the purposes of this report, PIs who received their last degree more than seven years before the time of their first NSF award are considered later career PIs.

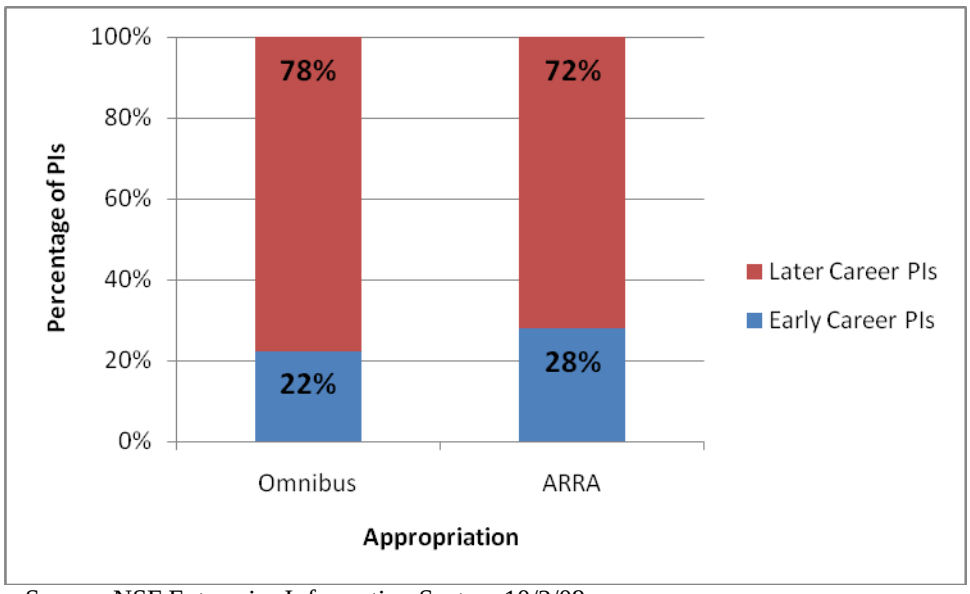
Since FY 2002, the percentage of early career PIs has remained relatively constant at about 22 percent and the percentage of later career PIs has also remained relatively constant at about 78 percent. This figure shows that the funding rates for early and later career PIs, which tend to shift in tandem. **Figure 22** shows the percentage of PIs in early or later stage of career as they relate to FY 2009 Omnibus and ARRA appropriations.

Figure 21
Percentage of PIs in Early & Later Stages of Career and Research Grant Funding Rates



Source: NSF Enterprise Information System 10/2/09

Figure 22
Percentage of PIs in Early and Later Stage of Career



Source: NSF Enterprise Information System 10/2/09

V. The NSF Merit Review Process

A. Merit Review Criteria

In FY 1998, the National Science Board approved the use of the two current NSF merit review criteria, and, in FY 2007, modified the criteria to promote potentially transformative research. The two criteria now in effect are:

Intellectual Merit. What is the intellectual merit of the proposed activity? How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

Broader Impacts. What are the broader impacts of the proposed activity? How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Careful consideration is also given to the following in making funding decisions: 1) *Integration of Research and Education* and 2) *Integrating Diversity into NSF Programs, Projects, and Activities*, as is indicated in the *Grant Proposal Guide*[9]**.** Programs may have additional review criteria specific to the goals and objectives of the program. All relevant review criteria are described in the program announcement or solicitation.

Effective October 1, 2002, NSF returned without review proposals that failed to separately address both merit review criteria within the Project Summary. The number of proposals returned without review for failing to address both NSB merit review criteria had been steadily decreasing since 2003; FY 2008 marked a departure from that trend, with a slight increase in the number of proposals returned without review for failing to address both merit review criteria. This trend continued in FY 2009.

Figure 23
Proposals Returned Without Review for Failing to Address both Merit Review Criteria

Fiscal Year	2003	2004	2005	2006	2007	2008	2009
Number of Proposals	276	236	176	134	117	124	147
Percent of all Proposals Decisions	0.69%	0.54%	0.42%	0.32%	0.26%	0.28%	0.33%

Source: NSF Enterprise Information System 10/2/09

[9]The National Science Foundation *Grant Proposal Guide* can be accessed online at: http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_index.jsp.

B. Transformative Research

The March 2007 NSB report *Enhancing Support of Transformative Research at the National Science Foundatio*n (NSB 07-32) has been instrumental in informing NSF's efforts to promote and support potentially transformative research. The statement of the Intellectual Merit review criteria was modified effective January 5, 2008 to reference explicitly transformative research. An Important Notice No. 130 was sent on September 24, 2007 from the NSF Director to presidents of universities and colleges and heads of other NSF grantee organizations to inform the community of the changes in the merit review criteria and NSF's effort to promote and support potentially transformative research.

All NSF programs encourage and support potentially transformative research proposals. This attention to promoting potentially transformative research proposals has been increased through efforts such as:

- **Focus on Identifying Potentially Transformative Research**. Through discussions and training, NSF program officers and reviewers have an increased focus on identifying potentially transformative research. For example, in the multi-day program manager seminar for all new program officers, there are sessions on approaches to promote and identify potentially transformative research. Another example is the attention given to identifying potentially transformative research in the orientation session for review panels.

- **Modifications to Review Process**. Several programs are experimenting with modifications in the review process to help identify potentially transformative research proposals. For example, in addition to a panel there may be a "shadow panel." The shadow panel has the primary purpose of identifying potentially transformative research proposals. The results from both the panels then inform the program officers in making their funding recommendations. Another modification to the usual panel review process is called the "second-dimension" approach. With this approach, a panel provides an assessment of potentially transformative research of the proposals. This assessment provides a 'second-dimension' in that it is independent of the panel's comprehensive review of the proposal.

NSF also has several mechanisms particularly developed to promote the support of potentially transformative research. These include EArly-Concept Grants for Exploratory Research (EAGER), Creativity Extensions, and Accomplishment-Based Renewals. See **Appendices 10 and 17** for a description of these mechanisms.

In addition to its existing programs and mechanisms indicated above, NSF has been experimenting with innovative approaches to promote and identify potentially transformative research. These approaches include, for example:

- **Emerging Transformational Areas of Research**. NSF uses different mechanisms to identify emerging transformational areas of research and innovation. For example, the Office of Emerging Frontiers in Research and

Innovation (EFRI) in the Directorate for Engineering annually solicits ideas for transformational areas through a Dear Colleague letter to the community as well as through workshops, professional society meetings, and advisory committees. Based on this input, EFRI prioritizes the topics and calls for proposals in the selected areas through its program solicitation.

- **Ideas Factory Sandpit**. The Sandpit process has some unique features. Prior to the workshop, called a Sandpit, "mentors" are selected and serve as advisors during the Sandpit. The Sandpit participants identify grand challenges in the selected research area, and then develop approaches to address those challenges. Projects are selected for funding from among those emerging from the Sandpit. The "Ideas Factory Sandpit" on the topic of Synthetic Biology was conducted by NSF, and future Sandpits are anticipated.

- **Joint Funding**. Some directorates, offices, or divisions provide joint support for potentially transformative research proposals that are recommended for funding by Program Officers. This joint funding emphasizes the importance of supporting potentially transformative research, while reducing the impact on program budgets of funding these proposals.

NSF continues to experiment with approaches to promote and support potentially transformative research. In fact, in the FY2010 NSF budget request, each research division is provided funds explicitly to explore methodologies that help support transformative research.

C. Description of NSF Merit Review Process

The NSF merit review process includes the steps listed below and is depicted in **Figure 24**:

- The proposal arrives electronically and is assigned to the appropriate program(s) for review. Some programs also include preliminary proposals as part of the application process. See **Appendix 2** for more information about preliminary proposals. Proposals that do not comply to NSF regulations, as stated in the *Grant Proposal Guide*, may be returned without review.

- The review process is overseen by a division director, or other appropriate NSF official.

- The program officer (or team of program officers) is responsible for the following:

    - Reviewing the proposal and determining the appropriate level of review. NOTE: Some proposals do not require external review. These include, for example, EAGERs, RAPIDs and proposals for small conferences, workshops, or symposia. See **Appendix 10** for more information about EAGER and RAPID proposals.

- Selecting reviewers and panel members. Selection may be based on program officer's knowledge, references listed in the proposal, individuals cited in recent publications or relevant journals, presentations at professional meetings, reviewer recommendations, bibliographic and citation databases, or proposal author's suggestions.

- Checking for conflicts of interest. In addition to checking proposals and selecting reviewers with no apparent potential conflicts, NSF staff provides reviewers guidance and instruct them how to identify and declare potential conflicts-of-interest. All NSF program officers receive annual conflict of interest training.

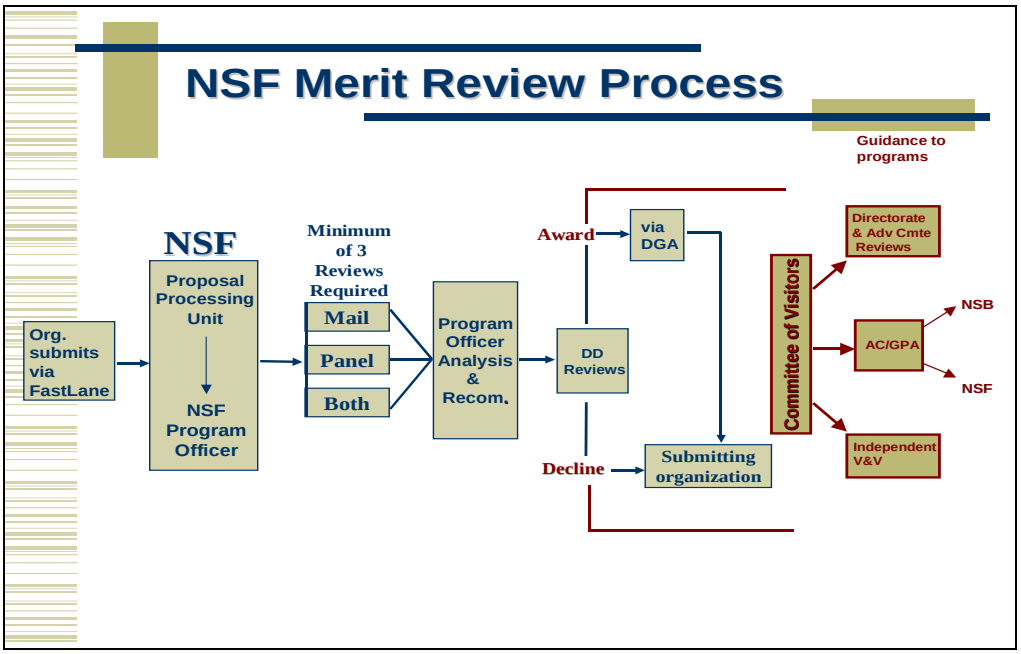
- Synthesizing the comments of the reviewers and panel (if reviewed by a panel), as provided in the individual reviewer analyses and panel summaries.

- Recommending action to award or decline the proposal, taking into account external reviews, panel discussion, and other factors such as portfolio balance and amount of funding available.

The division director, or other appropriate NSF official, reviews all program officer recommendations. Large awards may receive additional review. The Director's Review Board examines award recommendations with an average annual award amount of 2.5 percent or more of the awarding division's annual budget. The National Science Board (NSB) reviews recommended awards with an annual award amount of one percent or more of the awarding Directorate's prior year current plan or $3,000,000, whichever is greater.[10] In FY 2009, NSB approved 17 funding items that included 22 awards, one extension of an award termination date and increase in funding authorization, and one extension of a cooperative agreement. Once approved, a grants and agreements officer in the Office of Budget, Finance, and Award Management performs an administrative review of award recommendations.

[10] Other items requiring NSB prior approval include new programs, major construction projects that meet certain specifications, as well as programs and awards involving policy issues.

Figure 24
Diagram of the NSF Merit Review Process



Also as indicated in **Figure 24,** the Foundation has several oversight and advisory mechanisms relevant to the merit review process:

- An external Committee of Visitors (COV), whose membership is comprised of scientists, engineers, and educators, assesses each major NSF program every 3-5 years. COVs examine the integrity and efficiency of merit review processes and the results from the programmatic investments.

- NSF directorates and offices have advisory committees (comprised of scientists, engineers, and educators). One of the tasks of these advisory committees is to review COV reports and staff responses in order to provide guidance to the Foundation. The COV reports and NSF responses are publically available on the NSF website.

- An external contractor performs an independent verification and validation of the programmatic performance measurements, which include aspects of the merit review process.

- The Program Assessment Rating Tool (PART), developed by the Office of Management and Budget, is used to assess program performance of federal agencies in four areas: Program Purpose and Design, Strategic Planning, Program Management, and Program Results/Accountability.

- The Government Performance and Results Act of 1993 (GPRA) was established to provide strategic planning and performance measurement in the Federal Government. The NSF-wide Advisory Committee for GPRA Performance Assessment (AC/GPA), a committee of external experts convened yearly to assess programmatic results,

evaluates the Foundation's portfolios and their linkages to strategic outcome goals. The AC/GPA uses Committee of Visitors reports, internal and external directorate assessments of particular programs, investigator project reports, and directorate/division collections of outstanding accomplishments from awards in order to perform the evaluation.

- One role of the NSB's Audit and Oversight Committee is to review the findings presented by the AC/GPA.

Additional information about COVs, NSF Advisory Committees, and AC/GPA is provided in **Appendix 11**.

D. Program Officer Award/Decline Recommendations

As noted above, the narrative comments and summary ratings provided by external reviewers are essential inputs for program officers who formulate award and decline recommendations to NSF senior management.

NSF program officers are experts themselves in the scientific areas that they manage. They have advanced educational training (e.g., a Ph.D. or equivalent credentials) in science or engineering and relevant experience in research, education, and/or administration. They are expected to produce and manage a balanced portfolio of awards that addresses a variety of considerations and objectives. When making funding recommendations, in addition to information contained in the external proposal reviews, NSF program officers evaluate proposals in the larger context of their overall portfolio and consider issues such as:

- Support for potentially transformative advances in a field;
- Novel approaches to significant research questions;
- Capacity building in a new and promising research area;
- Potential impact on the development of human resources and infrastructure;
- NSF core strategies, such as 1) the integration of research and education and 2) broadening participation;
- Achievement of special program objectives and initiatives;
- Other available funding sources; and
- Geographic distribution.

E. Review Information to Proposer and Appeal Process

Proposers receive notification of the award/decline decision, copies of all reviews used in the decision with reviewer-identifying information redacted, and a copy of the panel summary (if panel review was conducted). A "context statement" is also sent that explains the broader context under which any given proposal was reviewed. Program officers are also expected to provide additional communication (either in writing or by phone) to proposers in the case of a decline recommendation if the basis for the decision is not provided in the panel summary.

If, after receiving the reviews and other documentation of the decision, an unsuccessful proposer would like additional information, he or she may ask the program officer for further clarification. If, after considering the additional information, the applicant is not satisfied that the proposal was fairly handled and reasonably reviewed, he or she may request formal reconsideration. Information about the reconsideration process is included in all decline notifications.[11] A reconsideration request can be based on the applicant's perception of procedural errors or on disagreements over the substantive issues dealt with by reviewers. If the relevant NSF assistant director or office director upholds the original action, the applicant's institution may request a second reconsideration from the Foundation's Deputy Director.

NSF declines approximately 30,000 proposals a year but receives only 30-50 annual requests for formal reconsideration. The number of requests for formal reconsideration and resulting decisions at both the Assistant Director and Director levels from FY 2002 through FY 2009 are displayed in **Appendix 12**. NSF received 21 formal reconsideration requests in FY 2009; 17 decline decisions were upheld and 4 were reversed.

F. Methods of External Review

The Foundation's merit review process relies on extensive use of knowledgeable experts from outside NSF. As stated in the *Grant Proposal Guide* (GPG), proposals usually receive at least three external reviews. Under certain circumstances the requirement for external review can be waived.[12]

NSF programs obtain external peer review by three principal methods: (1) "mail-only," (2) "panel-only," and (3) "mail-plus-panel" review.

In the "mail-only" review method, reviewers are sent proposals and asked to submit written comments to NSF through FastLane, NSF's web-based system for electronic proposal submission and review.

"Panel-only" refers to the process of soliciting reviews from panelists who convene to discuss their reviews and provide advice to the program officer.

Many proposals submitted to NSF are reviewed using some combination of these two processes. Those programs that employ the "mail + panel" review process have developed several different configurations, such as:

- A reviewer submits a mail review and also serves as a panelist.
- A reviewer submits a mail review, but does not serve on the panel.

[11] Please note that certain types of proposals are not eligible for reconsideration. See NSF *Grant Proposal Guide* (GPG) at http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_4.jsp#IVD

[12] Exemptions that program officers may choose to exercise, for example, include proposals for EAGER and RAPID proposals and certain categories of workshop and symposia proposals. See **Appendix 9** for more information about EAGER and RAPID proposals.

- A reviewer does not submit a mail review, but participates as a panelist. Panelists discuss the proposal and mail reviews to formulate advice for the program officer.

The total numbers of reviews and the average numbers of reviews per proposal obtained by the three different review methods are presented in **Figure 25**.

Figure 25
Reviews per Proposal, FY 2009

	All Methods	Mail + Panel	Mail-Only	Panel-Only
Reviews	241,712	93,661	14,227	133,824
Proposals	43,467	14,262	3,370	25,835
Rev/Prop	5.6	6.6	4.2	5.2

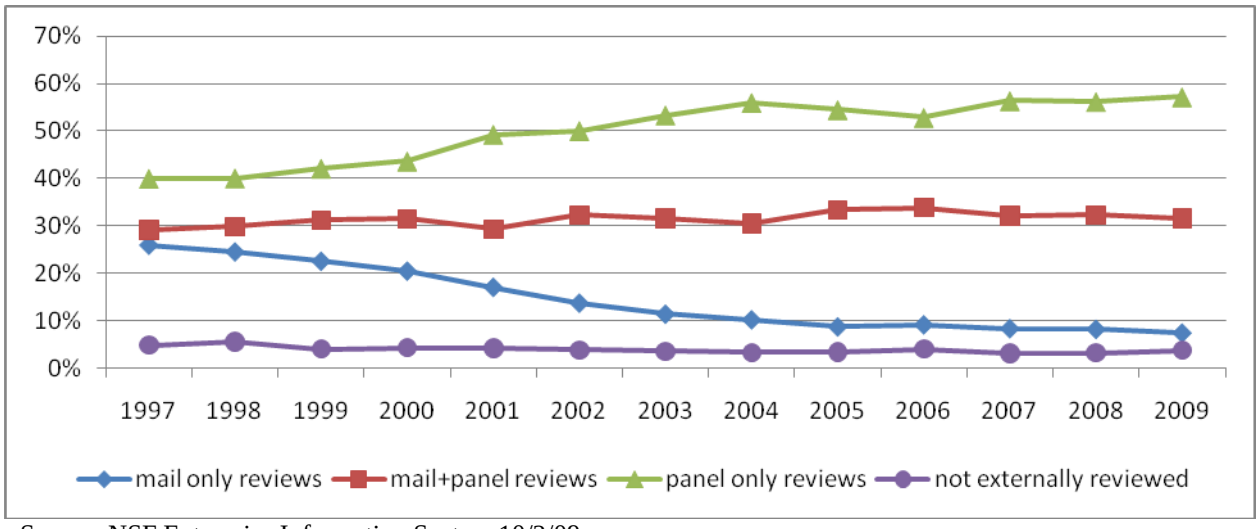
Source: NSF Enterprise Information System 10/2/09

The mail-plus-panel method had the highest number of reviews per proposal, averaging nearly seven, while the mail-only method averaged around four. Directorate-level data for FY 2009 are presented in **Appendix 13.**

In addition, site visits (on-site and reverse-site) by NSF staff and external members of the community are often used to review proposals for facilities and centers. NSF program officers are given discretion in the specific use of review methods, subject to approval by the division director or other NSF official.

The use of various review methods has changed markedly over time, as shown in **Figure 26.** The data for **Figure 26** are provided in **Appendix 14** and **Appendix 15** provides data on review methods by directorate and office.

Figure 26
FY 1997-2009 Trend, NSF Review Method



Source: NSF Enterprise Information System 10/2/09

There are a number of reasons for the trend away from mail-review only. Panels allow reviewers to discuss and compare proposals. Panels tend to be used for programs that

have deadlines and target dates, as opposed to unrestricted submission windows. The panel review process has the advantage that different perspectives can be discussed and integrated if appropriate. Also, using panels in the review process tends to reduce proposal processing time (time-to-decision), compared to mail-only reviews. For example, in FY 2009, 62 percent of all proposals reviewed by panel-only were processed within six months, compared to 60 percent for mail + panel and 48 percent for mail-only.

A chief advantage of mail review is that the expertise of the reviewers can be more precisely matched to the proposal. The mail + panel review process is used frequently because it combines the in-depth expertise of mail review with the comparative analysis of panel review.

Some programs use "virtual panels." In virtual panels, panelists participate from their offices or homes and interact using NSF's Interactive Panel System (IPS), accompanied by a teleconference. Around 97 percent of panels, whether they assemble at NSF, offsite at a common location, or virtually, are using IPS. A part of FastLane, IPS permits the viewing of proposals, reviews, basic panel discussions, collaboration on panel summaries, and approval of the draft panel summary through the web.

NSF's videoconferencing facilities are used by some programs to enhance the participation of panelists whose schedules do not permit them to be physically present at the time of the panel. Videoconferencing is also employed in award management and oversight for large center-type projects. The Foundation is continuing its efforts to improve web-based and electronic means of communication to contribute to the quality of the merit review and award oversight processes.

G. Data on Reviewers

The Foundation maintains a central electronic database of more than 300,000 reviewers who can potentially be drawn on to participate in mail or panel reviews. Program officers identify potential reviewers using a variety of sources including their own knowledge of the discipline, applicant suggestions, references attached to proposals, published papers, scientific citation indexes and other similar databases, and input from other reviewers.

During FY 2009, approximately 41,911 individuals served on panels, conducted a mail review for one or more proposals, or served in both functions. About 8,360 or 12 percent of these reviewers had never reviewed an NSF proposal before. The reviewers were from all 50 states in addition to the District of Columbia, Puerto Rico, Virgin Islands, and other U.S. jurisdictions. More than 5,900 reviewers were from outside of the United States by address of record. Moreover, reviewers were from a range of institutions, including two-year and four-year colleges and universities, Master's level and Ph.D.-granting universities, industry, profit and non-profit institutions, K-12 systems, informal science institutions, and government. NSF also maintains data on numbers of reviewers from each state, territory, and country as well as by type of institution.

In FY 2009, out of a total of 41,911 distinct reviewers who returned reviews, 13,468 (32 percent) provided demographic information. Of those reporting their demographic data, 4,933 (37 percent) indicated they are members of a group underrepresented in science

and engineering. In particular, of the reviewers who reported their demographic data, 4,091 (31 percent) reported female, 1,383 (10 percent) reported from an underrepresented race or ethnic minority, and 253 (2 percent) reported a disability. Of the 1,383 reviewers that reported they are from an underrepresented race or ethnic group, 781 (56 percent) reported Hispanic or Latino, 518 (37 percent) reported Black or African American, 71 (5 percent) reported American Indian or Alaskan Native, and 13 (1 percent) reported Hawaiian or Pacific Islander.

NSF has seen a modest increase in the proportion of reviewers providing demographic information. However, provision of demographic data is voluntary and the low response rate remains a challenge that the Foundation continues to address.

The NSF library continually updates its resources to help NSF staff identify reviewers. This includes the collection and sharing of potential reviewer data from associations that work with underrepresented groups in science and engineering. Frequent tutorials on finding reviewers are also available for program officers.

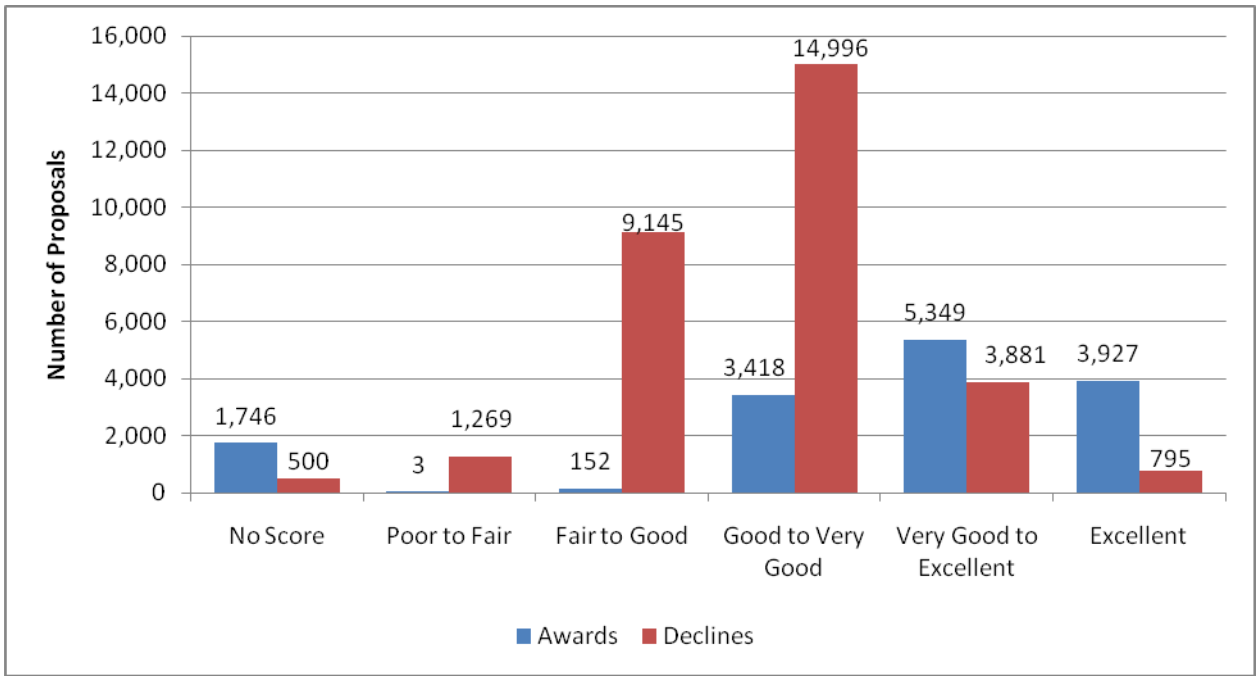
Reviewers are also identified through literature searches and professional activities such as workshops and conferences. Some NSF divisions actively solicit new reviewers through their web pages and outreach activities. To increase transparency, Chapter III.B of the *Grant Proposal Guide* describes how reviewers are selected by the NSF program officers.

Participation in the peer review process is voluntary. It brings with it increased familiarity with NSF programs, knowledge of the state of research and education nationally, and increased awareness of elements of a competitive proposal. Panelists are reimbursed for expenses, but mail reviewers receive no financial compensation. For proposals received in FY 2009, NSF requested 89,903 mail reviews, of which there were 58,636 positive responses. This 65 percent response rate in FY 2009 is similar to response rates in recent years. The response rate does vary by program.

H. Reviewer Proposal Ratings and Impact of Budget Constraints

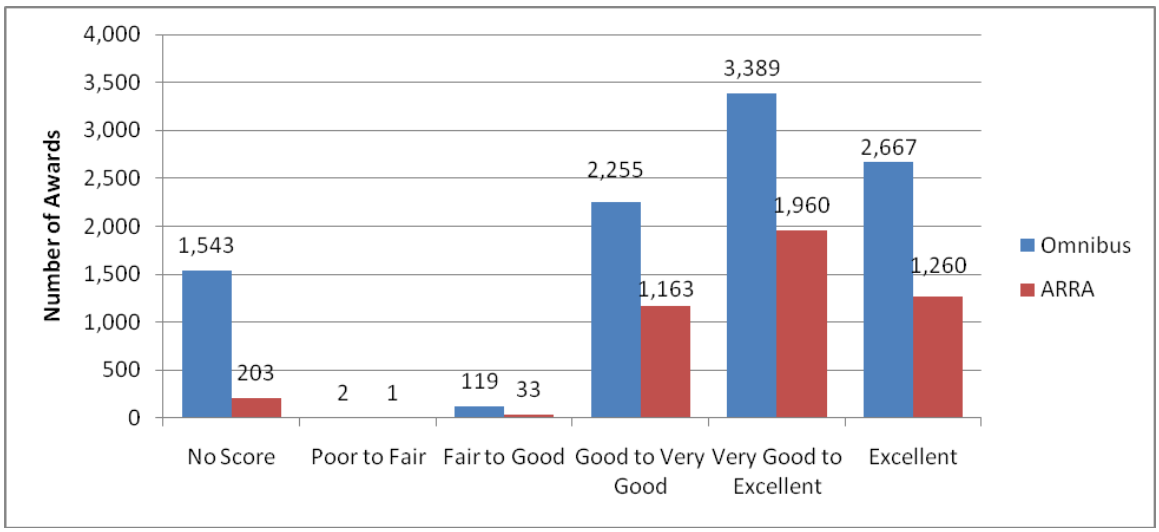
The NSF merit review system emphasizes reviewer narratives in addition to categorical ratings. The written comments provided by reviewers, the summary of panel discussions, and the expert opinions of program officers and division directors are important components of the merit review system. The distribution of average summary ratings of reviews for awarded and declined proposals is provided in **Figure 27** and **Figure 28** provides a comparison between Omnibus and ARRA in reviewer ratings for awards.

Figure 27
Distribution of Average Reviewer Ratings for Awards and Declines, FY 2009



Source: NSF Enterprise Information System 10/2/09

Figure 28
Distribution of Average Reviewer Ratings for Awards, FY 2009

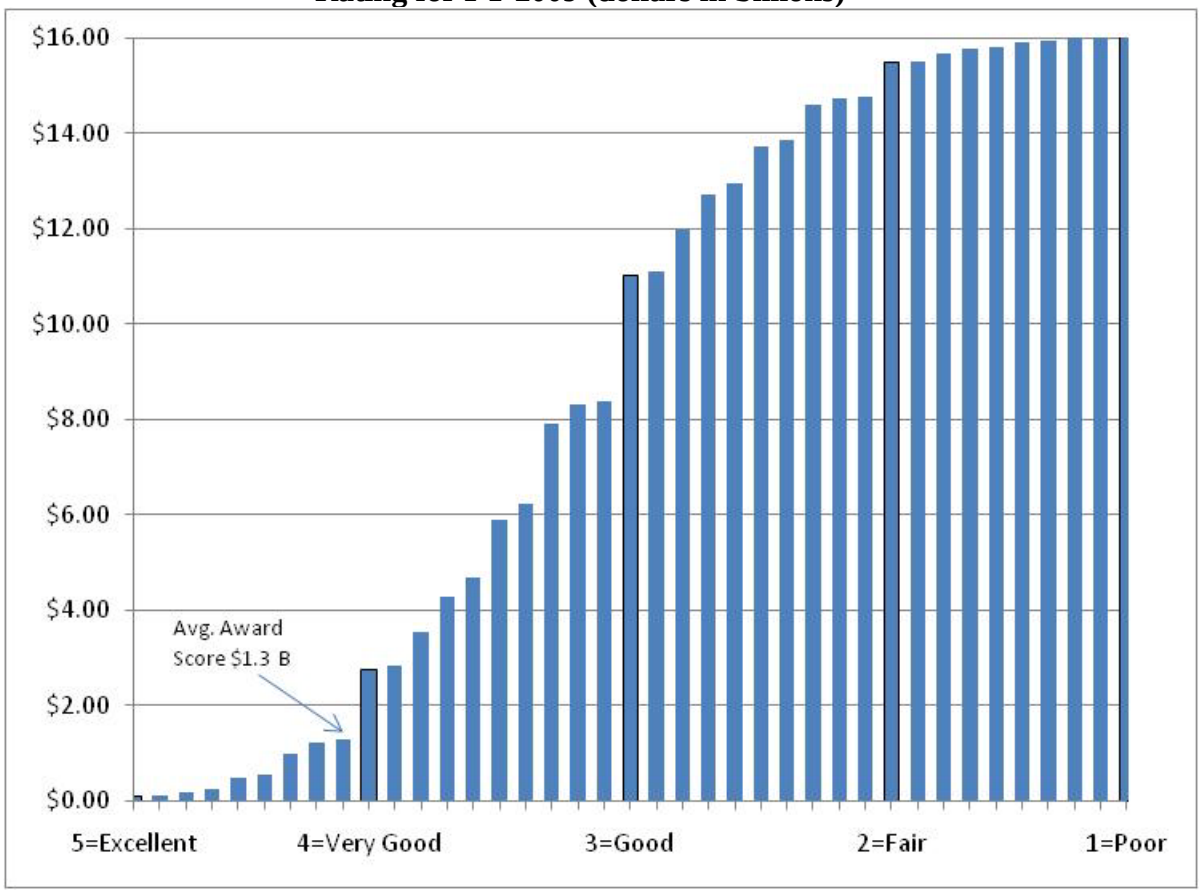


Source: NSF Enterprise Information System 10/2/09

In addition, **Appendix 16** provides average reviewer ratings by the method of review

A large number of potentially fundable proposals are declined each year. As shown in **Figure 29**, approximately $1.3 billion was requested for declined proposals that had received ratings at least as high as the average rating (4.1 out of 5.0) for all awarded proposals. In FY 2002, the ratio of awards to highly rated declines was 6.5:1; in FY 2009, that ratio was 7:1. However, in comparison, the ratio was 4:1 in FY 2008 indicating the impact of ARRA in reducing the ratio of awards to highly rated declines. These declined proposals represent a rich portfolio of unfunded opportunities, proposals that if funded may have produced substantial research and education benefits.

Figure 29
Cumulative Requested Amounts for Declined Proposals by Average Reviewer Rating for FY 2009 (dollars in billions)



Source: NSF Enterprise Information System 10/2/09

I. Program Officer Characteristics and Workload

The number of program officers increased from 520 in FY 2007 to 525 in FY 2009, a one percent increase. Program officers can be permanent NSF employees or non-permanent employees. As indicated in **Figure 30**, 49 percent are permanent program officers and 51 percent are in the non-permanent category. Some non-permanent program officers are "on loan" as "Visiting Scientists, Engineers, and Educators" (VSEEs) for up to three years from their host institutions. Others are supported through grants to the home institutions under the terms of the Intergovernmental Personnel Act (IPA). Whether they

are hired as temporary or permanent, incoming NSF program officers receive training in the merit review process.

Figure 30
Distribution of NSF Program Officers by Characteristics
As of October 1, 2009

Program Officers	Total	Percent
Total	**525**	**100%**
Gender		
Male	316	60%
Female	209	40%
Race		
Minority	119	23%
White, Non-Hispanic	406	77%
Employment		
Permanent	259	49%
Visiting Scientists, Engineers & Educators (VSEE)	52	10%
Temporary	61	12%
Intergovernmental Personnel Act (IPA)	152	29%
Intermittent	1	0%

Source: NSF Division of Human Resource Management

The number of proposals that the program officers handle has increased significantly over the last several years. In addition to the growing emphasis on interdisciplinary and cross-directorate programs, program officers are also tasked with an increasing number of programmatic activities, e.g., increased program accountability, outreach, mentoring new staff. Despite an increase in the overall number of program officers, workload concerns are still present and frequently highlighted by NSF's Committees of Visitors (see **Section V. J**).

NSF has revitalized its professional development opportunities for program staff, offering in-house courses in project management, leadership, and communication through the NSF Academy. New NSF program staff attend the NSF Program Manager Seminar, which is an orientation to NSF and the merit review process.

J. Review of Committee of Visitors Reports

NSF conducts an annual review of Committee of Visitors (COV) reports. This section summarizes the findings from the review of the 18 reports from Committee of Visitors conducted in FY 2009. For any given NSF program, COVs are conducted approximately every three years. Consequently, annual reviews do not compare COV comments over time for a particular program. However, from these annual reviews one can see areas in which COVs are identifying strengths and concerns in the NSF merit review process so that this information can be used in a formative way.

COV reports were very positive in their comments of the programs, the management of the programs, and the NSF staff. In some cases, areas for improvement were also identified. Indications of these areas are described in the following paragraphs.

Seven of the 18 COVs held in 2009 commented on the need for improvement in reviewer responses to the broader impact criterion. Although a very high percentage of reviewers (96-97%) addressed both review criteria, there was more variability in the quality of reviewer responses to the broader impact criteria. Several of the COVs commented that responses to the broader impact criterion have improved in recent years as a result of NSF outreach. COVs noted Dear Colleague letters as a particularly effective mechanism that NSF has used to educate the community of reviewers about the importance of broader impacts. COVs suggested that NSF continue to emphasize the issues to both ad hoc reviewers and panelists through outreach and written instruction.

Eight out of 18 COVs commented on the uneven quality of panel summaries and emphasized the importance of providing more detailed feed back to PIs when proposals are declined. This was considered particularly critical in the case of young investigators. It was noted that because panel summaries generally reflect consensus opinion, PIs are not aware of important elements of panel discussion and debate. There was a tendency for panel summaries for awards to be much more detailed than for declines. Although individual comments and suggestions varied, the theme was that PIs need to receive constructive information on negative decisions.

The majority of the COVs advocated for additional resources such as higher program budgets or additional staff to be allocated to the program under review. Most of the COVs commented on the workload brought on by an increase in the number of proposals submitted. Nine out of 18 COVs indicated that some programs continue to be severely understaffed. In some cases, the COV noted that staff had been added or reorganized in response to previous COV comments with a positive result.

For each COV report, NSF provides a written response in which the plans to address COV concerns are described. COV reports and the NSF responses can be found at http://www.nsf.gov/od/oia/activities/cov/

Appendices

Appendix 1

Proposals, Awards and Funding Rates by Directorate and Office

		Fiscal Year							
		2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
NSF	Proposals	35,165	40,075	43,851	41,722	42,352	44,577	44,428	45,181
	Awards	10,406	10,844	10,380	9,757	10,425	11,463	11,149	14,595
	Omnibus								9,975
	ARRA								4,620
	Funding Rate	30%	27%	24%	23%	25%	26%	25%	32%
BIO	Proposals	5,143	5,591	6,063	6,475	6,617	6,728	6,598	6,578
	Awards	1,400	1,448	1,432	1,355	1,202	1,303	1,291	1,823
	Omnibus								1,261
	ARRA								562
	Funding Rate	27%	26%	24%	21%	18%	19%	20%	28%
CSE	Proposals	4,317	5,270	6,276	5,238	4,843	5,744	5,567	5,664
	Awards	1,039	1,175	1,017	1,088	1,280	1,631	1,352	1,734
	Omnibus								1,355
	ARRA								379
	Funding Rate	24%	22%	16%	21%	26%	28%	24%	31%
EHR	Proposals	3,966	4,111	4,644	3,699	3,254	4,248	3,887	3,699
	Awards	1,044	890	925	736	824	903	1,111	1,009
	Omnibus								919
	ARRA								90
	Funding Rate	26%	22%	20%	20%	25%	21%	29%	27%
ENG	Proposals	6,883	9,076	8,994	8,692	9,423	9,574	9,643	10,611
	Awards	1,726	1,945	1,753	1,493	1,730	1,955	1,966	2,688
	Omnibus								1,771
	ARRA								917
	Funding Rate	25%	21%	19%	17%	18%	20%	20%	25%
GEO	Proposals	4,114	4,230	4,267	4,676	4,603	4,367	4,237	4,136
	Awards	1,450	1,515	1,419	1,315	1,418	1,341	1,328	1,810
	Omnibus								1,039
	ARRA								771
	Funding Rate	35%	36%	33%	28%	31%	31%	31%	44%
MPS	Proposals	5,996	6,694	7,184	7,083	7,466	7,315	7,837	7,883
	Awards	2,105	2,268	2,175	2,071	2,221	2,360	2,269	3,122
	Omnibus								2,004
	ARRA								1,118
	Funding Rate	35%	34%	30%	29%	30%	32%	29%	40%

		2002	2003	2004	2005	2006	2007	2008	2009
OCI	Proposals	223	342	220	116	130	304	500	337
	Awards	54	56	47	75	42	68	97	192
	Omnibus								97
	ARRA								95
	Funding Rate	24%	16%	21%	65%	32%	22%	19%	57%
OISE	Proposals	608	670	851	822	712	776	910	781
	Awards	334	373	386	333	319	353	357	428
	Omnibus								339
	ARRA								89
	Funding Rate	55%	56%	45%	41%	45%	45%	39%	55%
OPP	Proposals	572	557	689	816	775	1,200	864	855
	Awards	264	241	268	281	238	370	235	416
	Omnibus								113
	ARRA								303
	Funding Rate	46%	43%	39%	34%	31%	31%	27%	49%
SBE	Proposals	3,279	3,491	4,619	4,089	4,520	4,284	4,364	4,525
	Awards	931	894	939	1,004	1,144	1,143	1,126	1,337
	Omnibus								1,056
	ARRA								281
	Funding Rate	28%	26%	20%	25%	25%	27%	26%	30%
Other	Proposals	64	12	44	16	9	37	21	112
	Awards	59	12	19	6	7	36	17	36
	Omnibus								21
	ARRA								15
	Funding Rate	92%	100%	43%	38%	78%	97%	81%	32%

Source: NSF Enterprise Information System 10/2/09

The majority of the proposals included in the 'Other' category are managed by the Office of Integrated Activities (OIA). In FY 2007, management of the EPSCoR program was transferred from EHR to OIA. The following are not included in the above statistics: 7,792 Continuing Grant Increments, 4,591 Supplements, and 522 Contracts.

Appendix 2

Preliminary Proposals

Several NSF programs utilize preliminary proposals in an effort to limit the workload of PIs and to increase the quality of full proposals. The annual number of preliminary proposals varies considerably as a result of competitions being held in a given year. For some programs, preliminary proposals are externally reviewed; other programs provide internal review only.

Decisions regarding preliminary proposals may be non-binding or binding. Non-binding decisions regarding preliminary proposals are recommendations. A PI may choose to submit a full proposal even if it has been discouraged. Binding decisions, however, are restrictive in that non-invited PIs are not allowed to submit a full proposal.

Number of Preliminary Proposals and Subsequent Actions

Fiscal Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Total # Preliminary Proposals	1,747	2,469	2,310	2,120	1,874	2,842	3,203	3,856
Non-Binding (NB) Total	1,184	1,924	1,412	1,302	1,279	1,540	669	1,140
NB Encouraged	665	669	544	512	509	662	333	519
NB Discouraged	519	1,255	868	790	770	878	336	621
Binding Total	540	534	892	816	594	1,301	2,534	2,500
Binding Invite	168	152	221	246	136	252	572	685
Binding Non-invite	372	382	671	570	458	1,049	1,962	1,815

Source: NSF Enterprise Information System 10/2/09

Non-binding and binding totals do not include withdrawn preliminary proposals

Appendix 3

Proposals, Awards and Funding Rates by PI Race and Ethnicity

		Fiscal Year							
		2002	2003	2004	2005	2006	2007	2008	2009
American Indian/Alaska Native	Proposals	100	112	93	94	93	80	82	77
	Total Awards	30	28	23	24	30	28	21	27
	Omnibus								*19*
	ARRA								*8*
	Funding Rate	30%	25%	25%	26%	32%	35%	26%	35%
Black/ African American	Proposals	748	822	900	813	881	992	965	1,005
	Total Awards	207	192	208	193	197	234	239	291
	Omnibus								*227*
	ARRA								*64*
	Funding Rate	28%	23%	23%	24%	22%	24%	25%	29%
Hispanic or Latino	Proposals	1,041	1,191	1,432	1,436	1,483	1,591	1,590	1,726
	Total Awards	300	342	347	322	374	418	381	530
	Omnibus								*372*
	ARRA								*158*
	Funding Rate	29%	29%	24%	22%	25%	26%	24%	31%
Native Hawaiian/ Pacific Islander	Proposals	32	37	47	21	25	24	30	21
	Total Awards	7	12	4	4	7	4	7	8
	Omnibus								*5*
	ARRA								*3*
	Funding Rate	22%	32%	9%	19%	28%	17%	23%	38%
Asian	Proposals	5,509	6,895	7,618	7,253	7,821	8,622	8,847	9,396
	Total Awards	1,195	1,445	1,382	1,278	1,507	1,776	1,762	2,433
	Omnibus								*1,674*
	ARRA								*759*
	Funding Rate	22%	21%	18%	18%	19%	21%	20%	26%
White, Not of Hispanic Origin	Proposals	25,288	28,081	30,251	28,752	28,645	29,318	28,842	28,525
	Total Awards	7,985	8,130	7,713	7,305	7,568	8,103	7,815	10,031
	Omnibus								*6,818*
	ARRA								*3,213*
	Funding Rate	32%	29%	25%	25%	26%	28%	27%	35%

Source: NSF Enterprise Information System 10/2/09.

Appendix 4

Funding Rates of New PIs and Former PIs by Directorate

		2002	2003	2004	2005	2006	2007	2008	2009
New PIs	BIO	21%	19%	18%	15%	14%	14%	15%	23%
Former	CISE	19%	16%	13%	15%	18%	22%	18%	24%
Definition	EHR	22%	18%	15%	16%	21%	17%	23%	21%
	ENG	19%	16%	15%	13%	15%	17%	16%	21%
	GEO	29%	28%	26%	22%	23%	23%	24%	32%
	MPS	24%	22%	21%	20%	19%	20%	19%	29%
	OCI	33%	20%	19%	59%	24%	22%	20%	45%
	OISE	40%	45%	35%	39%	42%	43%	36%	55%
	OPP	32%	33%	29%	31%	25%	20%	19%	33%
	SBE	20%	18%	15%	18%	18%	20%	20%	21%
New PIs	BIO	20%	20%	17%	15%	14%	14%	15%	23%
Revised	CISE	18%	16%	13%	15%	18%	22%	18%	25%
Definition[1]	EHR	21%	17%	14%	15%	20%	16%	22%	20%
	ENG	19%	16%	15%	14%	15%	17%	16%	21%
	GEO	27%	28%	26%	21%	23%	23%	23%	31%
	MPS	24%	21%	21%	20%	19%	20%	19%	29%
	OCI	32%	19%	25%	53%	9%	18%	19%	41%
	OISE	39%	45%	35%	39%	42%	44%	35%	55%
	OPP	26%	35%	29%	28%	23%	18%	19%	29%
	SBE	20%	18%	15%	18%	18%	21%	20%	22%
Prior PIs	BIO	33%	31%	28%	25%	21%	24%	23%	32%
Former	CISE	28%	26%	19%	25%	32%	32%	28%	34%
Definition	EHR	28%	26%	23%	24%	29%	25%	35%	34%
	ENG	30%	27%	23%	20%	21%	23%	24%	29%
	GEO	38%	39%	36%	30%	34%	33%	34%	48%
	MPS	42%	41%	36%	35%	37%	40%	35%	47%
	OCI	19%	14%	26%	70%	35%	23%	19%	63%
	OISE	66%	64%	58%	44%	51%	52%	54%	55%
	OPP	50%	45%	42%	36%	33%	35%	30%	54%
	SBE	36%	33%	26%	32%	32%	35%	32%	39%
Prior PIs	BIO	32%	30%	28%	25%	21%	23%	23%	31%
Revised	CISE	28%	25%	18%	24%	31%	31%	27%	32%
Definition[1]	EHR	28%	26%	23%	24%	28%	24%	34%	33%
	ENG	30%	26%	23%	19%	21%	23%	23%	28%
	GEO	37%	38%	35%	30%	33%	33%	34%	47%
	MPS	41%	41%	35%	34%	36%	39%	34%	46%
	OCI	21%	16%	23%	71%	37%	24%	20%	63%
	OISE	66%	64%	57%	43%	50%	51%	55%	55%
	OPP	51%	44%	41%	37%	33%	35%	30%	54%
	SBE	37%	32%	25%	32%	32%	33%	32%	38%

Source: NSF Enterprise Information System 10/2/09.

Appendix 5

Median and Average Award Amounts for Research Grants By Directorate or Office (in Thousands)

		Fiscal Year									
		2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	***2009 Omnibus***	***2009 ARRA***
NSF	Median	$86	$100	$102	$104	$102	$110	$110	$120	*$120*	*$122*
	Average	$116	$136	$140	$144	$135	$146	$143	$162	*$161*	*$163*
BIO	Median	$110	$126	$133	$140	$140	$142	$150	$161	*$160*	*$161*
	Average	$137	$177	$171	$184	$191	$182	$180	$200	*$214*	*$173*
CSE	Median	$94	$113	$113	$112	$117	$115	$117	$150	*$150*	*$160*
	Average	$136	$159	$167	$151	$146	$139	$165	$188	*$171*	*$246*
ENG	Median	$84	$100	$97	$97	$90	$100	$100	$100	*$100*	*$100*
	Average	$102	$119	$120	$117	$110	$116	$112	$120	*$119*	*$123*
GEO	Median	$80	$103	$115	$116	$110	$120	$118	$124	*$121*	*$127*
	Average	$103	$146	$150	$148	$149	$154	$150	$175	*$179*	*$169*
MPS	Median	$83	$100	$100	$100	$100	$106	$105	$113	*$120*	*$105*
	Average	$112	$129	$130	$135	$120	$130	$133	$138	*$140*	*$136*
OCI	Median	$125	$134	$365	$161	$253	$450	$179	$200	*$150*	*$250*
	Average	$176	$160	$402	$315	$287	$512	$217	$568	*$791*	*$381*
OISE	Median	$10	$10	$10	$15	$33	$47	$30	$25	*$11*	*$50*
	Average	$16	$21	$15	$91	$59	$157	$29	$33	*$17*	*$54*
OPP	Median	$82	$126	$141	$122	$132	$167	$148	$175	*$119*	*$191*
	Average	$130	$144	$204	$180	$150	$238	$187	$218	*$161*	*$239*
SBE	Median	$63	$77	$78	$84	$85	$94	$100	$101	*$96*	*$117*
	Average	$78	$89	$90	$110	$103	$115	$116	$114	*$109*	*$126*

Source: NSF Enterprise Information System 10/2/09

EHR is not included in this appendix since the number of awards included in the "research grant" category is small relative to the number of education awards managed by that directorate.

Appendix 6

Average Number of Months of Salary Support for Single- and Multi-PI Research Grants, by Directorate or Office

Directorate or Office	Type of Award	2002	2003	2004	2005	2006	2007	2008	2009	2009 Omnibus	2009 ARRA
NSF	Single PI Grants	2.0	1.5	1.5	1.4	1.5	1.4	1.3	1.2	1.3	1.2
	Multi-PI Grants	1.6	1.5	1.4	1.4	1.3	1.3	1.1	1.1	1.1	1.1
	NSF Average	1.9	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2
BIO	Single PI Grants	3.4	1.8	1.8	1.9	1.6	2.0	1.8	1.3	1.3	1.3
	Multi-PI Grants	2.1	2.1	1.7	2.3	2.0	2.0	1.7	1.6	1.7	1.2
	BIO Average	3.0	1.9	1.7	2.0	1.7	2.0	1.8	1.4	1.4	1.3
CSE	Single PI Grants	1.4	1.2	1.2	1.1	1.3	0.9	0.8	0.9	0.9	0.7
	Multi-PI Grants	1.0	1.0	1.0	1.0	0.8	0.8	0.7	0.8	0.8	0.6
	CSE Average	1.2	1.1	1.1	1.1	1.1	0.9	0.8	0.9	0.9	0.7
EHR	Single PI Grants	1.4	1.6	3.0	2.0	1.5	1.6	2.0	1.6	1.7	0.2
	Multi-PI Grants	4.7	2.2	1.9	2.0	1.8	1.5	1.2	1.6	1.7	1.1
	EHR Average	3.1	1.9	2.2	2.0	1.7	1.5	1.5	1.6	1.7	0.7
ENG	Single PI Grants	1.4	1.1	1.1	1.0	1.2	1.2	0.9	0.9	0.9	0.8
	Multi-PI Grants	1.2	1.2	0.9	0.9	0.7	0.8	0.7	0.7	0.7	0.7
	ENG Average	1.3	1.2	1.0	1.0	1.0	1.0	0.8	0.8	0.8	0.7
GEO	Single PI Grants	1.8	1.6	1.5	1.4	1.6	1.5	1.3	1.3	1.4	1.2
	Multi-PI Grants	2.0	1.9	1.7	1.8	1.8	1.7	1.6	1.4	1.5	1.3
	GEO Average	1.9	1.7	1.6	1.5	1.7	1.5	1.4	1.3	1.4	1.2
MPS	Single PI Grants	1.9	1.4	1.4	1.4	1.4	1.3	1.3	1.5	1.4	1.6
	Multi-PI Grants	1.5	1.6	2.0	1.4	1.5	1.5	1.4	1.5	1.4	1.8
	MPS Average	1.8	1.5	1.6	1.4	1.4	1.3	1.4	1.5	1.4	1.6
OCI	Single PI Grants	1.8	2.0	2.3	1.3	0.8	2.4	1.3	0.8	0.7	0.9
	Multi-PI Grants	2.2	1.9	2.4	1.3	0.8	2.2	1.2	1.6	1.6	1.6
	OCI Average	2.0	1.9	2.4	1.3	0.8	2.3	1.2	1.2	1.2	1.2
OISE	Single PI Grants	0.9	3.3	1.1	N/A	2.9	0.5	N/A	1.0	N/A	1.0
	Multi-PI Grants	0.7	0.9	4.0	1.1	0.6	0.9	1.0	0.9	N/A	0.9
	OISE Average	0.8	2.2	1.8	1.1	2.2	0.9	1.0	1.0	N/A	1.0
OPP	Single PI Grants	1.8	1.6	2.4	1.7	1.6	1.7	2.0	1.3	2.3	1.0
	Multi-PI Grants	2.2	1.6	2.1	1.8	2.2	1.5	1.5	1.1	1.4	1.0
	OPP Average	1.9	1.6	2.3	1.7	1.8	1.6	1.9	1.2	2.0	1.0
SBE	Single PI Grants	2.1	2.2	1.7	1.7	1.9	1.6	2.0	1.5	1.9	0.8
	Multi-PI Grants	2.7	1.7	1.1	1.3	1.4	1.4	1.1	1.0	1.0	0.9
	SBE Average	2.3	2.0	1.5	1.6	1.7	1.5	1.7	1.4	1.7	0.8

Source: NSF Enterprise Information System 10/2/09

Appendix 7

Number of People Involved in NSF Activities

In FY 2009, an estimated 240,000 senior researchers, post-doctoral associates, teachers and students across all levels were directly involved in NSF research and education programs and activities.

	FY 2009 Omnibus Estimate	FY 2009 ARRA Estimate	FY 2009 Total Estimate
Senior Researchers	41,971	12,408	54,379
Other Professionals	11,868	3,546	15,414
Postdoctorates	5,989	1,945	7,934
Graduate Students	37,621	15,945	53,566
Undergraduate Students	24,899	7,868	32,767
K-12 Students	13,001	500	13,501
K-12 Teachers	62,206	1,075	63,281
Total Number of People	**197,555**	**43,287**	**240,842**

Source: NSF FY 2011 Budget Request

These data are based on the budget details of awards active in the year indicated, with modifications made as appropriate based on additional information provided by the managing directorates or offices.

In addition, NSF programs indirectly impact many millions of people. These programs reach K-12 students, K-12 teachers, the general public, and researchers. Outreach activities include workshops, activities at museums, television, educational videos, journal articles, and dissemination of improved curriculum and teaching methods.

Appendix 8

Average Number of Research Proposals per PI before Receiving One Award by Directorate/Office

	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009
NSF	**1.9**	**2.0**	**2.1**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**
BIO	1.7	1.8	1.8	2.0	2.0	2.2	2.2	2.1
CISE	2.1	2.2	2.5	2.5	2.6	2.4	2.4	2.5
EHR	1.1	1.1	1.2	1.3	1.3	1.4	1.3	1.4
ENG	2.0	2.1	2.2	2.3	2.4	2.6	2.5	2.5
GEO	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.1
MPS	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6
OCI	1.0	1.1	1.2	1.2	1.2	1.2	1.2	1.4
OISE	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
OPP	1.6	1.7	1.6	1.6	1.8	1.8	1.9	1.9
SBE	1.4	1.5	1.6	1.7	1.7	1.6	1.6	1.6

Source: NSF Enterprise Information System 10/2/09

Appendix 9

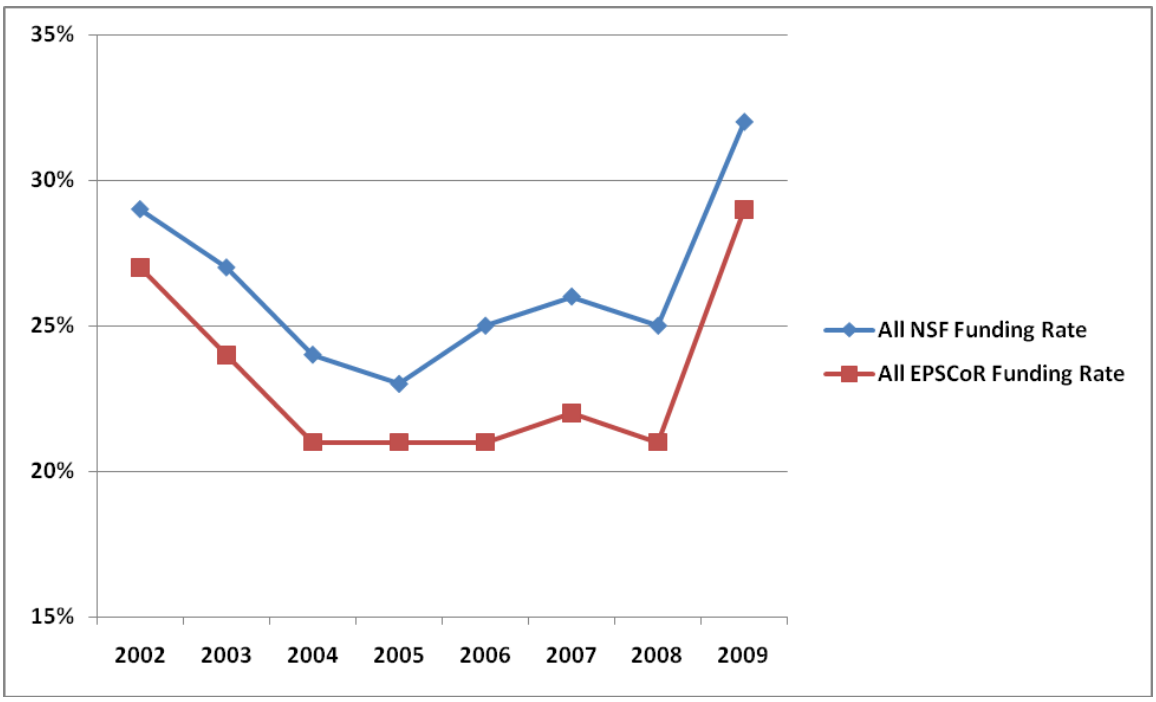
EPSCoR: Jurisdictions, Proposal, Award, and Funding Data

Twenty-seven states, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands were eligible to compete in the NSF EPSCoR program in FY 2009. The states are: Alabama, Alaska, Arkansas, Delaware, Hawaii, Idaho, Iowa, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, West Virginia, and Wyoming.

Table 9.1 shows the change over time for the funding rate of EPSCoR jurisdictions relative to the overall funding rate for all of the United States.

Table 9.1

Overall Funding Rates for EPSCoR Jurisdictions and Overall NSF Funding Rates

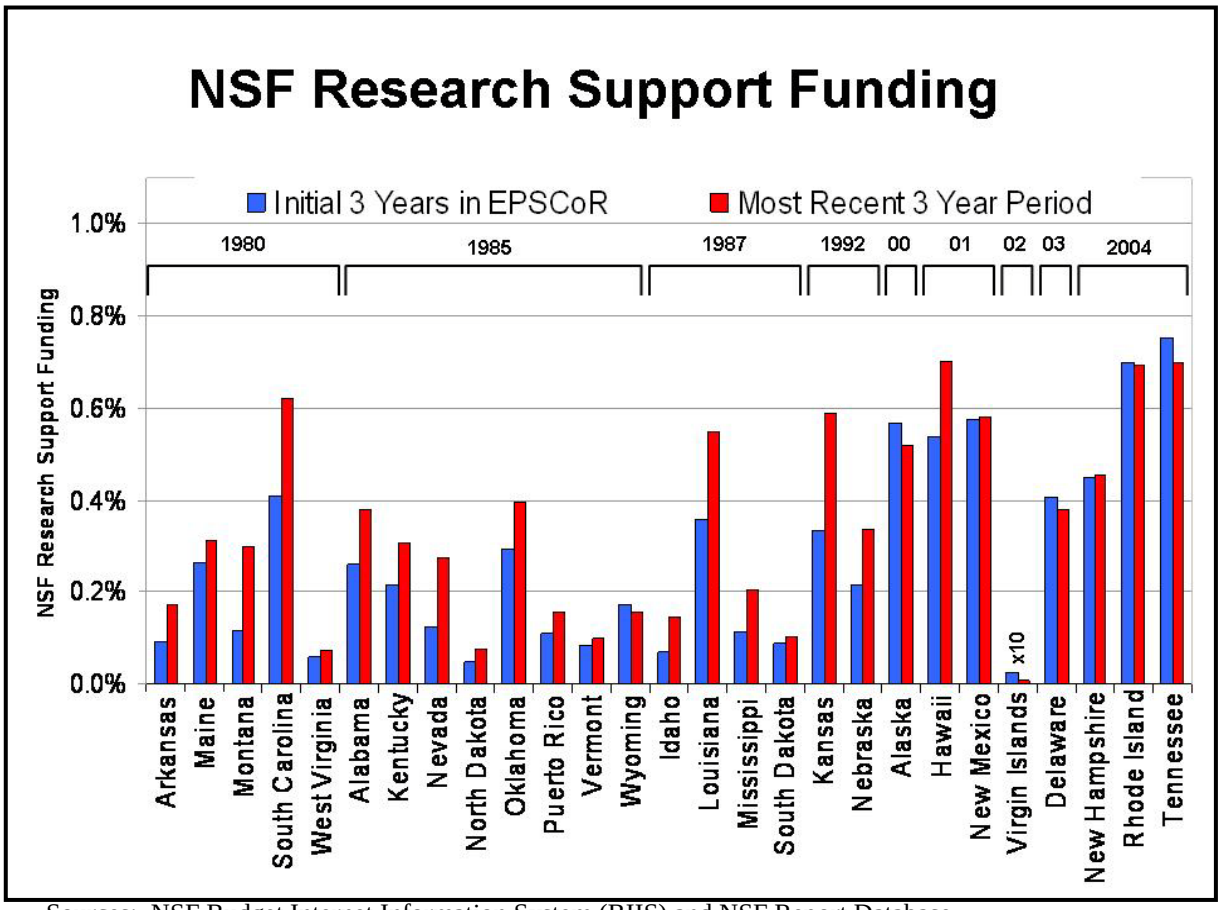


Source: NSF Budget Internet Information System (BIIS)

Table 9.2 shows the funding data for each EPSCoR jurisdiction in its initial three years in the EPSCoR program, and the most recent three year period, FY 2007 to FY 2009.

Table 9.2

Funding to EPSCoR Jurisdictions as Percentage of the NSF Budget: Initial 3 Years in EPSCoR and Most Recent (FY 2007-09) 3-Year Period



Sources: NSF Budget Internet Information System (BIIS) and NSF Report Database

Table 9.3 shows the number of proposals, awards, and funding rate for EPSCoR jurisdictions. Below the name of the EPSCoR jurisdiction is the year that that jurisdiction joined EPSCoR.

Table 9.3
Funding Rates by EPSCoR Jurisdiction
(Date under the state name is year state joined EPSCoR)

		2002	2003	2004	2005	2006	2007	2008	2009
All NSF	Awards	10,339	10,798	10,367	9,772	10,450	11,484	11,162	14,641
	Proposals	35,082	40,084	43,816	41,723	42,374	44,593	44,438	45,181
	Funding Rate	29%	27%	24%	23%	25%	26%	25%	32%
	Awards	1,511	1,567	1,454	1,433	1,489	1,653	1,564	2,474
	Proposals	5,595	6,418	6,815	6,802	7,037	7,392	7,349	8,476
All EPSCoR Jurisdictions	Funding Rate	27%	24%	21%	21%	21%	22%	21%	29%
Alabama	Awards	82	81	99	78	84	86	85	148
-1985	Proposals	385	443	488	483	530	508	489	606
	Funding Rate	21%	18%	20%	16%	16%	17%	17%	24%
Alaska	Awards	37	74	63	52	63	75	52	77
-2000	Proposals	132	200	211	203	209	246	204	186
	Funding Rate	28%	37%	30%	26%	30%	30%	25%	41%
Arkansas	Awards	38	43	45	29	47	58	36	41
-1980	Proposals	186	201	236	191	209	244	197	194
	Funding Rate	20%	21%	19%	15%	22%	24%	18%	21%
Delaware	Awards	49	64	50	54	50	67	68	77
-2003	Proposals	194	239	266	254	247	283	283	244
	Funding Rate	25%	27%	19%	21%	20%	24%	24%	32%
Hawaii	Awards	71	71	66	89	77	74	73	109
-2001	Proposals	216	247	252	265	240	276	276	277
	Funding Rate	33%	29%	26%	34%	32%	27%	26%	39%
Idaho	Awards	27	33	24	31	29	34	44	44
-1987	Proposals	130	153	148	140	148	161	201	168
	Funding Rate	21%	22%	16%	22%	20%	21%	22%	26%
Iowa	Awards	113	120	118	106	109	99	132	142
-2009	Proposals	479	515	545	501	524	491	524	564
	Funding Rate	24%	23%	22%	21%	21%	20%	25%	25%
Kansas	Awards	74	79	70	88	76	78	82	88
-1992	Proposals	329	338	388	367	393	404	387	399
	Funding Rate	22%	23%	18%	24%	19%	19%	21%	22%
Kentucky	Awards	71	66	72	62	52	60	62	78
-1985	Proposals	266	298	337	307	293	330	300	356
	Funding Rate	27%	22%	21%	20%	18%	18%	21%	22%
Louisiana	Awards	95	98	107	100	117	96	98	132
-1987	Proposals	375	455	517	514	548	495	471	483
	Funding Rate	25%	22%	21%	19%	21%	19%	21%	27%

		2002	2003	2004	2005	2006	2007	2008	2009
Maine	Awards	76	53	41	50	36	58	65	60
-1980	Proposals	189	190	197	192	181	200	199	172
	Funding Rate	40%	28%	21%	26%	20%	29%	33%	35%
Mississippi	Awards	51	33	43	32	48	40	34	76
-1987	Proposals	152	181	238	226	293	251	271	301
	Funding Rate	34%	18%	18%	14%	16%	16%	13%	25%
Montana	Awards	43	67	54	43	52	61	57	78
-1980	Proposals	136	189	194	193	242	238	232	207
	Funding Rate	32%	35%	28%	22%	21%	26%	25%	38%
Nebraska	Awards	48	44	52	41	59	51	54	64
-1992	Proposals	201	233	242	226	238	250	255	248
	Funding Rate	24%	19%	21%	18%	25%	20%	21%	26%
Nevada	Awards	40	45	31	40	42	50	43	61
-1985	Proposals	176	160	159	203	200	231	261	232
	Funding Rate	23%	28%	19%	20%	21%	22%	16%	26%
New Hampshire	Awards	68	67	53	64	53	60	58	108
-2004	Proposals	200	244	232	280	243	240	230	251
	Funding Rate	34%	27%	23%	23%	22%	25%	25%	43%
New Mexico	Awards	101	117	90	80	91	104	102	115
-2001	Proposals	355	406	378	352	348	401	444	389
	Funding Rate	28%	29%	24%	23%	26%	26%	23%	30%
North Dakota	Awards	30	29	20	19	22	15	19	31
-1985	Proposals	127	127	140	154	170	139	158	141
	Funding Rate	24%	23%	14%	12%	13%	11%	12%	22%
Oklahoma	Awards	73	61	65	55	74	66	67	112
-1985	Proposals	270	302	338	327	342	338	378	420
	Funding Rate	27%	20%	19%	17%	22%	20%	18%	27%
Puerto Rico	Awards	18	20	20	16	19	32	24	37
-1985	Proposals	82	115	106	119	140	153	148	183
	Funding Rate	22%	17%	19%	13%	14%	21%	16%	20%
Rhode Island	Awards	106	105	128	117	140	127	129	176
-2004	Proposals	297	291	340	334	353	390	357	350
	Funding Rate	36%	36%	38%	35%	40%	33%	36%	50%
South Carolina	Awards	101	110	80	90	86	122	87	152
-1980	Proposals	382	472	452	453	464	523	470	527
	Funding Rate	26%	23%	18%	20%	19%	23%	19%	29%

		2002	2003	2004	2005	2006	2007	2008	2009
South Dakota	Awards	24	23	12	21	14	21	20	31
-1987	Proposals	99	86	93	101	97	97	116	132
	Funding Rate	24%	27%	13%	21%	14%	22%	17%	23%
Tennessee	Awards	115	111	102	113	99	145	124	183
-2004	Proposals	440	521	540	585	564	642	633	608
	Funding Rate	26%	21%	19%	19%	18%	23%	20%	30%
U.S. Virgin Islands	Awards	3	0	2	2	1	0	2	0
-2002	Proposals	3	1	6	5	6	4	5	1
	Funding Rate	100%	0%	33%	40%	17%	0%	40%	0%
Utah	Awards	97	93	105	106	94	95	111	135
-2009	Proposals	370	399	444	474	466	449	492	464
	Funding Rate	26%	23%	24%	22%	20%	21%	23%	29%
Vermont	Awards	22	24	21	22	16	26	27	42
-1985	Proposals	81	113	111	129	119	129	144	120
	Funding Rate	27%	21%	19%	17%	13%	20%	19%	35%
West Virginia	Awards	24	18	17	16	19	21	25	33
-1980	Proposals	107	111	105	100	121	128	119	130
	Funding Rate	22%	16%	16%	16%	16%	16%	21%	25%
Wyoming	Awards	31	31	27	29	23	26	27	44
-1985	Proposals	102	102	101	99	99	91	121	123
	Funding Rate	30%	30%	27%	29%	23%	29%	22%	36%

Source: NSF Budget Internet Information System (BIIS)

Appendix 10

Small Grants for Exploratory Research (SGER), Early-concept Grants for Exploratory Research (EAGER), and Grants for Rapid Response Research (RAPID)

Since the beginning of FY 1990, the Small Grants for Exploratory Research (SGER) option has permitted program officers throughout the Foundation to make small-scale grants without formal external review. Effective January 2009, the SGER funding mechanism was replaced by two funding mechanisms EAGER and RAPID, in part to emphasize the importance of funding of both potentially transformative research and research requiring an urgent response:

- **EArly-concept Grants for Exploratory Research (EAGER)**
  The EAGER funding mechanism is used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. The work may be considered especially "high risk-high payoff" in the sense that it, for example, involves radically different approaches, applies new expertise, or engages novel disciplinary or interdisciplinary perspectives.

  Requests may be for up to $300 thousand and of up to two years duration. The EAGER award size, however, will be consistent with the project scope and of a size comparable to grants in similar areas.

- **Grants for Rapid Response Research (RAPID)**
  The RAPID funding mechanism is used for proposals having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events. Requests may be for up to $200 thousand and of one year duration. The award size, however, will be consistent with the project scope and of a size comparable to grants in similar areas.

Only internal merit review is required for EAGER and RAPID proposals. Program officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI is so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSB-approved merit review criteria apply.

Table 10 provides the funding trends for EAGERs and RAPIDs, as well as that for SGERs.

Table 10

Small Grants for Exploratory Research (SGER), Early-concept Grants for Exploratory Research (EAGER) and Grants for Rapid Response Research (RAPID) Funding Trends by Directorate or Office

		Fiscal Year										
		2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**			
									SGER	*RAPID*	*EAGER*	**Total**
NSF	Proposals	323	435	640	504	697	469	438	119	99	363	581
	Awards	278	344	382	387	472	410	389	102	95	353	550
	Total $ (In Millions)	$16.7	$23.4	$29.5	$27.0	$40.0	$34.8	$34.2	$9.3	$8.7	$52.7	$70.7
	% of Obligations	0.4%	0.4%	0.5%	0.5%	0.7%	0.6%	0.6%	0.1%	0.1%	0.6%	0.8%
	Average $ (In Thousands)	$60	$68	$77	$70	$85	$85	$88	$91	$91	$149	$129
BIO	Proposals	58	52	65	55	55	29	29	17	13	53	83
	Awards	40	48	52	38	49	26	23	13	10	51	74
	Total $ (In Millions)	$2.7	$3.4	$5.4	$3.0	$5.4	$2.7	$2.3	$1.4	$0.9	$10.2	$12.5
	% of Obligations	0.5%	0.6%	0.9%	0.5%	0.9%	0.4%	0.4%	0.1%	0.1%	1.1%	1.3%
	Average $ (In Thousands)	$68	$71	$104	$79	$110	$104	$98	$108	$87	$200	$169
CISE	Proposals	26	59	51	82	89	136	104	12	1	92	105
	Awards	24	51	48	71	88	136	102	12	1	92	105
	Total $ (In Millions)	$1.8	$3.9	$3.2	$6.7	$10.2	$14.6	$10.4	$1.5	$0.0	$14.4	$15.9
	% of Obligations	0.4%	0.8%	0.6%	1.4%	2.0%	2.7%	1.9%	0.2%	0.0%	1.8%	1.9%
	Average $ (In Thousands)	$75	$76	$67	$94	$116	$107	$102	$124	$26	$157	$152
EHR	Proposals	14	6	17	15	16	7	9	1	9	7	17
	Awards	10	5	16	11	16	7	9	1	9	7	17
	Total $ (In Millions)	$1.0	$0.4	$2.1	$1.5	$0.8	$0.9	$1.7	$0.2	$1.3	$1.8	$3.3
	% of Obligations	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.2%	0.0%	0.1%	0.2%	0.3%
	Average $ (In Thousands)	$100	$80	$131	$136	$50	$129	$188	$200	$140	$258	$192
ENG	Proposals	88	128	127	176	180	134	125	28	3	104	135
	Awards	83	110	119	126	145	89	104	21	3	98	122
	Total $ (In Millions)	$5.7	$7.5	$8.1	$6.7	$11.2	$5.8	$7.6	$1.4	$0.2	$10.7	$12.3
	% of Obligations	1.1%	1.3%	1.4%	1.1%	1.8%	0.9%	1.1%	0.1%	0.0%	1.1%	1.3%
	Average $ (In Thousands)	$69	$68	$68	$53	$77	$65	$73	$67	$65	$109	$101

		2002	2003	2004	2005	2006	2007	2008	2009			
GEO	Proposals	46	62	68	62	83	85	67	21	32	29	82
	Awards	43	60	64	59	79	81	64	20	32	29	81
	Total $ (In Millions)	$1.5	$2.9	$3.5	$3.4	$4.4	$4.8	$3.5	$1.1	$2.1	$2.9	$6.1
	% of Obligations	0.2%	0.4%	0.4%	0.5%	0.5%	0.6%	0.5%	0.1%	0.1%	0.2%	0.4%
	Average $ (In Thousands)	$35	$48	$55	$58	$56	$59	$55	$55	$66	$99	$75
MPS	Proposals	32	97	272	21	39	39	58	15	2	32	49
	Awards	21	43	45	18	31	34	45	11	2	30	43
	Total $ (In Millions)	$1.8	$3.8	$4.4	$1.7	$2.6	$3.5	$5.4	$2.1	$0.2	$3.9	$6.2
	% of Obligations	0.2%	0.3%	0.4%	0.1%	0.2%	0.3%	0.4%	0.1%	0.0%	0.2%	0.3%
	Average $ (In Thousands)	$86	$88	$98	$94	$84	$103	$121	$191	$90	$131	$144
OCI	Proposals	0	0	0	11	2	1	7	0	0	23	23
	Awards	0	0	0	11	2	1	7	0	0	23	23
	Total $ (In Millions)	$0.00	$0.1	$1.0	$1.5	$0.2	$0.2	$1.0	$0.0	$0.0	$6.3	$6.3
	% of Obligations	0.0%	0.0%	0.8%	1.2%	0.1%	0.1%	0.5%	0.0%	0.0%	2.2%	2.2%
	Average $ (In Thousands)	N/A	N/A	N/A	$136	$100	$200	$140	N/A	N/A	$275	$275
OISE	Proposals	0	0	0	0	0	0	0	0	0	3	3
	Awards	0	0	0	0	0	0	0	0	0	3	3
	Total $ (In Millions)	$0.04	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0	$0.0	$0.9	$1.0
	% of Obligations	0.0%	0.1%	0.2%	0.2%	0.3%	0.2%	0.2%	0.0%	0.1%	1.4%	1.6%
	Average $ (In Thousands)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$294	$317
OPP	Proposals	17	14	18	24	16	23	17	9	0	10	19
	Awards	16	13	16	24	16	23	15	8	0	10	18
	Total $ (In Millions)	$0.7	$0.7	$0.7	$1.2	$0.5	$1.2	$1.0	$0.6	$0.2	$0.7	$1.5
	% of Obligations	0.2%	0.2%	0.2%	0.3%	0.1%	0.3%	0.2%	0.1%	0.0%	0.1%	0.2%
	Average $ (In Thousands)	$44	$54	$44	$50	$31	$52	$67	$76	N/A	$71	$83
SBE	Proposals	42	17	22	58	217	15	21	16	39	10	65
	Awards	41	14	22	29	46	13	20	16	38	10	64
	Total $ (In Millions)	$1.4	$0.6	$0.8	$1.2	$4.5	$1.0	$1.2	$1.0	$3.8	$0.9	$5.7
	% of Obligations	1.0%	0.4%	0.4%	0.6%	2.0%	0.4%	0.5%	0.3%	1.1%	0.3%	1.7%
	Average $ (In Thousands)	$34	$43	$36	$41	$98	$77	$59	$64	$101	$87	$89

Source: NSF Enterprise Information System 10/2/09

Although a directorate or office may have no proposals reported in this table, the unit may have obligations from split-funding awards that are managed by other directorates or offices. Only the SGER program was active in FYs 2002-2008.

Appendix 11

Oversight and Advisory Mechanisms

- **Committees of Visitors.**
  To ensure the highest quality in processing and recommending proposals for awards, NSF convenes external groups of experts, called Committees of Visitors (COVs), to review each major program approximately every three-to-five years. This includes disciplinary programs in the various directorates and offices, and the cross-disciplinary programs managed across directorates. The COVs (comprised of scientists, engineers and educators from academia, industry, and government) convene at NSF for a two-to-three day assessment. These experts evaluate the integrity and efficiency of the processes used for proposal review and program decision-making. In addition, the COVs provide a retrospective assessment of the quality of results of NSF's programmatic investments. The COV reports, written as answers and commentary to specific questions, are submitted for review through Advisory Committees to the directorates and the NSF Director. Questions include aspects of the program portfolio, such as the balance of high-risk, multidisciplinary, and innovative projects. The recommendations of COVs are reviewed by management and taken into consideration by NSF when evaluating existing programs and future directions for the Foundation.[13]

- **Advisory Committee (AC) Reporting on Directorate/Office Performance.**
  Advisory committees regularly provide community perspectives to the research and education directorates, Office of Cyberinfrastructure, Office of International Science and Engineering, and Office of Polar Programs. They are typically composed of 15-25 experts who have experience relevant to the programs under review and are broadly drawn from academia, industry, and government. Advisory Committees, as part of their mission, regularly review COV reports and staff responses.

- **Advisory Committee for GPRA Performance Assessment.**
  The Advisory Committee for GPRA Performance Assessment (AC/GPA) was established in June 2002 to provide advice and recommendations to the NSF Director regarding NSF's performance under the Government Performance and Results Act (GPRA). This is the only Foundation-wide external advisory committee that conducts an assessment of the entire portfolio of NSF investments in science, engineering, and education. The Committee, which is comprised of about 20 scientists, engineers, and educators, is drawn from academic, government research institutions, and private industry. Each year, the Committee reviews the Foundation's investments in *Discovery*, *Learning*, and *Research Infrastructure* to determine if NSF demonstrated significant achievement under these strategic goals. The AC/GPA annual report is publicly available on the NSF website.

[13] The COV reports and directorate responses are available electronically as a link from the NSF GPRA web page, http://www.nsf.gov/about/performance/.

Appendix 12

Requests for Formal Reconsideration of Declined Proposals

		Fiscal Year							
		2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
First Level Reviews (Assistant Directors):									
BIO	Request	4	4	3	2	4	2	5	3
	- Upheld	4	4	3	2	4	2	5	3
	- Reversed	0	0	0	0	0	0	0	0
CISE	Request	1	1	2	3	1	1	0	0
	- Upheld	1	0	2	3	1	1	0	0
	- Reversed	0	1	0	0	0	0	0	0
EHR	Request	2	3	2	7	4	6	7	2
	- Upheld	2	3	2	7	4	6	7	2
	- Reversed	0	0	0	0	0	0	0	0
ENG	Request	2	2	3	3	6	3	3	3
	- Upheld	2	2	3	3	6	3	3	3
	- Reversed	0	0	0	0	0	0	0	0
GEO	Request	1	4	4	0	0	2	0	2
	- Upheld	1	4	4	0	0	2	0	1
	- Reversed	0	0	0	0	0	0	0	1
MPS	Request	15	4	24	15	16	16	14	9
	- Upheld	15	4	24	15	15	15	14	7
	- Reversed	0	0	0	0	1	1	0	2
SBE	Request	1	3	3	3	4	0	2	1
	- Upheld	0	2	3	3	4	0	2	1
	- Reversed	1	1	0	0	0	0	0	0
Other*	Request	0	0	0	0	0	3	0	1
	- Upheld	0	0	0	0	0	3	0	0
	- Reversed	0	0	0	0	0	0	0	1
Second Level Reviews (Deputy Director):									
O/DD	Request	4	5	7	2	0	1	3	2
	- Upheld	4	4	7	2	0	1	3	2
	- Reversed	0	1	0	0	0	0	0	0
Total Reviews First & Second Level									
NSF	Request	30	26	48	35	35	34	34	21
	- Upheld	29	24	48	35	34	33	34	17
	- Reversed	1	2	0	0	1	1	0	4

Source: Office of the Director

Other category includes OCI, OIA, OPP, and OISE. The number of decisions (upheld or reversed) may not equal the number of requests in each year due to the carryover of the pending reconsideration request.

Appendix 13

Average Number of Reviews per Proposal, By Method and Directorate or Office, FY 2009

		Methods of Review						
		All Methods	Mail + Panel	Mail-Only	Panel-Only	Not Reviewed *	Returned without Review	Withdrawn Proposals
NSF	Reviews	241,712	93,661	14,227	133,824			
	Proposals	43,467	14,262	3,370	25,835	1,714	34	315
	Rev/Prop	5.6	6.6	4.2	5.2			
BIO	Reviews	38,153	31,398	190	6,565			
	Proposals	6,374	4,899	47	1,428	204	5	45
	Rev/Prop	6.0	6.4	4.0	4.6			
CISE	Reviews	28,651	3,793	376	24,482			
	Proposals	5,348	570	98	4,680	317	3	25
	Rev/Prop	5.4	6.7	3.8	5.2			
EHR	Reviews	22,295	1,206	334	20,755			
	Proposals	3,651	188	89	3,374	48	3	8
	Rev/Prop	6.1	6.4	3.8	6.2			
ENG	Reviews	50,229	2,774	325	47,130			
	Proposals	10,295	477	87	9,731	315	6	50
	Rev/Prop	4.9	5.8	3.7	4.8			
GEO	Reviews	23,687	18,443	2,906	2,338			
	Proposals	3,948	2,839	644	465	188	3	25
	Rev/Prop	6.0	6.5	4.5	5.0			
MPS	Reviews	42,722	11,519	8,106	23,097			
	Proposals	7,555	1,662	1,870	4,023	328	5	97
	Rev/Prop	5.7	6.9	4.3	5.7			
OCI	Reviews	1,554	258	157	1,139			
	Proposals	298	36	40	222	39	1	2
	Rev/Prop	5.2	7.2	3.9	5.1			
OISE	Reviews	2,931	857	852	1,222			
	Proposals	668	123	253	292	113	1	31
	Rev/Prop	4.4	7.0	3.4	4.2			
OPP	Reviews	4,246	3,810	135	301			
	Proposals	807	653	33	121	48	1	3
	Rev/Prop	5.3	5.8	4.1	2.5			
SBE	Reviews	26,351	19,119	795	6,437			
	Proposals	4,415	2,769	198	1,448	110	2	29
	Rev/Prop	6.0	6.9	4.0	4.4			
Other	Reviews	893	484	51	358			
	Proposals	108	46	11	51	4	4	0
	Rev/Prop	8.3	10.5	4.6	7.0			

Source: NSF Enterprise Information System 10/2/09

* The proposal totals shown in the "All Methods" category do not include the proposals shown in the "Not Reviewed" category. Proposals which are not reviewed include SGERs and grants for travel and symposia. The "Not Reviewed" category includes award and decline actions which were not reviewed, while the "Returned without Review" and "Withdrawn Proposal" categories reflect proposals which were neither awarded nor declined. There were 42,624 panel summaries in FY 2009. Reviewers participating as both a mail and a panel reviewer for the same proposal are counted as one review in this table. Withdrawn proposals include only those that underwent merit review.

Appendix 14

Methods of NSF Proposal Review

FY	Total Proposals	Mail + Panel Proposals	Mail + Panel Percent	Mail Only Proposals	Mail Only Percent	Panel Only Proposals	Panel Only Percent	Not Externally Reviewed Proposals	Not Externally Reviewed Percent
2009	45,181	14,262	32%	3,370	7%	25,835	57%	1,714	4%
2008	44,428	14,355	32%	3,662	8%	24,966	56%	1,445	3%
2007	44,577	14,292	32%	3,737	8%	25,135	56%	1,413	3%
2006	42,352	14,349	34%	3,895	9%	22,384	53%	1,724	4%
2005	41,722	13,919	33%	3,656	9%	22,735	54%	1,412	3%
2004	43,851	13,345	30%	4,496	10%	24,553	56%	1,457	3%
2003	40,075	12,683	32%	4,579	11%	21,391	53%	1,388	3%
2002	35,164	11,346	32%	4,838	14%	17,616	50%	1,364	4%

Source: NSF Enterprise Information System 10/2/09

Note: Panel-Only includes cases where panel was mailed proposal for review prior to panel.

Appendix 15

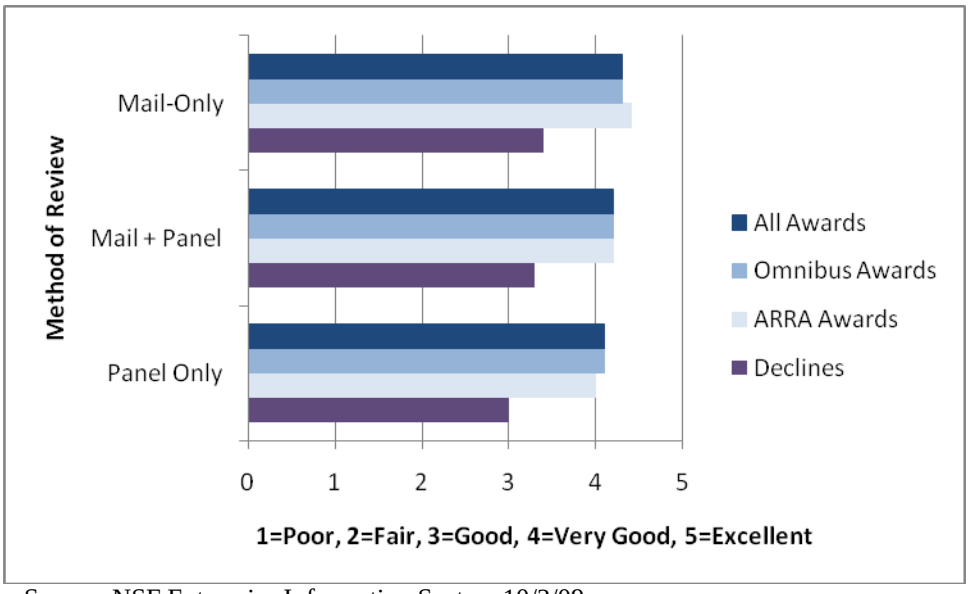
Methods of NSF Proposal Review by Directorate or Office, FY 2009

Directorate	Total Proposals	Mail + Panel		Mail-Only		Panel-Only		Not Reviewed	
		Proposals	Percent	Proposals	Percent	Proposals	Percent	Proposals	Percent
NSF	**45,181**	**14,262**	**32%**	**3,370**	**7%**	**25,835**	**57%**	**1,714**	**4%**
BIO	6,578	4,899	74%	47	1%	1,428	22%	204	3%
CISE	5,665	570	10%	98	2%	4,680	83%	317	6%
EHR	3,699	188	5%	89	2%	3,374	91%	48	1%
ENG	10,610	477	4%	87	1%	9,731	92%	315	3%
GEO	4,136	2,839	69%	644	16%	465	11%	188	5%
MPS	7,883	1,662	21%	1,870	24%	4,023	51%	328	4%
OCI	337	36	11%	40	12%	222	66%	39	12%
OISE	781	123	16%	253	32%	292	37%	113	14%
OPP	855	653	76%	33	4%	121	14%	48	6%
SBE	4,525	2,769	61%	198	4%	1,448	32%	110	2%
Other	112	46	41%	11	10%	51	46%	4	4%

Source: NSF Enterprise Information System 10/2/09

Appendix 16

Average Reviewer Ratings by Method of Review FY 2009



Source: NSF Enterprise Information System 10/2/09

Appendix 17

Accomplishment Based Renewals and Creativity Extensions

Accomplishment-Based Renewals

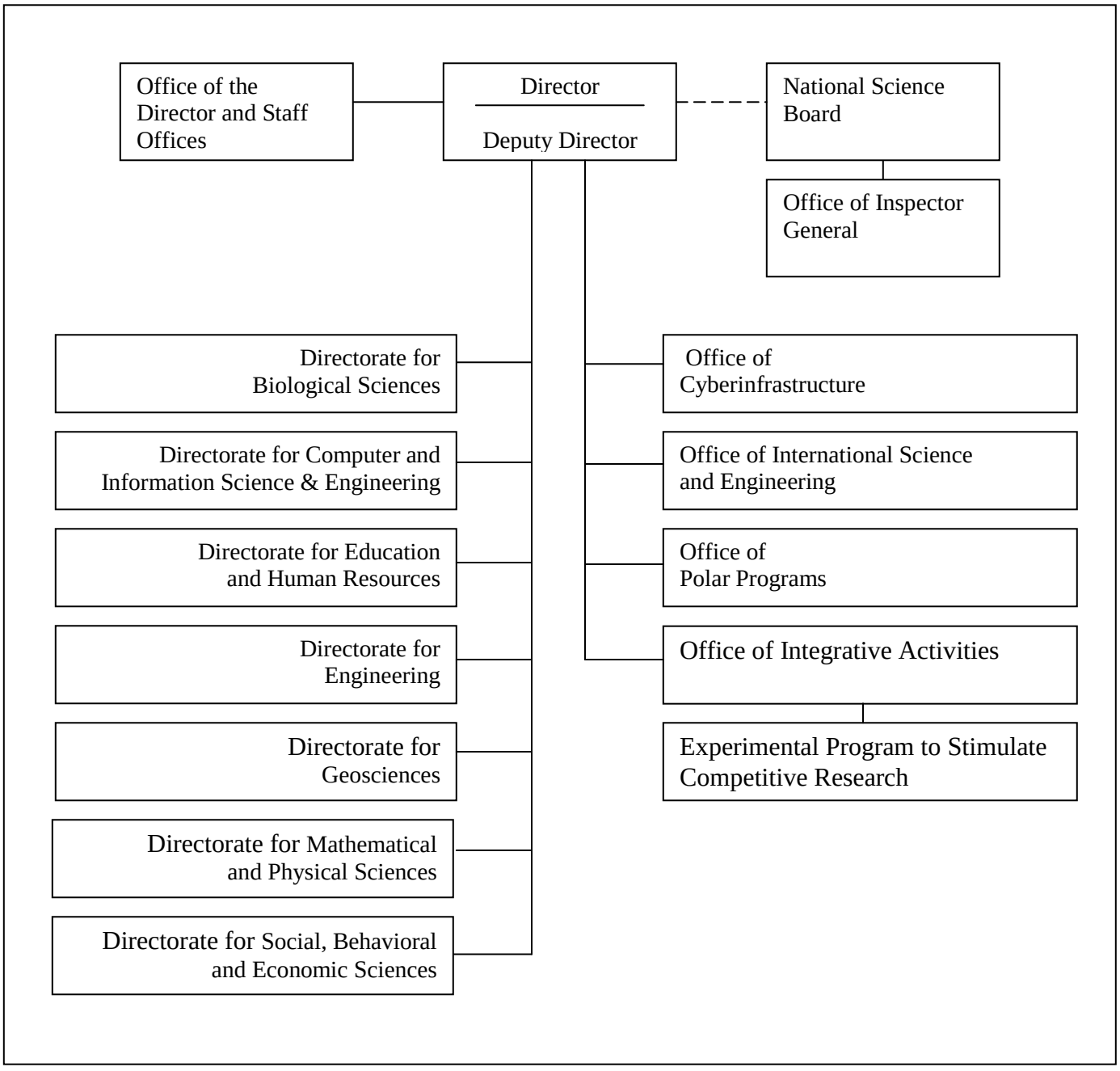
In an accomplishment-based renewal, the project description is replaced by copies of no more than six reprints of publications resulting from the research supported by NSF (or research supported by other sources that is closely related to the NSF-supported research) during the preceding three-to-five year period. In addition, a brief (not to exceed four pages) summary of plans for the proposed support period must be submitted. All other information required for NSF proposal submission remains the same. The proposals undergo merit review in the tradition of the specific program. In 2009, there were 94 requests for accomplishment-based renewals; 40 of which were awarded.

Creativity Extensions

A program officer may recommend the extension of funding for certain research grants beyond the initial period for which the grant was awarded for a period of up to two years. The objective is to offer the most creative investigators an extension to address opportunities in the same general research area, but not necessarily within the scope covered by the original/current proposal. Awards eligible for such an extension are generally three-year continuing grants. Special Creativity Extensions are usually initiated by the NSF program officer based on progress during the first two years of a three-year grant. In FY 2009, there were 55 Special Creativity Extensions granted.

Appendix 18

National Science Foundation Organization Chart



Appendix 19

Terms & Acronyms

Acronym	Definition
AC	Advisory Committee
AC/GPA	Advisory Committee for GPRA Performance Assessment
AD	NSF Assistant director
ARRA	American Recovery and Reinvestment Act of 2009
BFA	Office of Budget, Finance and Award Management
BIO	Directorate for Biological Sciences
BIIS	NSF Budget Internet Information System
CAREER	Faculty Early Career Development Program
CGI	Continuing Grant Increments
CISE	Directorate for Computer and Information Science and Engineering
COV	Committee of Visitors
EAGER	Early-concept Grants for Exploratory Research
EHR	Directorate for Education and Human Resources
EIS	Enterprise Information System
ENG	Directorate for Engineering
EPSCoR	Experimental Program to Stimulate Competitive Research
FTE	Full-Time Equivalent
FY	Fiscal Year
GEO	Directorate for Geosciences
GPRA	Government Performance and Results Act
IPAs	Temporary employees hired through Intergovernmental Personnel Act
IPAMM	Impact of Proposal & Award Management Mechanisms
IPS	Interactive Panel System
MPS	Directorate for Mathematical and Physical Sciences
NSB	National Science Board
NSF	National Science Foundation
OCI	Office of Cyberinfrastructure
OD	Office of the Director
ODS	Online Document System
OIA	Office of Integratative Activities
OIG	Office of Inspector General
OISE	Office of International Science & Engineering
OMB	Office of Management and Budget
OPP	Office of Polar Programs
PARS	Proposal, PI and Reviewer System
PART	Program Assessment Rating Tool
PI	Principal Investigator
RAPID	Grants for Rapid Response Research
R&RA	Research and Related Activities
SBE	Directorate for Social, Behavioral and Economic Sciences
SGER	Small Grants for Exploratory Research
VSEE	Visiting Scientists, Engineers and Educators