

Report to the National Science Board
on the
National Science Foundation's
Merit Review Process
Fiscal Year 2012



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FY 2012 Report on the NSF Merit Review Process

I. Executive Summary

This annual report to the National Science Board (NSB) includes data and other information about the National Science Foundation (NSF or the Foundation) Merit Review Process for fiscal year (FY) 2012.

In FY 2012, NSF acted on 48,613 competitively reviewed proposals. This is a decrease of about 6% from the number of proposals acted on in FY 2011, but an increase of over 52% from the number of proposals acted on in FY 2001. In FY 2012, two large divisions began requiring the submission of preliminary proposals for most programs within the divisions. The total number of full proposals and preliminary proposals acted on by NSF in FY 2012 (53,556) exceeded the total number of full proposals and preliminary proposals acted on in FY 2011 (52,491) by 2%.

The Foundation made 11,524 awards in FY 2012, 3% more than in FY 2011 but only 16% more than in FY 2001. This corresponds to a 24% success rate for proposals. As indicated by data in **Appendix 1**, the average funding rate varies by NSF directorate.

In FY 2012, 80% of awards were made to academic institutions, an increase from the 76-77% range seen in recent years.

FY 2012 saw a continuation of NSF's recent emphasis on standard grants with 35% of funds being awarded as new standard grants compared to 11% as new continuing grants and 22% as continuing grant increments and supplements. In FY 2005, these numbers were 23%, 14%, and 29%, respectively.

The average number of months of salary support for individual Principal Investigators (PIs) or Co-PIs per grant per year continued its decadal downward trend and is now approximately 0.9 months. The running three-year mean number of research proposals a PI submitted before receiving an award continued its slow upward trend, reaching 2.4 over the three-year period FY 2010 – FY 2012. The moving three-year average PI success rate reached its lowest level in at least a decade, 35%, and the percentage of early-career PIs, 21%, also reached its lowest level in at least a decade.

Among proposals from PIs who provided information on their gender, race, ethnicity, or disability minority status, the proportion of proposals from PIs who identified themselves as female was 24.7%. The proportion of proposals from under-represented racial or ethnic minorities was 8.2% and the proportion from PIs with a disability was 1.5%.

The Foundation exceeded its "time to decision" goal of informing at least 70% of PIs of funding decisions within six months of receipt of their proposals. In FY 2012, 78% of all proposals were processed within six months.

Proposals that are externally reviewed are reviewed by three methods: panel only, mail + panel, and mail only. In FY 2012, 63% of proposals were reviewed by panel only, 26% by mail + panel, and 5% by mail only. These percentages are consistent with the trend over the last 10 years towards greater reliance on panels. In addition, about 5% of proposals were not reviewed externally. The latter include, for example, proposals for travel, symposia, Early Concept Grants for Exploratory Research, Grants for Rapid Response Research, and Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) Track 1 proposals. This is an increase from 3% in FY 2011. (Percentages of proposals do not sum to 100% because of rounding.)

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 about 1,900 U.S. colleges, universities and other institutions.

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 under-represented groups.³ Additional criteria, as stated in the program announcement or solicitation, may be required to highlight the specific objectives of certain programs or activities. About 95% 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 may be internally reviewed only, such as proposals for small workshops, Early-concept Grants for Exploratory Research (EAGERs), Grants for Rapid Response Research (RAPIDs), and proposals to the Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) activity⁴ (see **Section III.F9** and **Appendix 10**).

This *FY 2012 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** of the report provides summary data about proposals, awards, and funding rates. Longitudinal data are given to provide a perspective over time. **Section IV** provides information about the process by which proposals are reviewed and awarded.

In this document, two types of average are reported, the median and the arithmetic mean. The latter will be simply referred to as the mean.

¹ 42 CFR 16 §1862, available at http://www4.law.cornell.edu/uscode/html/uscode42/usc_sec_42_00001862----000-.html [Accessed 10.26.2012.]

² *NSF Grant Proposal Guide* (GPG) applicable for FY 2012 is available at: http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_index.jsp. [Accessed 10.26.2012.]

³ The language describing the merit review criteria in the Grant Proposal Guide was revised in October 2012 to incorporate new recommendations from the National Science Board. This revised language applies to proposals submitted on or after January 14, 2013, or in response to deadlines that are on or after January 14, 2013. In references to the merit review criteria, this report uses the earlier language that was applicable to proposals submitted in FY 2012.

⁴ In FY 2012, NSF inaugurated the Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) activity, making the first set of INSPIRE awards in late FY 2012. See Section III.F9.2.

III. Proposals and Awards

A. Proposals, Awards, and Proposal Success Rates

Table 1 shows the change in the number of proposals, number of awards, and proposal success rates through time. These data are for all competitively reviewed proposals.⁵ The reader may also be interested in success rates for research proposals which may be found in **Section III.F**. Note that 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.

In this, and many subsequent tables, results for FY 2009 and FY 2010 include funding actions made possible by the \$3 billion additional appropriation that NSF received under the American Recovery and Reinvestment Act (ARRA). Approximately \$2.5 billion of the ARRA appropriation was obligated in FY 2009. The remainder was obligated in FY 2010, primarily as facilities awards.

NSF completed action on 48,613 proposals in FY 2012, a 5.7% decrease from FY 2011, resulting in 11,524 awards, a 3% increase from FY 2011. Consequently, in FY 2012 the proposal success rate was 24%. **Appendix 1** provides proposal, award, and success rate data by NSF directorate and office.

Table 1 - NSF Proposal, Award, and Proposal Success Rate Trends

	2005	2006	2007	2008	2009	2010	2011	2012
Proposals	41,722	42,352	44,577	44,428	45,181	55,542	51,562	48,613
Awards	9,757	10,425	11,463	11,149	14,595	12,996	11,192	11,524
Success Rate	23%	25%	26%	25%	32%	23%	22%	24%

Source: NSF Enterprise Information System 10/01/12.

In addition to the full proposals in **Table 1**, in FY 2012 NSF also received 5,135 preliminary proposals, which are required for some NSF programs. This is more than a five-fold increase from FY 2011. See **Appendix 2** for additional data and information on preliminary proposals.

B. Diversity of Participation

To advance the goals described in NSF's Strategic Plan (FY 2011 – 2016), one of the core strategies described is broadening the participation in NSF's activities by members of groups that are currently under-represented in STEM disciplines. This includes ensuring the participation of researchers, educators and students from under-represented groups in NSF's programs as well as

⁵ The category of actions associated with "competitively reviewed proposals," excludes actions on preliminary proposals, contracts, IPA agreements, continuing grant increments, and similar.

preparing and engaging a diverse STEM workforce, motivated to participate at the frontiers of research and education.

Table 2 provides data on proposal, award, and success rates by PI characteristics (gender, under-represented ethnic or racial group, disability, new and prior PI status). Gender, disability, and ethnic or racial data are based on self-reported information in proposals. About 88% of PIs provided gender information and 87% provided ethnic/racial information. (90% of proposals were from PIs who provided gender information, 91% were from PIs who provided race or ethnicity information⁶, and 69% were from PIs who provided information about disability status.) The under-represented ethnic/racial PIs category in **Table 2** includes American Indian /Alaska Native, Black/ African American, Hispanic or Latino, and Native Hawaiian/Pacific Islander but excludes Asian and White-Not of Hispanic Origin.

Table 2 - Competitively Reviewed Proposals, Awards and Proposal Success Rates by PI Characteristics

		2005	2006	2007	2008	2009	2010	2011	2012
All PIs	Proposals	41,722	42,352	44,577	44,428	45,181	55,542	51,562	48,613
	Awards	9,757	10,425	11,463	11,149	14,595	12,996	11,192	11,524
	<i>Omnibus</i>					9,975	12,547		
	ARRA Funding Rate					4,620	449		
		23%	25%	26%	25%	32%	23%	22%	24%
Female PIs	Proposals	8,266	8,510	9,197	9,431	9,727	11,903	11,488	10,795
	Awards	2,107	2,233	2,493	2,556	3,297	2,982	2,602	2,775
	<i>Omnibus</i>					2,247	2,887		
	ARRA Funding Rate					1,050	95		
		25%	26%	27%	27%	34%	25%	23%	26%
Male PIs	Proposals	31,456	31,482	32,650	32,074	32,091	38,695	35,211	32,932
	Awards	7,305	7,765	8,451	7,986	10,437	9,080	7,739	7,816
	<i>Omnibus</i>					7,169	8,760		
	ARRA Funding Rate					3,268	320		
		23%	25%	26%	25%	33%	23%	22%	24%
PIs from under- represented racial or ethnic groups	Proposals	2,468	2,608	2,798	2,762	2,945	3,613	3,441	3,291
	Awards	569	638	713	670	889	812	735	718
	<i>Omnibus</i>					649	790		
	ARRA Funding Rate					240	22		
		23%	24%	25%	24%	30%	22%	21%	22%
New PIs <i>Former</i> <i>Definition</i>	Proposals	17,660	18,061	18,971	18,989	19,044	24,116	21,703	20,174
	Awards	3,001	3,240	3,660	3,622	4,706	4,024	3,322	3,408
	<i>Omnibus</i>					2,967	3,868		
	ARRA Funding Rate					1,739	156		
		17%	18%	19%	19%	25%	17%	15%	17%

⁶ However, for only 83% was the information sufficient to determine whether or not the PI belonged to an underrepresented racial or ethnic group.

		2005	2006	2007	2008	2009	2010	2011	2012
New PIs <i>Revised Definition</i> ⁷	Proposals	15,467	15,877	16,445	16,483	16,840	21,545	19,238	17,943
	Awards	2,687	2,842	3,151	3,132	4,174	3,620	2,976	3,063
	<i>Omnibus ARRA Funding Rate</i>					<i>2,613 1,561</i>	<i>3,487 133</i>		
		17%	18%	19%	19%	25%	17%	15%	17%
Prior PIs <i>Former Definition</i>	Proposals	24,062	24,294	25,606	25,439	26,137	31,426	29,835	28,439
	Awards	6,756	7,185	7,803	7,527	9,889	8,972	7,849	8,116
	<i>Omnibus ARRA Funding Rate</i>					<i>7,008 2,881</i>	<i>8,679 293</i>		
		28%	30%	30%	30%	38%	29%	26%	29%
Prior PIs <i>Revised Definition</i>	Proposals	26,130	26,172	27,660	27,424	28,341	33,997	32,324	30,670
	Awards	7,070	7,475	8,202	7,892	10,421	9,376	8,216	8,461
	<i>Omnibus ARRA Funding Rate</i>					<i>7,362 3,059</i>	<i>9,060 316</i>		
		27%	29%	30%	29%	37%	28%	25%	28%
PIs with Disabilities	Proposals	454	434	448	448	470	545	543	483
	Awards	95	107	104	109	149	108	107	134
	<i>Omnibus ARRA Funding Rate</i>					<i>105 44</i>	<i>105 3</i>		
		21%	25%	23%	24%	32%	20%	20%	28%

Source: NSF Enterprise Information System, as of October 1, 2012. Historical data shown for the revised definition are based on the NSF Enterprise Information System, as of October 1, 2009.

In general, while significantly fewer proposals are received from women than men, the success rate for female PIs remains slightly higher than that for male PIs. The proportion of proposals from female PIs was 24.7% in FY 2012.⁸ The success rate for PIs from under-represented racial or ethnic groups is slightly lower than the average success rate over all PIs. The number of proposals from PIs from under-represented racial or ethnic groups remains low but has grown more rapidly than the total number of proposals submitted to NSF. The success rate for PIs who have not previously had an NSF award is significantly lower than that for PIs who have previously submitted a successful NSF proposal (17% compared to 28%). In FY 2012, the proportion of proposals from new PIs was 37% which is comparable to the proportion in recent years. The success rate for PIs with disabilities is typically similar to or slightly lower than the overall NSF success rate. FY 2012 departed from this pattern with the success rate for proposals from PIs with disabilities being approximately 28%. However, the proportion of proposals that are from PIs with disabilities is low, approximately 1.5%.

Table 3 provides data on proposal, award and success rates by PI race and ethnicity.

⁷ In FY 2009, in conjunction with NSF's implementation of the American Recovery and Reinvestment Act, NSF revised its definition of a new PI which became, "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 post-doctoral 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.

⁸ This is calculated as a percentage of the number of proposals from PIs who provided information about gender. The proportions for PIs from other under-represented groups are calculated similarly.

Table 3 – Competitively Reviewed Proposals, Awards and Success Rates, by PI Race and Ethnicity⁹

		2005	2006	2007	2008	2009	2010	2011	2012
American Indian/Alaska Native	Proposals	112	112	97	91	88	118	129	83
	Total Awards	30	32	32	23	29	28	36	18
	<i>Omnibus</i>					20	28		
	ARRA					9	0		
	Funding Rate	27%	29%	33%	25%	33%	24%	28%	22%
Black/African American	Proposals	842	915	1,034	997	1,022	1,280	1,201	1,154
	Total Awards	199	201	240	246	298	270	243	263
	<i>Omnibus</i>					233	262		
	ARRA					65	8		
	Funding Rate	24%	22%	23%	25%	29%	21%	20%	23%
Native Hawaiian/Pacific Islander	Proposals	27	28	26	30	23	38	42	40
	Total Awards	5	9	6	8	8	10	11	6
	<i>Omnibus</i>					5	8		
	ARRA					3	2		
	Funding Rate	19%	32%	23%	27%	35%	26%	26%	15%
Asian	Proposals	7,368	7,916	8,801	8,952	9,550	11,626	10,829	10,382
	Total Awards	1,302	1,530	1,801	1,780	2,465	2,124	1,907	1,914
	<i>Omnibus</i>					1,691	2,071		
	ARRA					774	53		
	Funding Rate	18%	19%	20%	20%	26%	18%	18%	18%
White	Proposals	29,928	29,861	30,676	30,217	29,975	36,153	33,200	30,596
	Total Awards	7,564	7,885	8,499	8,153	10,499	9,306	7,826	8,020
	<i>Omnibus</i>					7,144	8,958		
	ARRA					3,355	348		
	Funding Rate	25%	26%	28%	27%	35%	26%	24%	26%
Multiracial	Proposals	322	301	279	284	337	512	433	448
	Total Awards	87	78	81	76	112	118	99	113
	<i>Omnibus</i>					80	112		
	ARRA					32	6		
	Funding Rate	27%	26%	29%	27%	33%	23%	23%	25%
Hispanic or Latino	Proposals	1,471	1,525	1,639	1,611	1,755	2,092	2,019	1,934
	Total Awards	324	378	433	382	533	476	438	412
	<i>Omnibus</i>					373	465		
	ARRA					160	11		
	Funding Rate	22%	25%	26%	24%	30%	23%	22%	21%

Source: NSF Enterprise Information System, 10/01/12.

⁹ This table differs from a similar one included in recent years' reports as follows. Previously, individuals who identified a race and indicated that they were Hispanic or Latino were only counted in the Hispanic or Latino category. Now such individuals are included in both the appropriate racial group and in Hispanic or Latino. Previously, except for those who were Hispanic or Latino, individuals who identified multiple races were not included in the table. A "multiracial" category has been added to the table.

Very few PIs identify themselves as belonging to the categories American Indian/Alaska Native or Native Hawaiian/Pacific Islander. Because of the small numbers involved, the year-to-year fluctuations in success rates for these groups tend to be greater than for other ethnic groups. The proportion of submissions from under-represented racial and ethnic groups in FY 2012 (8.2%¹⁰) is smaller than their representation in the U.S. population but is similar to their representation in the full-time faculty of Ph.D. granting institutions (7.5%¹¹). Among racial and ethnic groups that submitted more than 1,000 proposals in FY 2012, the success rate is highest for the groups White (26%) and Black/African American (23%). It is lowest for Asian (18%) and Hispanic or Latino (21%). **Appendix 3** provides research proposal, award, and funding rate information by PI race, ethnicity and gender, by directorate. **Appendix 4** provides funding rate information by new PI and prior PI status, by directorate.

C. Types of Awards

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 may 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 provided in, usually annual, increments). As shown below in **Table 4**, in FY 2012, NSF devoted 35% of its total budget to new standard grants and 11% to new continuing grants.

Table 4 - Percentage of NSF Funding by Type of Award

CATEGORY	2005	2006	2007	2008	2009	2010	2011	2012
Standard Grants	23%	25%	26%	28%	44%	37%	34%	35%
New Continuing	14%	13%	14%	13%	8%	13%	11%	11%
CGIs and Supplements	29%	28%	26%	26%	18%	18%	23%	22%
Cooperative Agreements	24%	23%	22%	23%	21%	23%	23%	23%
Other	10%	11%	11%	11%	9%	9%	9%	10%

Source: NSF Enterprise Information System 11/08/12. Percentages may not sum to 100 due to rounding. ARRA awards were made as standard grants. "Other" includes contracts, fellowships, interagency agreements, and IPA agreements.

The use of standard and continuing grants allows NSF flexibility in balancing current and future obligations, and managing funding rates. For continuing grants, the initial funding increment is accompanied by a statement of intent to continue funding the project in subsequent increments (called "continuing grant increments" or CGIs)¹² 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

¹⁰ The ratio of the number of PIs in an underrepresented racial or ethnic minority to the total number of PIs who provided sufficient information to determine whether or not they belonged to such a minority.

¹¹ Based on 2008 data reported in: "Science and Engineering Indicators 2012." (NSB 12-01).

¹² While the original award is a competitive action, the continuing grant increment is a non-competitive grant.

requires substantial agency involvement during the project performance period (e.g., research centers and multi-user facilities). Contracts are used to acquire products, services and studies (e.g., program evaluations) required primarily for NSF or other government use.

D. Awards by Sector/Institution

In FY 2012, of the program funds awarded by NSF, approximately 80% went to academic institutions, 12% to non-profit and other organizations, 5% to for-profit businesses, and 3% to Federal agencies and laboratories. As shown in **Table 5**, the proportion awarded to academic institutions is at its highest level in the past eight years.

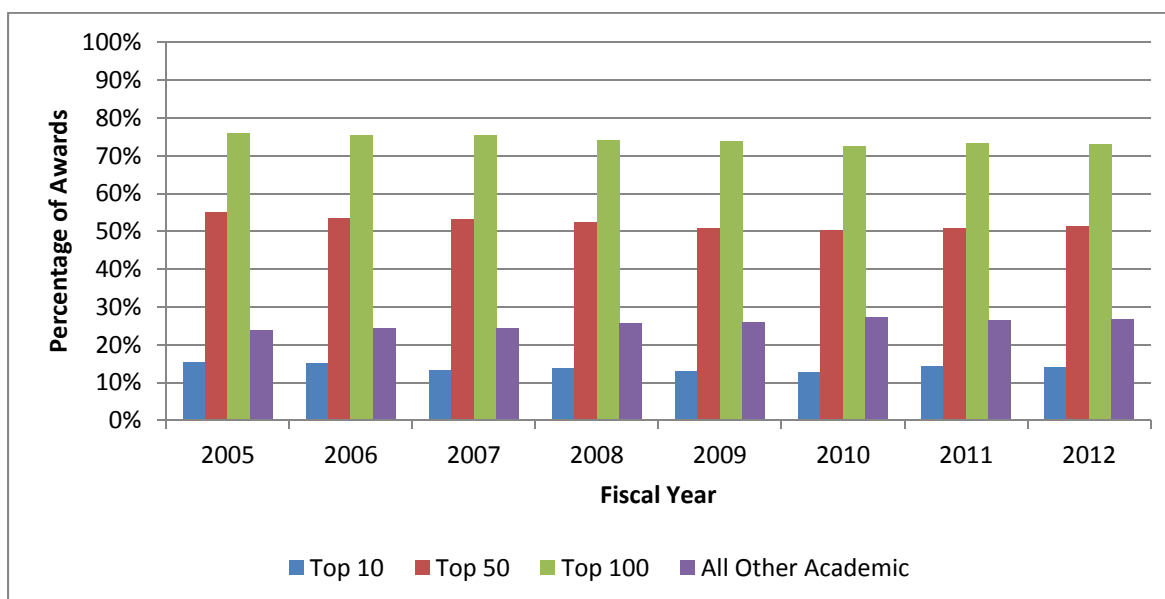
Table 5 - Distribution of Funds by Type of Organization

Sector/Institution	2005	2006	2007	2008	2009	2010	2011	2012
Academic Institutions	76%	76%	76%	76%	76%	77%	77%	80%
Non-Profit and Other Organizations	15%	15%	15%	13%	13%	11%	13%	12%
For-Profit	7%	7%	7%	8%	6%	6%	6%	5%
Federal Agencies and Laboratories	2%	2%	3%	3%	4%	5%	5%	3%

Source: NSF Enterprise Information System 10/01/12. Percentages may not sum to 100 due to rounding.

Figure 1 shows how funds to academic institutions are distributed. Academic institutions are categorized according to the proportion of NSF funding received (i.e., grouping those receiving the largest proportion of NSF funding – the top 10, 50, and 100 academic institutions).

Figure 1 - Percentage of Awards to Academic Institutions (By Proportion of Funds Received)



Source: NSF Enterprise Information System 10/01/12.

The Foundation tracks proposal success rates¹³ for different types of academic institutions. For FY 2012, the average proposal success rate was 27% for the top 100 Ph.D.-granting institutions. (classified according to the amount of FY 2012 funding received). In comparison, the rate was 17% for Ph.D.-granting institutions that are not in the top 100 NSF-funded category. The proposal success rate for four-year institutions was 25% and for two-year institutions it was 22% in FY 2012. For minority-serving institutions, the FY 2012 proposal success rate was 17%.

The Foundation 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.”¹⁴ The EPSCoR program was designed for those jurisdictions that have historically received lesser amounts of NSF Research and Development (R&D) funding. In FY 2012, 28 states, the Commonwealth of Puerto Rico, the U.S. Virgin Islands and Guam were eligible to participate in the program. **Appendix 5** has data on proposals, awards, and proposal success rates for the EPSCoR jurisdictions.

NSF made numerous outreach presentations to institutions across the country in an effort to help increase their participation and success in NSF programs.

- Two Grants Conferences were held in FY 2012. These conferences were organized by the NSF Policy Office, and hosted by the University of Texas at Austin, TX, and by Loyola and Northwestern Universities in Chicago, IL.
- 8 “NSF Days,” organized by the Office of Legislative and Public Affairs, were held throughout FY 2012 in New York, Pennsylvania, Texas, Arkansas, Florida, North Carolina, California, and Massachusetts.

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

NSF 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 by EPSCoR, the Small Business Innovation Research (SBIR) program, and other NSF-wide programs. Some programs, for example, the NSF Innovation Corps (I-Corps), the Major Research Instrumentation (MRI) program, and the INSPIRE program, held webinars for people interested in learning more about the programs involved. Finally, Program Officers frequently conduct outreach when visiting institutions or participating in scientific meetings. NSF outreach to scientists and engineers from under-represented groups includes efforts such as workshops for tribal colleges and other minority-serving institutions.

¹³ This report uses the term “proposal success rate” to refer to the rate at which submitted proposals are successful in obtaining funding. For example, if a program processed 200 proposals in the year, making 50 awards and declining the remaining 150, then the “proposal success rate” for that program in that year would be 25%.

¹⁴ 42 CFR 16 §1862, http://www4.law.cornell.edu/uscode/html/uscode42/usc_sec_42_00001862----000-.html.

E. Time to Decision (Proposal Dwell Time)

It is important for applicants to receive a timely funding decision. The Foundation's FY 2012 Government Performance and Results Act performance goal calls for informing at least 70% of PIs of funding decisions (i.e. award or decline) within six months of the proposal deadline, target date, or receipt date, whichever is later. In 2012, NSF exceeded the dwell time goal with 78% of applicants informed within 6 months.¹⁵ NSF has consistently exceeded its time to decision goal with the exception of FY 2009. In FY 2009, the NSF dwell time performance measure was suspended for the last three quarters to delay processing proposals that would have been declined due to lack of funding. This enabled some of these proposals to be funded with the ARRA appropriation.

Table 6 - Proposal Dwell Time: Percentage of Proposals Processed Within 6 Months

2005	2006	2007	2008	2009*	2010	2011	2012
76%	78%	77%	78%	61%	75%	78%	78%

Source: NSF Enterprise Information System 10/01/12.

* Dwell-time goal suspended in second through fourth quarters of FY 2009.

F. Data on Research Grants

The purpose of this section is to provide data on what are 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, and education and training grants.

F1. Research Proposal, Award, & Success Rate Trends

Table 7 provides the proposal, grant, and success rate trends for NSF research grants. The number of awards made in 2012 (8,061) was lower than what was possible in 2009 (10,011) with ARRA funding, but higher than the number of awards in 2008, pre-ARRA, (6,999).

Table 7 - Research Proposals, Award and Success Rate Trends

	2005	2006	2007	2008	2009	2010	2011	2012
Proposals	31,574	31,514	33,705	33,643	35,609	42,225	41,840	38,490
Awards	6,258	6,708	7,415	6,999	10,011	8,639	7,759	8,061
<i>Omnibus</i>					6,346	8,613		
<i>ARRA</i>					3,665	26		
Success Rate	20%	21%	22%	21%	28%	20%	19%	21%

Source: NSF Enterprise Information System 10/01/12.

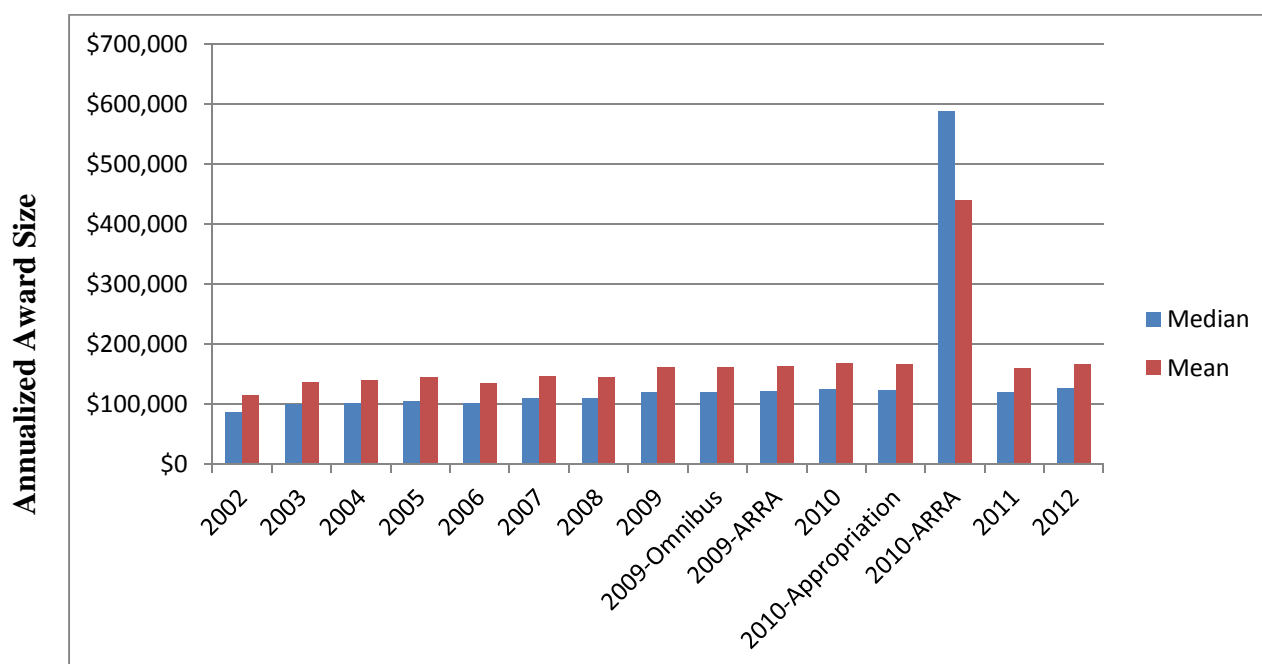
¹⁵ The dwell-time goal was exceeded by 81% of proposals that went through panel-only review and by 58% of proposals that went through mail-only review.

F2. Research Grant Size and Duration

Adequate award size and duration are important for enabling science of the highest quality and ensuring that the 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.

As indicated in **Figure 2**, in FY 2012 the annualized median award size was \$125,171 and the annualized mean award amount was \$165,733. In this figure, the 2010-ARRA averages appear unusually large; however, the sample size is small. Only 26 research awards were made in FY 2010 using the ARRA appropriation.

Figure 2 - Annualized Award Amounts for Research Grants



Source: NSF Enterprise Information System 10/01/12.

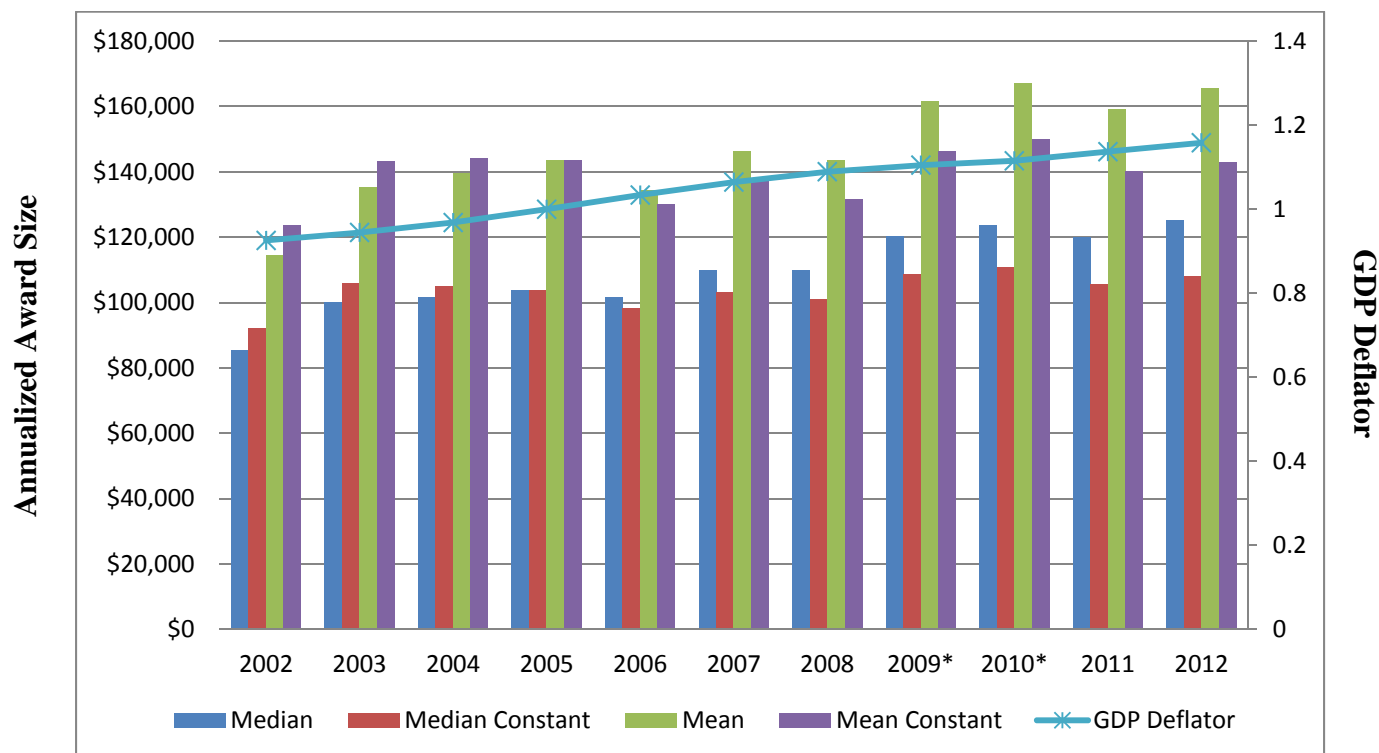
Data on award size and duration organized by NSF directorate for the last five years are presented in **Appendix 6**.

As indicated in **Figure 3**, the mean annual award size has increased by 15% from FY 2005 to FY 2012, while the mean annual award size in constant dollars has fluctuated but has remained somewhat steady over the same period.¹⁶ It should be noted that there was an increase in average

¹⁶ 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,

annual award size in FY 2009 and FY 2010, relative to FY 2008, made possible by the ARRA appropriation. The ARRA appropriation also helped to reduce out-year commitments allowing the higher annual award size to be sustained temporarily beyond FY 2010.

Figure 3 -Annualized Award Amounts for Research Grants in Actual and Constant Dollars



*FY 2009 and FY 2010 include ARRA funding.
Source: NSF Enterprise Information System 10/01/12.

As indicated in **Table 8**, the average award duration has remained relatively constant.¹⁷ Program officers must balance competing requirements, such as increasing award size, increasing duration of awards, or striving to maintain proposal success rates.

Table 8 - Mean Award Duration for Research Grants

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Duration (Years)	2.9	2.9	3.0	3.0	2.9	2.9	3.0	3.0	2.9	2.9	2.9

Source: NSF Enterprise Information System 10/01/12.

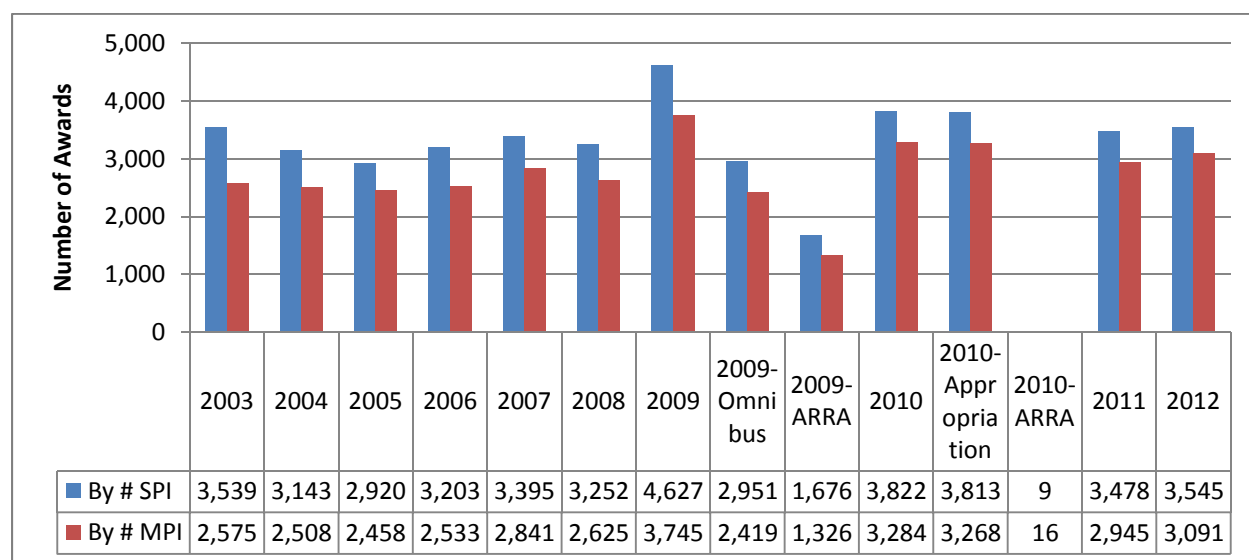
FY 2005 is the reference year (one FY 2005 dollar equals one constant dollar). This GDP deflator can be used from 1940 through 2012.

¹⁷ The number of years is rounded to one decimal place. 0.1 years represents about five weeks. This duration is the initial duration for new awards in each year and does not take into account no-cost extensions.

F3. Number of Investigators per Research Grant

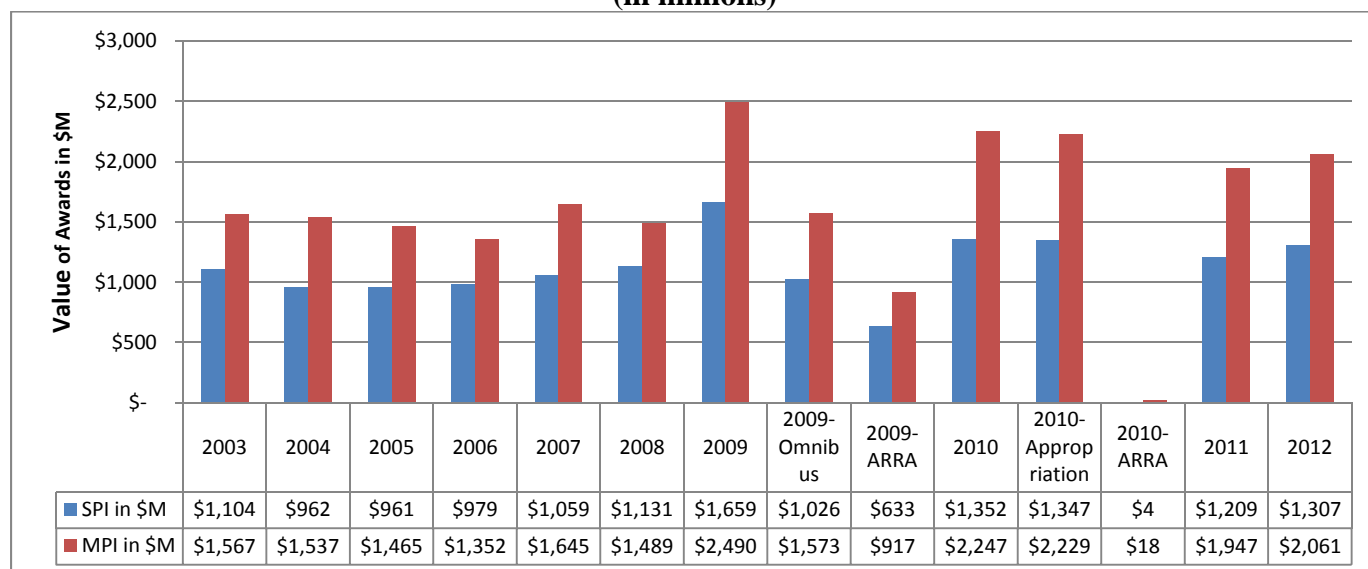
Figure 4 shows the number of research grants made to single PIs (SPI) compared to the number of research grants to projects with multiple PIs (MPI). The number of SPI grants remains greater than the number of MPI grants. **Figure 5** indicates the total amount of funds awarded to SPI research grants in comparison to the amount of funds awarded to MPI research grants.

Figure 4 - Research Grants to Single PIs (SPI) & Multiple PIs (MPI), by Number of Awards



Source: NSF Enterprise Information System 10/01/12. Note: In FY2010, a total of only 26 research awards were made using ARRA funding. (Two of these formed one collaborative project.) These are barely visible in the figure.

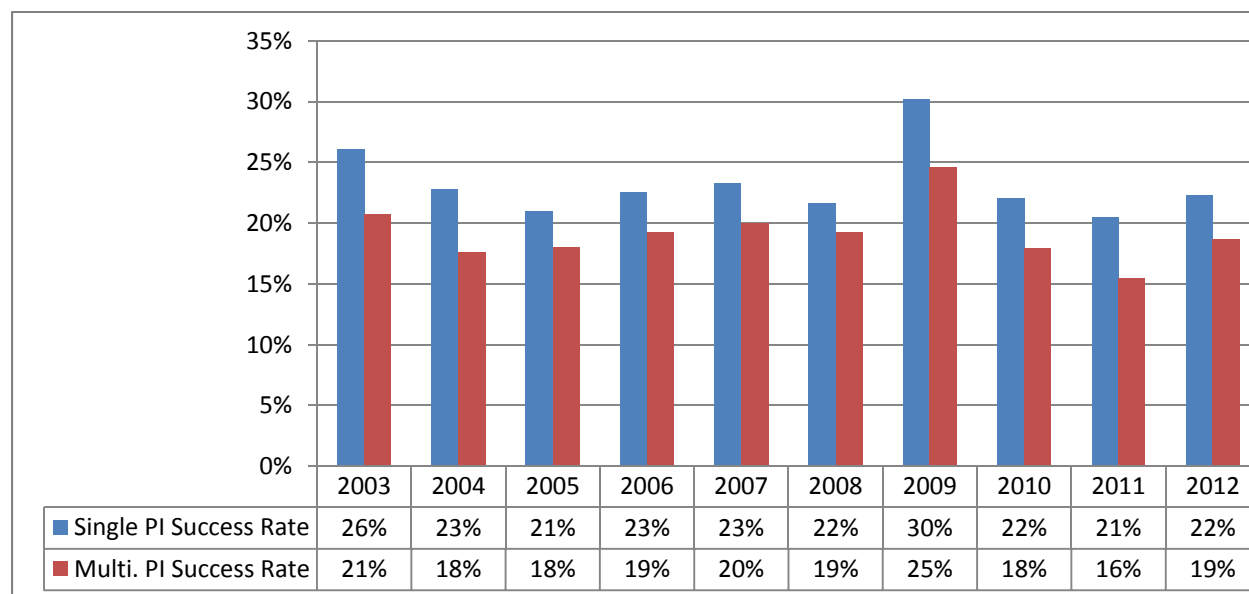
Figure 5 - Research Grants for Single PIs (SPI) & Multiple PIs (MPI), by Dollar Amount (in millions)



Source: NSF Enterprise Information System 10/01/12. Note: In FY2010, a total of only 26 research awards were made using ARRA funding. (Two of these formed one collaborative project.) These are barely visible in the figure.

Figure 6 indicates the success rates for SPI and MPI research proposals. The difference between the SPI and MPI success rate has varied over the last ten years, but the SPI success rate has been consistently higher.

Figure 6 - Success Rates for Single-PI & Multiple-PI Research Proposals



Source: NSF Enterprise Information System 10/01/12.

F4. Number of Research Grants per PI

Table 9 indicates the number of active research grants per PI averaged over the indicated time period.

Table 9 - Number of Grants per PI

Fiscal Years	One	Two	Three	Four or More
2010-2012	81%	15%	3%	1%
2010-2012, Excluding ARRA	81%	15%	3%	1%

Source: NSF Enterprise Information System 10/01/12. Percentages may not sum to 100 due to rounding.

F5. Number of People Supported on Research Grants

Table 10 shows the number of graduate students, post-doctoral associates, and senior personnel supported on NSF research grants. These data were extracted from the budget details of research grants active in the year indicated. The absolute numbers of post-doctoral associates and graduate students supported peaked in FY 2009, as a result of NSF policy on the use of ARRA funding, but have subsequently declined. From FY 2011, the number of post-doctoral associates

supported by research grants declined by 3.3%, and the number of graduate students increased by 2.8%.¹⁸

Table 10 - Number of People Supported on NSF Research Grants, by Recipient Type

	2005	2006	2007	2008	2009	2010	2011	2012	% Change, 2005 - 2012
Senior Personnel Supported	22,255	23,186	26,176	26,494	33,536	33,650	35,523	39,862	79%
Postdocs Supported	4,068	4,023	4,034	3,909	5,580	4,653	4,751	4,596	13%
Graduate Students Supported	20,442	20,949	22,777	22,936	33,371	24,554	24,855	25,550	25%

Source: NSF Enterprise Information System 10/01/12.

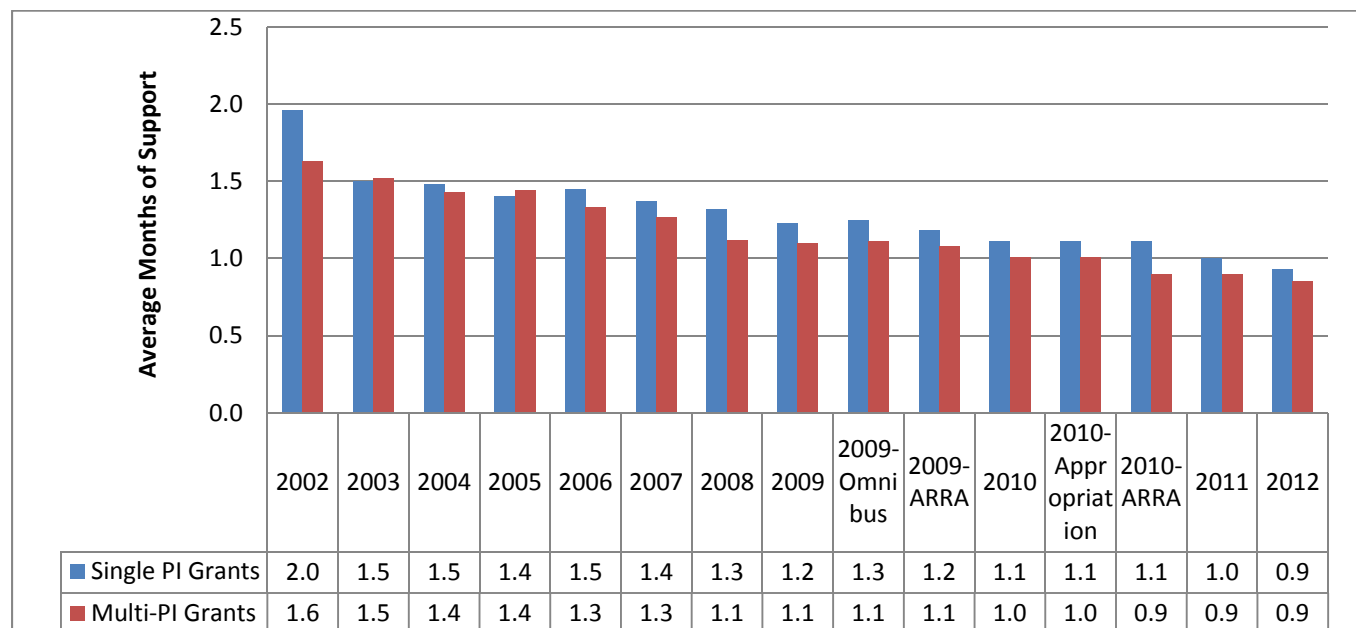
Appendix 7 provides data on the estimated number of individuals involved in NSF activities supported by all NSF active awards, including senior researchers, post-doctoral associates, teachers, and students across all educational levels. In comparison to FY 2011, the numbers of undergraduate students and K-12 students involved in NSF awards both increased while the number of K-12 teachers involved declined.¹⁹

F6. Average Number of Months of Salary Support for Single- & Multiple-PI Research Grants

Figure 7 indicates the mean number of months of salary support per individual on single PI and multiple PI research grants. Months of salary support are for PIs and Co-PIs only. There has been a dramatic change in the past decade. Since FY 2002, the average number of months of support has generally decreased for both single and multiple PIs. The per-person numbers for single and multiple PI grants were comparable in 2003-2005, but since then, PIs on multiple-PI awards consistently averaged fewer months of support than single PIs (see **Appendix 8** for directorate or office level data on months of support). The per-individual months of support per grant has dropped considerably since the period prior to 2003, with the 2012 numbers being 47.4% of the 2002 number for single PIs and 52.1% for PIs and Co-PIs on multiple PI awards. The data by directorate in **Appendix 8** shows that four directorates and OPP are comparable to NSF as a whole, CISE and ENG awards tend to provide fewer months of salary support for PIs and Co-PIs, while EHR and OCI provide more months of salary support than the NSF average.

¹⁸ The research grant category does not include most individual post-doctoral fellowships and graduate student fellowship grants.

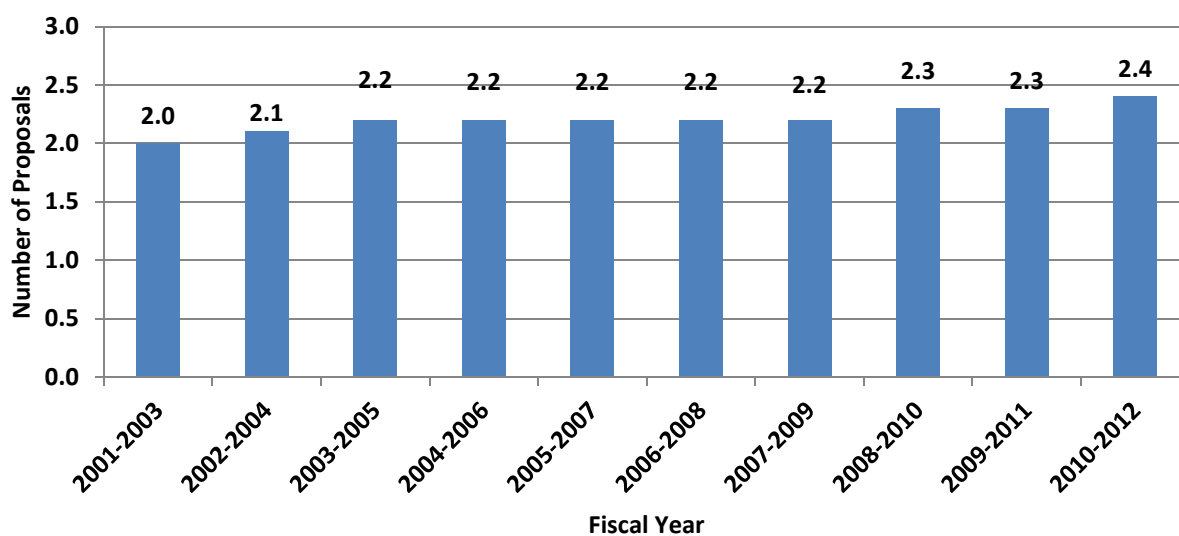
¹⁹ Beginning with Fiscal Year 2011, the methodology used to produce estimates of K-12 students involved was changed. See NSF FY2012 Agency Financial Report, Chapter 2, p. II-40&41 for more information.

Figure 7 - Average Number of Months of Salary for Single- & Multiple-PI Research Grants

Source: NSF Enterprise Information System 10/01/12.

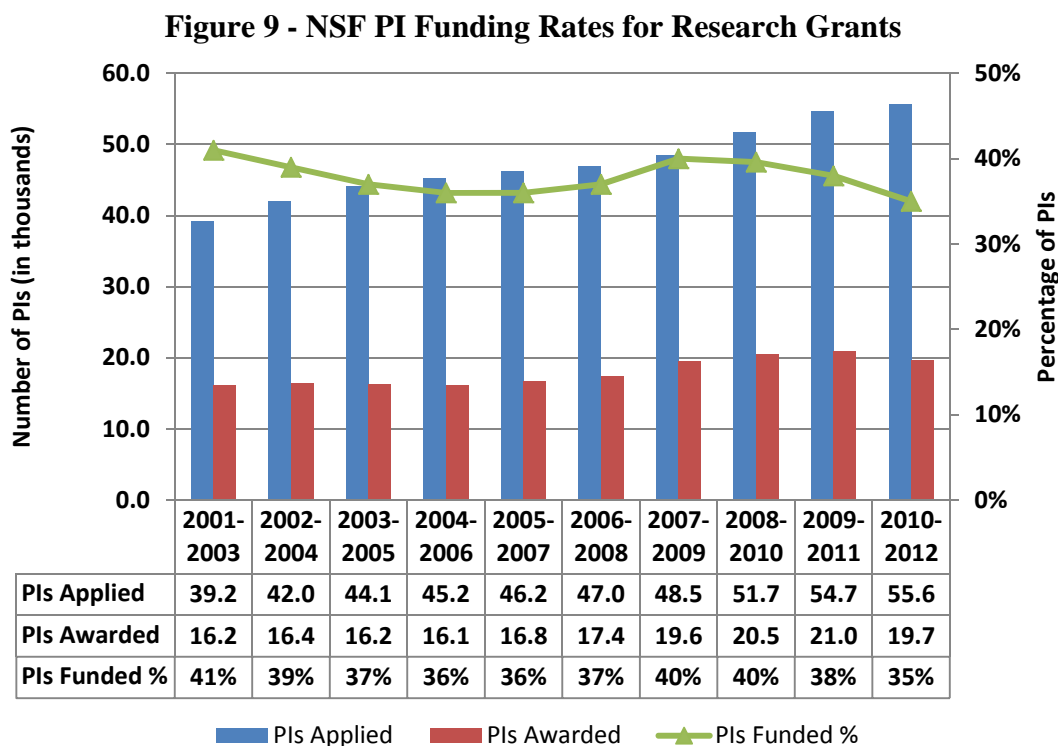
F7. Investigator Submission and Funding Rates

Figure 8 shows that, on average, the number of proposals an investigator submits before receiving an award has gradually increased over the past decade. This average is calculated across all PIs, including both new and previous PIs. **Appendix 9** provides a directorate-level breakout of the average number of research proposals per PI before receiving one award.

Figure 8 - Average Number of Research Proposals per PI before Receiving One Award

Source: NSF Enterprise Information System 10/01/12.

Figure 9 provides the funding rate for investigators in a three-year period (the number of investigators receiving a grant divided by the number of investigators submitting proposals in the same three-year window). The number of investigators submitting proposals has grown steadily over the past decade at a rate that exceeds the rate of growth of NSF's normal appropriation in inflation adjusted dollars. Consequently, the success rate of PIs has declined. The decline in PI success rate was temporarily halted by the funds appropriated under ARRA but has since resumed. In 2010-2012, 65% of PIs who submitted proposals during that three-year period did not receive any research award. The number of PIs who submitted proposals in 2010-2012 was 42% higher than the number in 2001-2003.



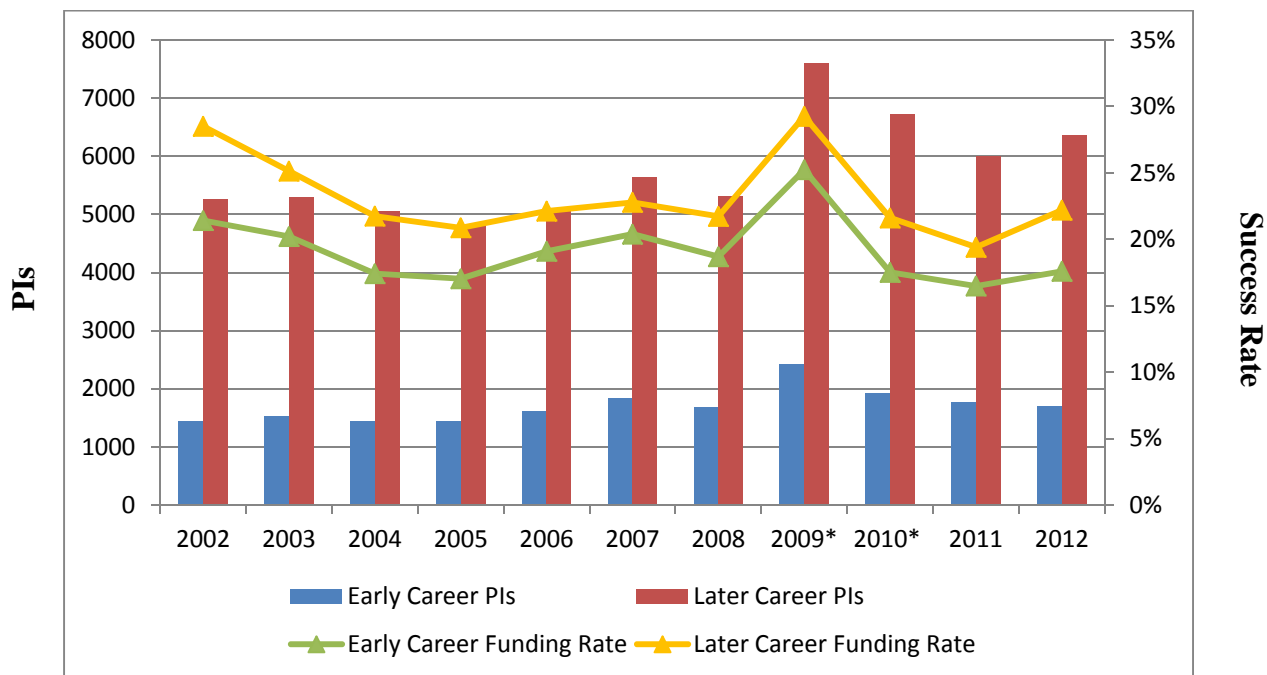
Source: NSF Enterprise Information System 10/01/12.

F8. Early and Later Career PIs

Figure 10 and **Figure 11** indicate the number and percentage of NSF PIs of research awards that are in the early or later stages of their careers. 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.

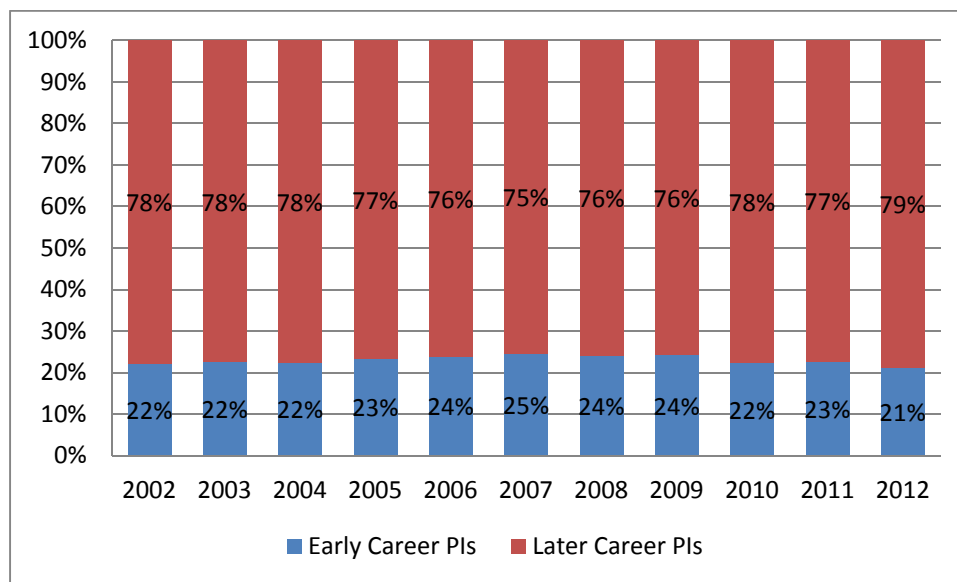
The proposal success rate for both groups recovered slightly in 2012 relative to 2011, but the gap in success rates widened to the largest gap since 2003. The percentage of early career PIs of research awards, 21%, reached its lowest level since before 2003.

Figure 10 - Number of PIs in Early & Later Stages of Career and Research Proposal Success Rates



* 2009 & 2010 include ARRA Funding.
 Source: NSF Enterprise Information System 10/01/12.

Figure 11 - Relative Proportions of PIs in Early and Later Stages of Careers



Source: NSF Enterprise Information System 10/01/12.

F9. Mechanisms to Encourage Transformative Research

The March 2007 NSB report *Enhancing Support of Transformative Research at the National Science Foundation* (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 criterion was modified, effective January 5, 2008, to make explicit reference to 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 change in the merit review criteria and NSF's effort to promote and support potentially transformative concepts.

All NSF programs encourage and support potentially transformative research proposals. NSF also has several mechanisms particularly developed to encourage the submission of certain types of potentially transformative research proposals. These include EARly-Concept Grants for Exploratory Research (EAGER), Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE), Creativity Extensions, and Accomplishment-Based Renewals. Information on the latter two types of awards may be found in **Appendix 17**.

F9.1 Small Grants for Exploratory Research (SGER), Early-concept Grants for Exploratory Research (EAGER) and Grants for Rapid Response Research (RAPID).

Since FY 1990, the Small Grants for Exploratory Research (SGER) option 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 separate funding mechanisms EAGER and RAPID, in part to emphasize the importance of funding both potentially transformative research and research requiring an urgent response:

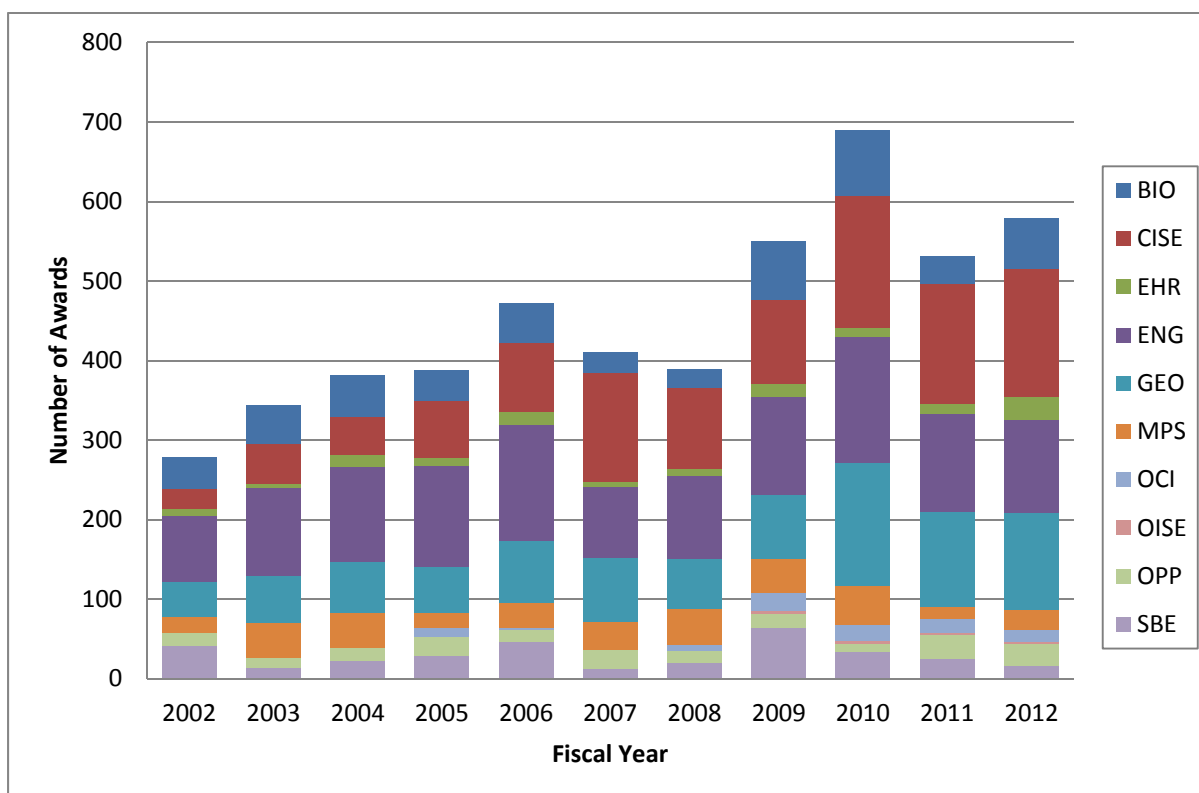
- **EARly-concept Grants for Exploratory Research (EAGER)**
The EAGER funding mechanism is used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. The work may be considered especially "high-risk/high-payoff" in the sense that it, for example, involves radically different approaches, applies new expertise, or engages novel disciplinary or interdisciplinary perspectives. Requests may be for up to \$300,000 and up to two years duration.
- **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 \$200,000 and of one year duration.

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 informed of this in the interest of maintaining the transparency of the review and recommendation process.

Figure 12 Shows the change in SGERs, EAGERs and RAPIDs from 2002 to 2012 by Directorate. Additional information on SGERs, RAPIDs, and EAGERs can be found in **Appendix 10**.

In FY 2009, the total number of SGER, RAPID and EAGER awards was 550, which is similar to previous years (see **Appendix 10** for a comparison with SGERs since FY 2002). FY 2010 saw an increase in the total, to 689, primarily because of RAPIDs awarded to enable researchers to respond to unusual events (earthquakes in Haiti and Chile, and the Gulf of Mexico oil spill). The total number of EAGER and RAPID awards decreased to 531 in FY 2011, but increased to 579 in FY 2012. There is a significant variation across directorates in the use of EAGER and RAPID awards. (See **Appendix 10**.) For example, CISE received three times as many EAGER proposals as BIO and more than five times as many as MPS. RAPID proposals are proportionally more common in GEO and OPP than in other units.

Figure 12 - SGER, EAGER and RAPID Awards by Directorate



Source: NSF Enterprise Information System, 10/01/12.

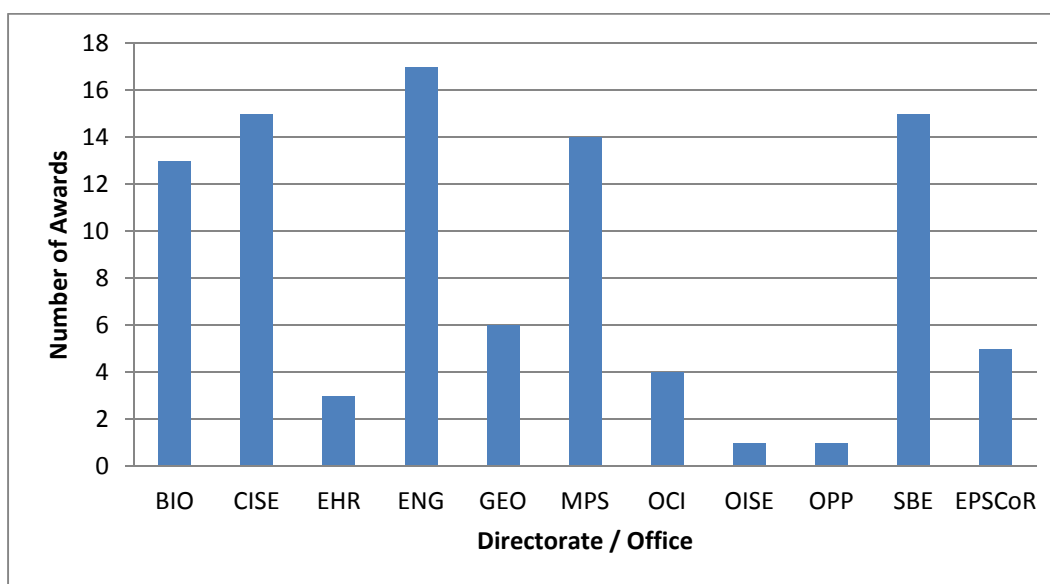
F9.2 Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) Awards.

FY 2012 saw the inauguration of the **Integrated NSF Support Promoting Inter-disciplinary Research and Education (INSPIRE)** program. INSPIRE is intended to support transformative, cross-disciplinary science, creating a new type of funding opportunity. INSPIRE is designed to attract unusually creative, high-risk / high-reward interdisciplinary proposals. No favored topics are designated, and the funding opportunity is open to creative, interdisciplinary proposals that fall within the overall span of NSF-supported areas of science, engineering, and education

research. Program managers are encouraged to use new tools, collaboration modes and techniques in the merit review process to widen the pool of prospective discoveries. The program creates new interdisciplinary research opportunities.

In FY 2012, 40 INSPIRE awards were made. Reflecting the interdisciplinary nature of these projects, all were co-funded from different units within NSF. **Figure 13** shows the number of INSPIRE awards co-funded by each directorate in FY2012. (By virtue of the way in which the INSPIRE program is organized internally, all INSPIRE awards also included co-funding by the Office of Integrative Activities that was separate from any EPSCoR contribution. This is not shown in **Figure 13**.)

Figure 13 – INSPIRE Awards Co-Funded by NSF Directorates in FY2012



Source: NSF Enterprise Information System 1/28/13.

F10. Multi-Panel Review and Inter-Divisional Co-Funding.

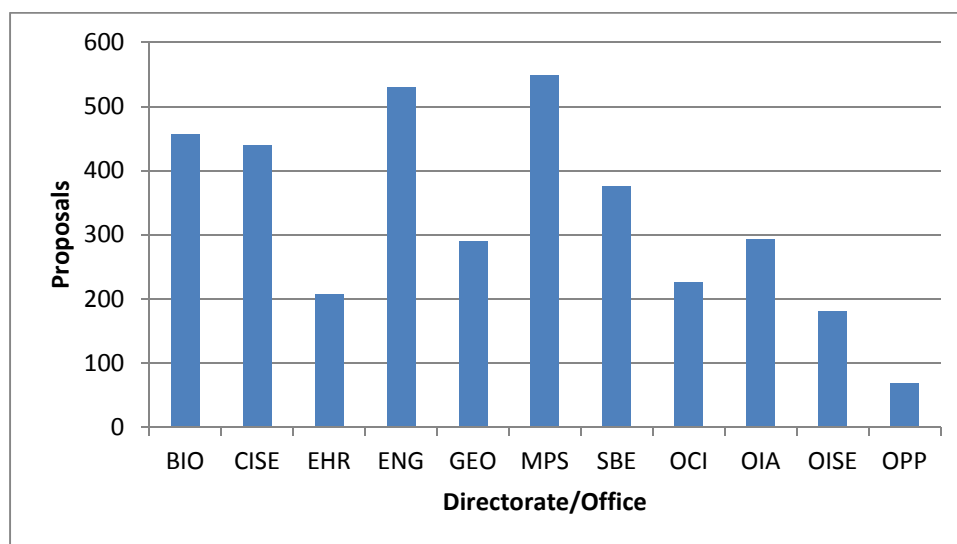
NSF does not ask PIs to identify formally whether or not a proposal is interdisciplinary, and it is not possible currently to make a direct count of the number of interdisciplinary proposals NSF receives. Indeed, a precise definition of interdisciplinarity is elusive and likely to be time-dependent. For example, a research area that, when it emerges, straddles the boundary of two different disciplines may, over time, come to be recognized as a new discipline. However, one can examine a number of characteristics of proposals, awards and the review process that may provide information on proposals that cross the boundaries of NSF's established program areas. This section of the report describes two such characteristics. It is our intention to expand the number of characteristics reported in this section in future years' reports.

Inter-Divisional Co-Funding

One indicator of the number of interdisciplinary awards is the number of awards that are funded by more than one part of NSF. **Figure 14** shows the distribution of co-funding for competitive awards that received funding from more than one division at NSF in FY 2012.

The total number of unique co-funded awards included in **Figure 14** is 1,546, which is approximately 13.4% of FY 2012 competitive awards. The average number of divisions contributing to a co-funded award is 2.33.²⁰ OIA is included separately in this figure. In FY 2012, its EPSCoR office provided co-funding for over 250 awards. OIA also co-funded 40 INSPIRE Track 1 awards. Co-funding associated with EPSCoR or international activities does not, of itself, imply interdisciplinary proposal content. If we remove awards in which co-funding is between OISE or OIA and a single other division, then the number of co-funded awards is approximately 1,189 or 10.3% of FY 2012 competitive awards.

Figure 14 - FY 2012 awards co-funded



Source: NSF Report Server 3/11/13.

Multi-Panel Review

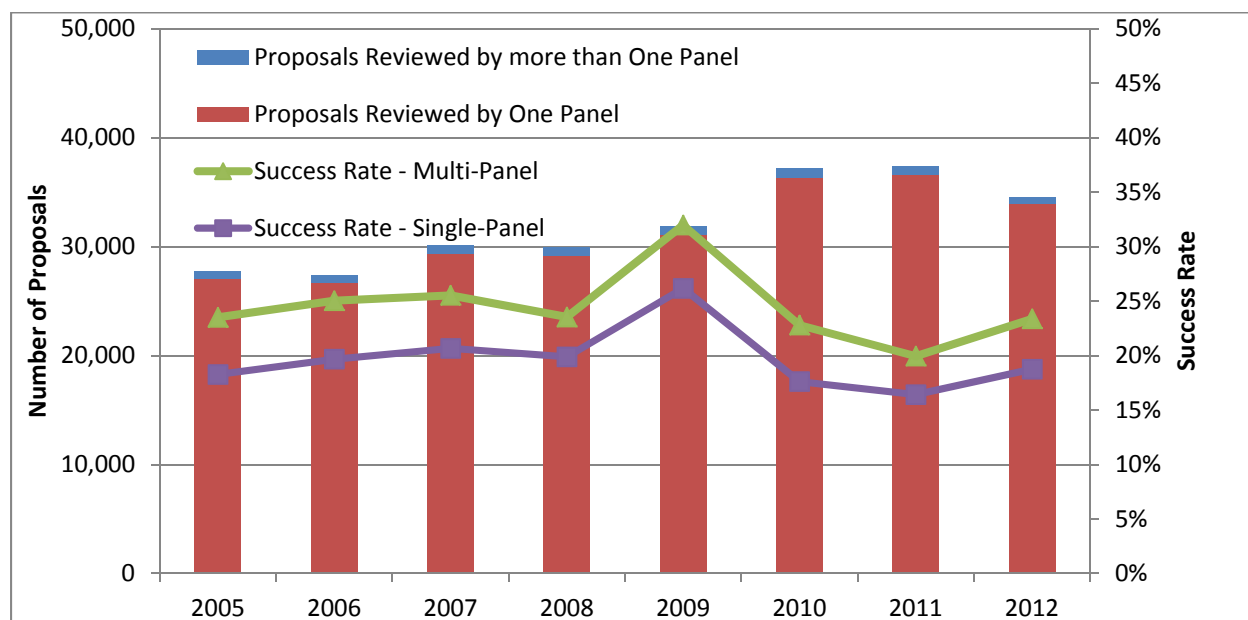
Interdisciplinary proposals are reviewed in a variety of ways. A relatively small fraction of them are reviewed by multiple panels. One question of interest is whether review by more than one panel leads to a lower success rate than review by a single panel.

Among proposals reviewed by panels, **Figure 15** shows the number of proposals that were considered by one panel (red bars), the number reviewed by more than one panel (blue bars), the

²⁰ In Figure 14, awards appear once for each distinct funding source. Awards that receive co-funding from distinct divisions within the same directorate are included. (E.g. an award co-funded by the Division of Physics and the Division of Chemistry would be counted twice in the MPS total.) The figure does not include co-funding by different programs within the same division. In general, co-funding from Directorate front offices is not counted as a separate co-funding source for Figure 14 unless the front office is the only part of the directorate co-funding an inter-directorate award.

success rate for single-panel review (purple line), and the success rate for multi-panel review (green line).

Figure 15 – Proposals Undergoing Single- and Multi-Panel Reviews and their Success Rates

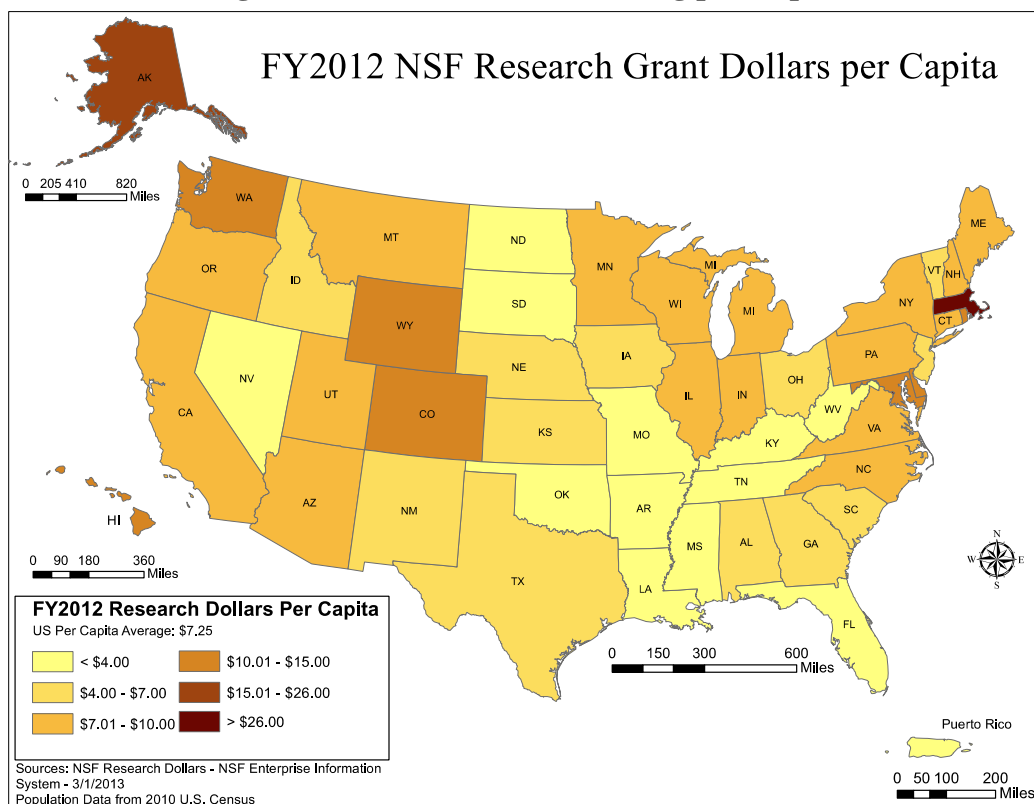


The proportion of empanelled proposals going through multi-panel review is small (1.7% of the total in FY 2012). This number was 2.7% in FY 2006 and has declined every year since then. Most multidisciplinary proposals are not reviewed by multiple panels. However, the success rate for proposals reviewed by more than one panel is consistently 4 to 6 percentage points higher than the rate for proposals that are only reviewed by a single panel.

F11. Geographic Distribution of Research Awards

Figure 16, Figure 17 and **Figure 18** show the distribution of the total value of new NSF research grants made in FY 2012 by state.²¹ In **Figure 16**, the shading indicates the NSF research funding by state for FY 2012 normalized by population based on state population data, including the District of Columbia and Puerto Rico, from the 2010 U.S. Census. The darker colors indicate a higher amount of funding per capita.

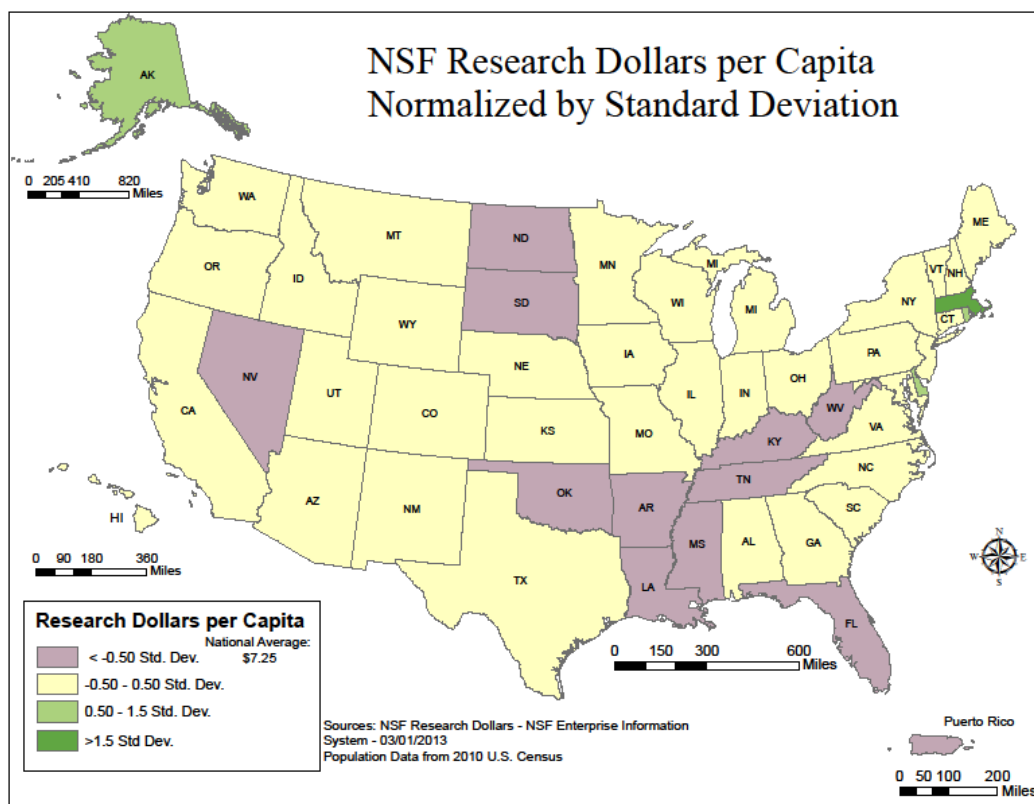
Figure 16 – NSF Research Funding per Capita



In **Figure 17**, the shading shows how the per-capita research funding varies from the national average. The national FY 2012 funding average, based on population data from the 2010 Census, is \$7.25 per capita. Light yellow indicates states for which the per capita NSF research funding amount in FY2012 was within +/- one half standard deviation of the national average. Light purple shading indicates per capita funding that is more than one half standard deviation below the national average. Green shading indicates per capita funding that is greater than one half standard deviation above the national average.

²¹ Data on research funding was accessed from the NSF Enterprise Information System on 3/1/2013.

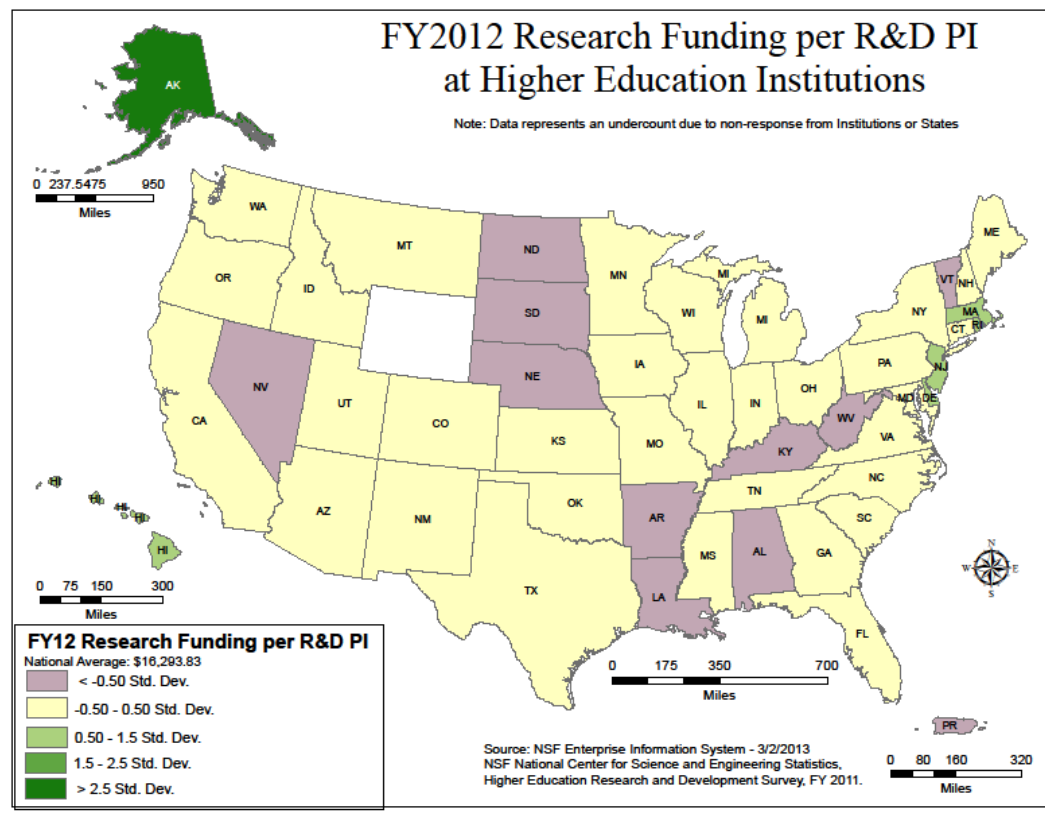
Figure 17 – NSF Research Funding per Capita, by Standard Deviation



In **Figure 18**, the shading shows the NSF research funding by state normalized by the number of researchers²² at higher education institutions. Researcher data are from NSF’s National Center for Science and Engineering Statistics Higher Education Research and Development Survey conducted in FY 2011. Not all institutions responded to the survey. The color scheme is similar to that used for **Figure 17**; light yellow indicates states for which the per researcher amount in FY 2012 was within +/- one half standard deviation of the national average. Light purple shading indicates per researcher funding that is more than one half standard deviation below the national average. Green shading indicates per researcher funding that is greater than one half standard deviation above the national average. White corresponds to a state where the Survey data did not provide a count of the number of researchers.

²² Principal Investigators on extra-mural research and development grants or contracts. This is a significantly larger population than the population of NSF-funded principal investigators. The total FY 2012 funds in NSF research awards divided by the total national population of researchers at institutions of higher education is a little over \$16,000, much less than the average annualized budget of an NSF research award. (See Section III.F.2.)

Figure 18 – NSF Research Funding per Research Faculty Member



IV. 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 2007, modified the criteria to promote potentially transformative research.²³ The NSF-wide merit review criteria that were in effect in FY 2012 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 under-represented 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*.²⁴ 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. Since 2006, the number of proposals returned without review for failing to address both NSB merit review criteria has fluctuated between 1 in 450 and 1 in 300. (See **Table 11**.)

Table 11 - Proposals Returned Without Review for Failing to Address both Merit Review Criteria

Fiscal Year	2005	2006	2007	2008	2009	2010	2011	2012
Number of Proposals	176	134	117	124	147	131	116	159
Percent of all Proposal Decisions	0.42%	0.32%	0.26%	0.28%	0.33%	0.24%	0.22%	0.33%

Source: NSF Enterprise Information System 10/01/12.

²³ During FY 2012, the National Science Board further revised the merit review criteria. The new criteria apply to proposals submitted on or after January 14, 2013 and hence are not applicable to any proposals acted on in FY 2012.

²⁴ The National Science Foundation *Grant Proposal Guide* in effect for FY 2012 may be accessed online at: http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_index.jsp.

B. Description of the Merit Review Process

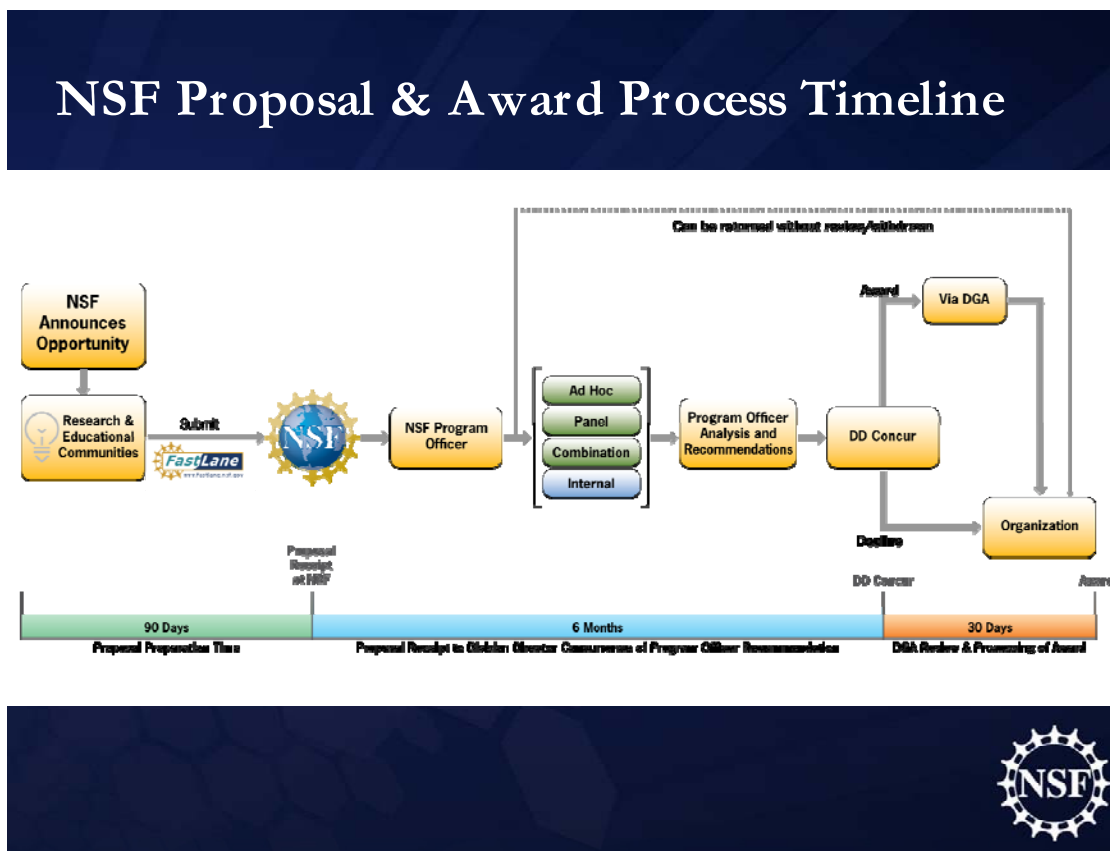
The NSF merit review process includes the steps listed below and is depicted in **Figure 19**:

- 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 with 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, INSPIRE Track 1s, and proposals for small conferences, workshops, or symposia.
 - Selecting reviewers and panel members. Selection may be based on the 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 authors' suggestions.
 - Checking for conflicts of interest. In addition to checking proposals and selecting reviewers with no apparent potential conflicts, NSF staff members provide 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 review panel (if reviewed by a panel), as provided in the individual reviews 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% or more of the awarding division's annual budget. The National Science Board (NSB) reviews recommended awards with an annual award amount at or above 1% of the awarding Directorate's prior year current plan or 0.1% of NSF's prior year total budget, whichever is greater.²⁵ In FY 2012, NSB approved 3 funding items that included 2 extensions and 1 renewal.

²⁵ 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 19 -Diagram of the NSF Merit Review Process



After a division forwards an award recommendation to the Office of Budget, Finance, and Award Management (BFA), a grants and agreements officer performs an administrative review of the recommendation. If the results of this review are satisfactory, BFA makes the award.

NSF 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 structure of the award portfolio.
- NSF directorates and offices have advisory committees comprised of scientists, engineers, administrators, and educators, from academia and industry. 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 publicly available on the NSF website.
- An external contractor performs an independent verification and validation of programmatic performance measurements, which include aspects of the merit review process.

Additional information about COVs, and NSF Advisory Committees, is given in **Appendix 11**.

C. 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 or professional training (e.g., a Ph.D., P.E., 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 and education questions;
- Capacity building in a new and promising research area;
- Potential impact on 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.

D. Review Information for Proposers and the 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 within which any given proposal was reviewed. Program officers are 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.²⁶ A

²⁶ Certain types of proposal actions are not eligible for reconsideration. See NSF *Grant Proposal Guide* (GPG) at http://www.nsf.gov/pubs/policydocs/pappguide/nsf110011/gpg_4.jsp#IVD

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 head upholds the original action, the applicant's institution may request a second reconsideration from the Foundation's Deputy Director.

NSF declines approximately 37,000 proposals per 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 2003 through FY 2012 are displayed in **Appendix 12**. NSF received 46 formal reconsideration requests in FY 2012; 43 decline decisions were upheld and 3 were reversed.

E. 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.²⁷

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

In the "mail-only" review method, reviewers are sent links to 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.
- 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 individual, narrative reviews and the average numbers of reviews per proposal obtained by the three different review methods are presented in **Table 12**.²⁸

²⁷ Exemptions that program officers may choose to exercise, for example, include proposals for EAGER, RAPID, and INSPIRE proposals, and certain categories of workshop and symposia proposals. See **Appendix 10** for more information about EAGER and RAPID proposals.

²⁸ In Table 12, we only show reviews written by individuals. It should be noted that panel discussions may, and often do, include the input of reviewers who have read the proposal but have not been asked to provide a separate

Table 12 - Reviews per Proposal, FY 2012

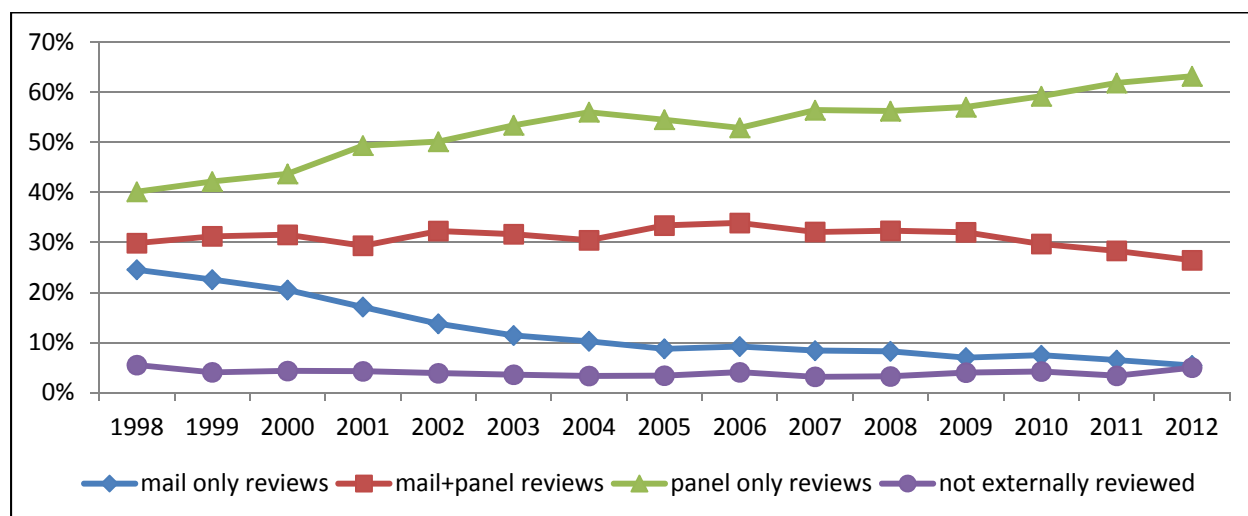
	All Methods	Mail + Panel	Mail-Only	Panel-Only
Reviews*	190,422	63,412	10,645	116,365
Proposals	46,190	12,851	2,639	30,700
Rev/Prop	4.1	4.9	4.0	3.8

Source: NSF Enterprise Information System 10/01/12.

The mail-plus-panel method had the highest number of reviews per proposal, averaging 4.9, while the panel-only method averaged 3.8. Directorate-level data for FY 2012 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 20**. The data for FY 2002 - 2012 are provided in **Appendix 14**, and **Appendix 15** provides FY 2012 data on the review methods used by directorates and offices. **Appendix 16** shows the average review ratings that result from the different methods of review.

Figure 20 - FY 1998-2012 Trend, NSF Review Method

Source: NSF Enterprise Information System, 10/01/12

written review. A panel summary therefore often represents a review perspective that is larger than that which is captured in the written reviews. The number of reviews per proposal in the last line of the table therefore underestimates the amount of reviewer input when a panel is part of the review process.

* In prior years' reports, panel summaries have been counted as a separate review. Here we have only counted written reviews prepared by individuals, whether a mail reviewer or a panelist.

There are a number of reasons for the trends in **Figure 20**. Panels allow reviewers to discuss and compare proposals. The panel review process has the advantage that different perspectives can be discussed and integrated, if appropriate. Panels tend to be used for programs that have deadlines and target dates, as opposed to unrestricted submission windows. Using only panels in the review process tends to reduce proposal processing time (time-to-decision), compared to mail-only reviews. For example, in FY 2012, 81% of all proposals reviewed by panel-only were processed within six months, compared to 71% for mail + panel and 58% for mail-only.²⁹

One 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.

In-person review panels also have some drawbacks. For example, some qualified individuals may find it difficult to be absent from home or work for the several days that might be required to travel to NSF and participate in a panel. In addition, the average number of proposals that a panelist is asked to review in a funding cycle is significantly higher than the number of reviews asked of a mail reviewer. This high workload may deter some individuals who would otherwise be willing to participate in the review process.

In recent years, “virtual panels” have emerged as an alternative to in-person review panels. In FY2012, approximately 5% of panels at NSF were held virtually. Virtual panels can help address some of the drawbacks noted with in-person panels, while retaining the comparative analysis provided by a panel review. In addition, virtual panels offer NSF staff and panelists greater flexibility in structuring the panel review. In virtual panels, panelists participate from their remote locations and interact using NSF’s Interactive Panel System (IPS), accompanied by a teleconference, video conference, or a virtual world system such as Second Life. Use of virtual panels supports NSF’s efforts to improve career-life balance and broaden the participation of highly qualified individuals in the review process. Examples of groups who may face difficulties participating in in-person review panels include: researchers with young children or who provide elder care; researchers with disabilities that make travel difficult or whose home environment provides special assistive technologies; and researchers with heavy teaching commitments or other work commitments that would make a two-day or three-day absence difficult. **Figure 21** shows the number of proposals reviewed by different types of panels since FY 2005 and the proposal ratings by panel review type (in-person, virtual, and mixed).³⁰ Mixed panels are panels in which some reviewers participate in person and some use a telephone or video connection to participate from a remote location. Mixed panels tend to have more complicated social dynamics and can be more difficult to moderate; however, they can be useful when unforeseen events prevent a reviewer from travelling to an in-person panel.

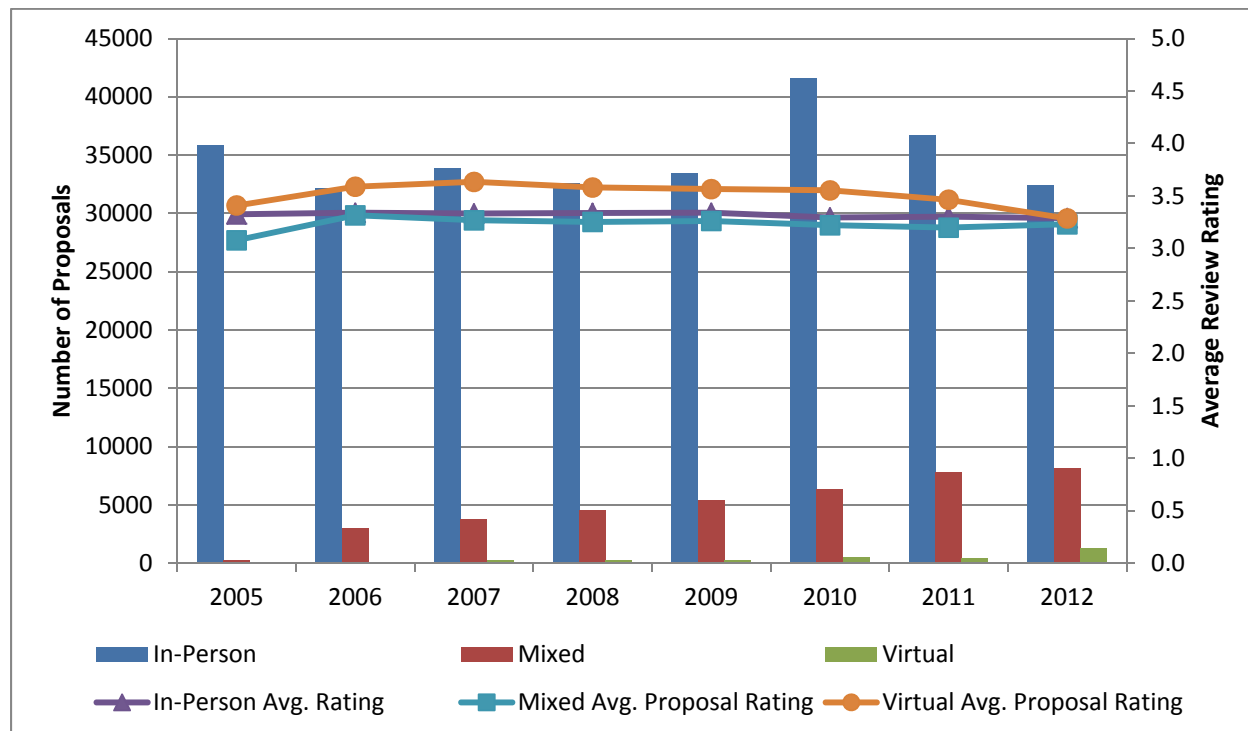
The fundamental mode of operation of panels is the same whether they are virtual, in-person or mixed; however, for a number of reasons, NSF believes that the use of a virtual panel approach

²⁹ The lower value for mail-only may be a reflection of the fact that a number of the programs that use this method do not have submission deadlines, rather than a direct consequence of the method of obtaining reviews.

³⁰ For consistency with prior years’ reports, we repeat the practice of basing this figure (and Table 13) on a subset of the competitively reviewed proposals from which certain proposals, such as fellowship proposals, have been excluded.

works best when the size of the panel and the number of proposals considered are relatively small. This is reflected in the statistics of the three types of panels shown in **Table 13**.

Figure 21 - FY 2005-2012 Usage and Proposal Rating by Panel Review Type



Source: NSF Enterprise Information System 1/29/13.

Because virtual panels, on average, review fewer proposals per panel than in-person panels, only 3% of proposals that were reviewed by panels went through virtual panels in FY 2012. In addition to avoiding the burden of travel to NSF, virtual panelists are also, on average, assigned a smaller workload than in-person panelists.

Table 13 - Data on Virtual, Mixed and In-Person Panels held in FY 2012

	Virtual	Mixed	In-Person	TOTAL
Panels	99	324	1,450	1,873
Proposals*	1,275	8,177	32,419	41,871
% of Total Panels	5%	17%	77%	100%
% of Total Proposals	3%	20%	77%	100%
Proposals/Panel	12.88	25.24	22.36	22.36
Panelists	645	3,356	13,727	17,728
Panelists/Panel	6.52	10.36	9.47	9.47
Proposals/Panelist	1.98	2.44	2.36	2.36

* Proposals that were reviewed by more than one panel are counted once for each panel to which they went. In general, collaborative projects are only included once for each panel in which they are reviewed.

Both in-person and virtual panels use the Interactive Panel System (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.

As noted above, videoconferencing is used by some programs to enhance the participation of virtual panelists. 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.

F. Data on Reviewers

The Foundation maintains a central electronic database of several hundred thousand reviewers who can potentially be drawn on to participate in mail or panel reviews. Program officers frequently add new reviewers to this database. 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 indices and other similar databases, as well as input from other reviewers.

Type of Review

During FY 2012, approximately 37,969 individuals served on panels, conducted a mail review for one or more proposals, or served in both functions. Of these individuals, approximately 13,997 (37%) served as panelists and 23,972 (63%) served as mail reviewers only. About 2,938 of the individuals who served on panels also served as mail reviewers during the year. Approximately 7,143 (19%) of these reviewers had never reviewed an NSF proposal before.

Demographics

Reviewers were from all 50 states as well as the District of Columbia, Guam, Palau, Puerto Rico and the US Virgin Islands. Approximately 4,808 reviewers were from outside the United States by address of record. 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 2012, out of a total of 37,969 distinct reviewers who returned reviews, 13,779 (36%) provided information about gender, race, ethnicity and disability status. Of those reporting these data, 5,285 (38%) indicated that they are members of a group under-represented in science and engineering. Specifically, of the reviewers who reported their demographic data, 4,364 (32%) reported being female, 1,134 (8.2%) reported being from an under-represented race or ethnic minority, and 250 (1.8%) reported a disability. Of the 1,134 reviewers that reported they are from an under-represented race or ethnic group, 815 (72%) reported Hispanic or Latino, 508 (45%) reported Black or African American, 51 (4.5%) reported American Indian or Alaskan Native, and 7 (0.6%) reported Hawaiian or Pacific Islander. (Some individuals indicated that they belonged to more than one under-represented demographic group.)

NSF has seen a modest increase in the proportion of reviewers providing demographic information. However, by regulation, the provision of demographic data is voluntary and the low response rate remains a challenge.

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 under-represented groups in science and engineering. Frequent tutorials on finding reviewers are 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 promote transparency, Chapter III.B of the *Grant Proposal Guide* describes how reviewers are selected by 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 the elements of a competitive proposal. Panelists are reimbursed for expenses, but mail reviewers receive no financial compensation. For proposals received in FY 2012, NSF requested 71,251 mail reviews, of which there were 47,645 positive responses.³¹ This 67% response rate in FY 2012 represents an increase relative to recent years. The response rate varies by program.

G. Reviewer Proposal Ratings and the Impact of Budget Constraints

All funded proposals are determined to be highly meritorious based on a combination of individual reviews, panel deliberations and program officer evaluations. On average, NSF proposals are reviewed by 4-5 reviewers, depending on the type of review mechanism used, although there is variation between programs. Each of the reviewers is chosen for specific types of expertise and adds different points of view to the decision-making process. The reviewers provide written reviews that describe the strengths and weaknesses of proposals in the context of the NSB merit review criteria. As explained in the previous section, many proposals are reviewed by a panel of experts. The panel ranks proposals into groups based on a thorough discussion of the proposals. These in-depth discussions can uncover weaknesses that might not have been reflected in the initial reviews or clarify perceived weaknesses of proposals that might not have been rated highly by the initial reviewers.

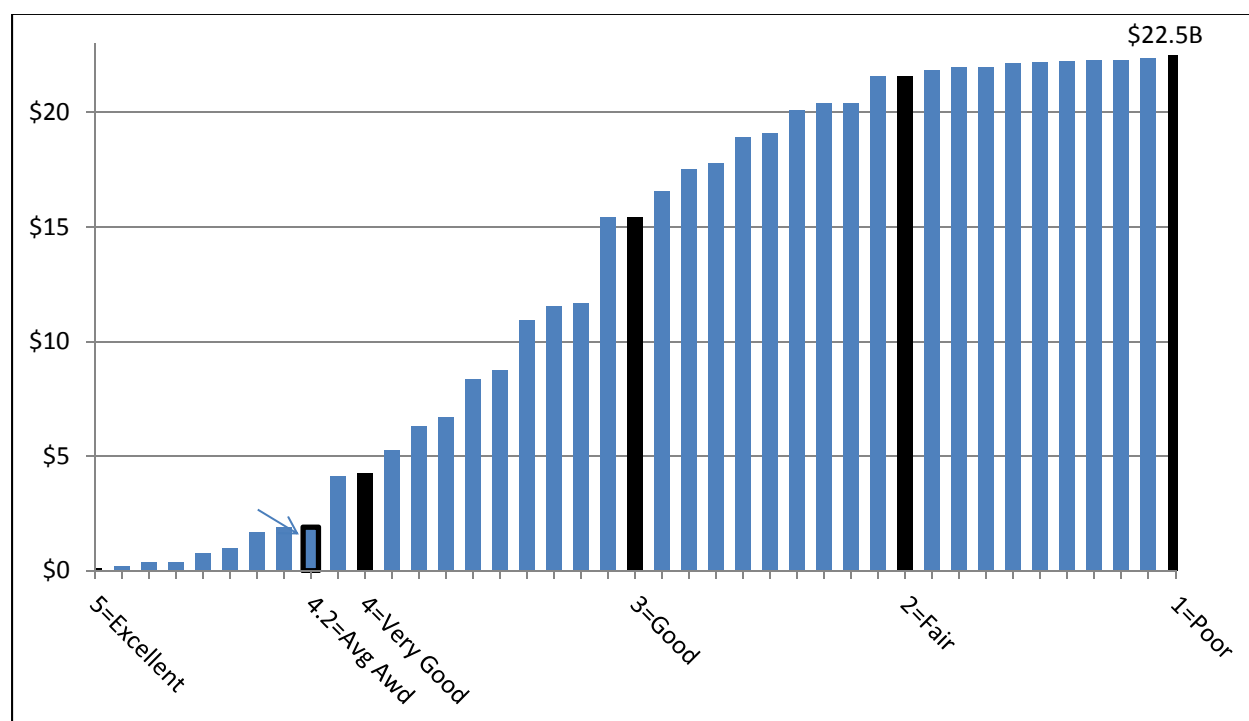
The expertise of the NSF Program Officer making the final recommendation is an important voice in the process. Reviewers' numeric ratings of proposals, while a useful indicator, are not, by themselves, a robust metric of the relative merits of proposals. Program Officers look not only at the ratings provided by reviewers but also weigh the *comments* that reviewers provide on

³¹ This number tracks requests that are recorded in the Proposal and Reviewer System (PARS). For example, when potential reviewers are sent a formal invitation via eCorrespondence, the reviewer is entered in PARS. Some potential reviewers are first invited informally by email or telephone. If they decline this initial invitation, there is usually no follow-up in eCorrespondence. Numbers given here reflect the rate of positive responses to formal invitations and overestimate the practical positive response rate.

the intrinsic merits of proposals. Program Officers also take into consideration other factors that might not have been considered by expert reviewers. For example, proposals for innovative new ideas often use methods or techniques that might be considered risky by reviewers and panelists. Such “risky” proposals may result in transformative research that accelerates the pace of discovery. Although Program Officers consider concerns about risk expressed by panels, they also see the value of funding potentially transformative research. Even if the Program Officer decides not to fully fund the proposal, proposals that do not review well at panel due to methods that are unproven or risky, can be given small awards to allow enough work for a “proof of concept”. Program Officers will also consider broader impacts that might not be obvious to reviewers, such as an infrastructure need that will serve a large number of people. There are many dimensions of portfolio balance that may influence the final recommendation. Program Officers strive to fund proposals from diverse institution types across all 50 states, from both young and experienced investigators.

A large number of potentially fundable proposals are declined each year. As shown in **Figure 22**, approximately \$1.87 billion was requested for declined proposals that had received ratings at least as high as the average rating (4.2 out of 5.0) for all awarded proposals. In FY 2002, the ratio of awards to such highly rated declines was 6.5:1; in FY 2012, that ratio was 4.7:1. Approximately \$4.25 billion was requested for declined proposals that were rated Very Good or higher in the merit review process. These declined proposals represent a rich portfolio of unfunded opportunities, proposals that, if funded, may have produced substantial research and education benefits.

Figure 22 - Cumulative Requested Amounts for Declined Proposals by Average Reviewer Rating for FY 2012 (dollars in billions)



Source: NSF Enterprise Information System, 10/01/12

H. Program Officer Characteristics and Workload

The number of program officers increased from 492 in FY 2011 to 497 in FY 2012, a 1% increase.³² Program officers can be permanent NSF employees or non-permanent employees. As shown in **Table 14**, 52% are permanent program officers and 48% are temporary. 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). In FY 2012, the number of permanent program officers decreased by 4 relative to FY 2011 while the number of IPAs increased by 14. Whether they are hired as temporary or permanent, incoming NSF program officers receive training in the merit review process.

In comparison to FY 2011, the number of male program officers increased by 2.4% and the number of female program officers decreased by 1%. The number of program officers who are White, Non-Hispanic decreased by 3% and the number that are from other racial or ethnic groups increased by 17%. As a result of these changes, at the end of FY 2012, approximately 40% of the program officers were female and approximately 25% were from a racial or ethnic minority.

Table 14 - Distribution of NSF Program Officers by Characteristics

Program Officers	Total	Percent
Total	497	100%
<i>Gender</i>		
Male	296	60%
Female	201	40%
<i>Race</i>		
Other than White, Non-Hispanic	124	25%
White, Non-Hispanic	373	75%
<i>Employment*</i>		
Permanent	258	52%
Visiting Scientists, Engineers & Educators (VSEE)	38	8%
Temporary	38	8%
Intergovernmental Personnel Act (IPA)	163	33%

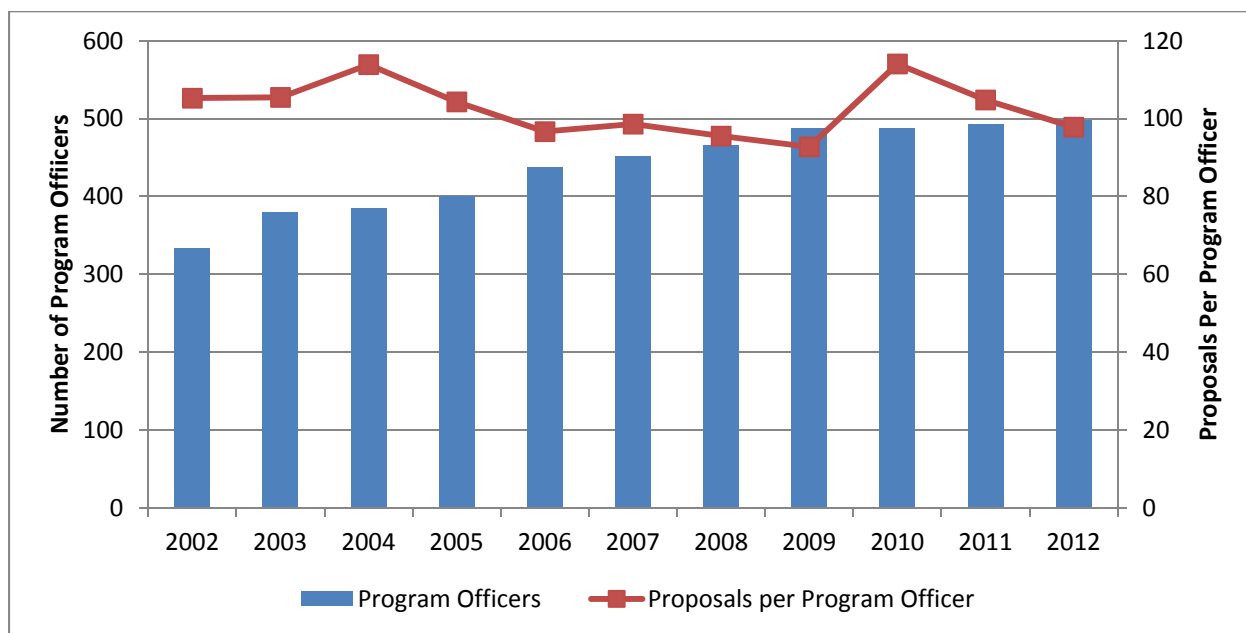
Source: NSF Division of Human Resource Management 04/03/13.

* Percentages may not sum to 100 because of rounding.

The annual fluctuations in the ratio of proposals to program officers are shown in **Figure 23**.

³² There are several possible ways of defining and counting program officers. The methodology used here is the same one used in merit review reports from recent prior years.

Figure 23 - Proposals per Program Officer



Source: NSF Division of Human Resource Management 04/03/13.

There was a slight increase in the number of program officers in FY 2012 and a 5.7% decrease from FY 2011 in the number of full proposals that were submitted. This resulted in an approximately 7% decrease in proposals processed per program officer. Figure 23 does not take into account the significant increase in the number of preliminary proposals processed by NSF in FY 2012.

Not all individuals listed as program officers in Table 14 process proposals, so the average proposal workload shown in Figure 23 is an underestimate. The growing emphasis on interdisciplinary and cross-directorate programs, together with innovative approaches to encouraging transformative research proposals, has led to a growth in coordination activities. Program officers are also tasked with an increasing number of programmatic activities, e.g., increased program accountability, training, outreach, and mentoring new staff.

In recent years, 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 members attend the NSF Program Manager Seminar, which is an orientation to NSF and the merit review process.

Appendices

Appendix 1 - Proposals, Awards and Funding Rates, by Directorate or Office

		Fiscal Year								
		2004	2005	2006	2007	2008	2009	2010	2011	2012
NSF	Proposals	43,851	41,722	42,352	44,577	44,428	45,181	55,542	51,562	48,613
	Awards	10,380	9,757	10,425	11,463	11,149	14,595	12,996	11,192	11,524
	<i>Omnibus</i>						9,975	12,547		
	<i>ARRA</i>						4,620	449		
	Funding Rate	24%	23%	25%	26%	25%	32%	23%	22%	24%
BIO	Proposals	6,063	6,475	6,617	6,728	6,598	6,578	8,059	7,439	5,269
	Awards	1,432	1,355	1,202	1,303	1,291	1,823	1,556	1,310	1,293
	<i>Omnibus</i>						1,261	1,476		
	<i>ARRA</i>						562	80		
	Funding Rate	24%	21%	18%	19%	20%	28%	19%	18%	25%
CISE	Proposals	6,276	5,238	4,843	5,744	5,567	5,664	6,487	5,996	6,952
	Awards	1,017	1,088	1,280	1,631	1,352	1,734	1,586	1,376	1,514
	<i>Omnibus</i>						1,355	1,567		
	<i>ARRA</i>						379	19		
	Funding Rate	16%	21%	26%	28%	24%	31%	24%	23%	22%
EHR	Proposals	4,644	3,699	3,254	4,248	3,887	3,699	5,055	4,660	4,281
	Awards	925	736	824	903	1,111	1,009	930	807	889
	<i>Omnibus</i>						919	908		
	<i>ARRA</i>						90	22		
	Funding Rate	20%	20%	25%	21%	29%	27%	18%	17%	21%
ENG	Proposals	8,994	8,692	9,423	9,574	9,643	10,611	13,226	12,314	11,338
	Awards	1,753	1,493	1,730	1,955	1,966	2,688	2,375	2,064	2,065
	<i>Omnibus</i>						1,771	2,321		
	<i>ARRA</i>						917	54		
	Funding Rate	19%	17%	18%	20%	20%	25%	18%	17%	18%
GEO	Proposals	4,267	4,676	4,603	4,367	4,237	4,136	4,816	4,508	4,406
	Awards	1,419	1,315	1,418	1,341	1,328	1,810	1,686	1,409	1,336
	<i>Omnibus</i>						1,039	1,642		
	<i>ARRA</i>						771	44		
	Funding Rate	33%	28%	31%	31%	31%	44%	35%	31%	30%
MPS	Proposals	7,184	7,083	7,466	7,315	7,837	7,883	9,411	8,796	9,006
	Awards	2,175	2,071	2,221	2,360	2,269	3,122	2,669	2,352	2,523
	<i>Omnibus</i>						2,004	2,529		
	<i>ARRA</i>						1,118	140		
	Funding Rate	30%	29%	30%	32%	29%	40%	28%	27%	28%

		2004	2005	2006	2007	2008	2009	2010	2011	2012
OCI ³³	Proposals	220	116	130	304	500	337	830	706	751
	Awards	47	75	42	68	97	192	169	151	235
	<i>Omnibus</i>						97	156		
	<i>ARRA</i>						95	13		
	Funding Rate	21%	65%	32%	22%	19%	57%	20%	21%	31%
OISE	Proposals	851	822	712	776	910	781	1,042	1,214	951
	Awards	386	333	319	353	357	428	395	404	333
	<i>Omnibus</i>						339	395		
	<i>ARRA</i>						89	0		
	Funding Rate	45%	41%	45%	45%	39%	55%	38%	33%	35%
OPP	Proposals	689	816	775	1,200	864	855	798	679	837
	Awards	268	281	238	370	235	416	284	296	301
	<i>Omnibus</i>						113	275		
	<i>ARRA</i>						303	9		
	Funding Rate	39%	34%	31%	31%	27%	49%	36%	44%	36%
SBE	Proposals	4,619	4,089	4,520	4,284	4,364	4,525	5,618	5,112	4,776
	Awards	939	1,004	1,144	1,143	1,126	1,337	1,257	998	1,019
	<i>Omnibus</i>						1,056	1,249		
	<i>ARRA</i>						281	8		
	Funding Rate	20%	25%	25%	27%	26%	30%	22%	20%	21%
Other ³⁴	Proposals	44	16	9	37	21	112	200	138	46
	Awards	19	6	7	36	17	36	89	25	16
	<i>Omnibus</i>						21	29		
	<i>ARRA</i>						15	60		
	Funding Rate	43%	38%	78%	97%	81%	32%	45%	18%	35%

Source: NSF Enterprise Information System 10/01/12.

³³ The Office of Cyberinfrastructure (OCI) was created in July 2005 from what had previously been the Division of Shared Cyberinfrastructure (SCI) in CISE. Data reported for “OCI” for FY 2005 and FY 2004 refer to information for the corresponding program areas in SCI.

³⁴ 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 FY 2012 statistics: 6,464 Continuing Grant Increments, 3,997 Supplements, and 610 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 full proposals are only accepted from PIs that are invited to submit them.

Number of Preliminary Proposals and Subsequent Actions

Fiscal Year	2005	2006	2007	2008	2009	2010	2011	2012
Total # Preliminary Proposals	2,120	1,874	2,842	3,203	3,856	2,883	965	5,135
Non-Binding (NB) Total*	1,302	1,279	1,540	669	1,140	1,384	357	459
NB Encouraged	512	509	662	333	519	636	128	222
NB Discouraged	790	770	878	336	621	748	229	237
Binding Total*	816	594	1,301	2,534	2,500	1,273	572	4,484
Binding Invite	246	136	252	572	685	372	245	1,236
Binding Non-invite	570	458	1,049	1,962	1,815	901	327	3,248

Source: NSF Enterprise Information System 10/01/12.

FY 2012 saw the highest number of preliminary proposals of recent years. In FY 2012, the Directorate for Biological Sciences instituted a new requirement that PIs who wished to submit full proposals to the Divisions of Environmental Biology and Integrative Organismal Systems, in response to core program solicitations, the Research at Undergraduate Institutions (RUI) solicitation, or the Long-term Research in Environmental Biology (LTREB) solicitation, must first submit a preliminary proposal. In general, programs obtain advice from external peer reviewers before making binding decisions about preliminary proposals.

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

Appendix 3 – Research Proposals, Awards and Success Rates, by PI Demographics*

Table 3.1 - FY2012 Research Proposals, Awards and Success Rates, by PI Gender

Directorate		Female	Male	Unknown	Total
BIO	Proposals	1177	2888	262	4327
	% of Total	27%	67%	6%	100%
	Awards	256	627	38	921
	Funding Rate	22%	22%	15%	21%
CISE	Proposals	1205	4873	590	6668
	% of Total	18%	73%	9%	100%
	Awards	243	931	107	1281
	Funding Rate	20%	19%	18%	19%
EHR	Proposals	670	670	229	1569
	% of Total	43%	43%	15%	100%
	Awards	84	84	24	192
	Funding Rate	13%	13%	10%	12%
ENG	Proposals	1502	6633	561	8696
	% of Total	17%	76%	6%	100%
	Awards	278	1091	83	1452
	Funding Rate	19%	16%	15%	17%
GEO	Proposals	962	2675	272	3909
	% of Total	25%	68%	7%	100%
	Awards	234	797	54	1085
	Funding Rate	24%	30%	20%	28%
MPS	Proposals	1266	5994	632	7892
	% of Total	16%	76%	8%	100%
	Awards	371	1509	126	2006
	Funding Rate	29%	25%	20%	25%
OD	Proposals	331	892	196	1419
	% of Total	23%	63%	14%	100%
	Awards	59	193	26	278
	Funding Rate	18%	22%	13%	20%
OPP	Proposals	192	555	60	807
	% of Total	24%	69%	7%	100%
	Awards	70	186	20	276
	Funding Rate	36%	34%	33%	34%
SBE	Proposals	1069	1718	422	3209
	% of Total	33%	54%	13%	100%
	Awards	195	331	50	576
	Funding Rate	18%	19%	12%	18%

Source: NSF Enterprise Information System 2/7/13.

*Demographic data are voluntarily self-reported by the PI. In FY2012, approximately 88% of PIs provided gender information and approximately 87% provided information on ethnicity or race.

Table 3.2 – FY 2012 Research Proposals, Awards and Success Rates, by PI Race and Ethnicity

Directorate		American Indian/Alaskan	Asian	Black/African-American	Hispanic	Multi-Racial	Native Hawaiian/Pac Isla	Unknown	White
BIO	Proposals	6	556	62	221	28	2	312	3,140
	% of Total	0.1%	12.8%	1.4%	5.1%	0.6%	0.0%	7.2%	72.6%
	Awards	2	84	14	54	8	0	51	708
	Funding Rate	33%	15%	23%	24%	29%	0%	16%	23%
CISE	Proposals	4	2,342	120	189	53	5	786	3,169
	% of Total	0.1%	35.1%	1.8%	2.8%	0.8%	0.1%	11.8%	47.5%
	Awards	1	393	18	30	7	0	161	671
	Funding Rate	25%	17%	15%	16%	13%	0%	20%	21%
EHR	Proposals	3	99	81	68	14	0	238	1,066
	% of Total	0.2%	6.3%	5.2%	4.3%	0.9%		15.2%	67.9%
	Awards	0	13	11	6	0		25	137
	Funding Rate	0%	13%	14%	9%	0%		11%	13%
ENG	Proposals	4	3,176	211	375	46	1	725	4,158
	% of Total	0.0%	36.5%	2.4%	4.3%	0.5%	0.0%	8.3%	47.8%
	Awards	1	454	33	50	10	0	122	782
	Funding Rate	25%	14%	16%	13%	22%	0%	17%	19%
GEO	Proposals	3	398	35	137	39	9	326	2,962
	% of Total	0.1%	10.2%	0.9%	3.5%	1.0%	0.2%	8.3%	75.8%
	Awards	0	95	7	28	5	0	68	882
	Funding Rate	0%	24%	20%	20%	13%	0%	21%	30%
MPS	Proposals	6	1,788	129	284	52	1	766	4,866
	% of Total	0.1%	22.7%	1.6%	3.6%	0.7%	0.0%	9.7%	61.7%
	Awards	1	352	24	60	12	0	156	1,401
	Funding Rate	17%	20%	19%	21%	23%	0%	20%	29%
OD	Proposals	1	226	40	73	12	0	210	857
	% of Total	0.1%	15.9%	2.8%	5.1%	0.8%		14.8%	60.4%
	Awards	0	36	5	13	3		30	191
	Funding Rate	0%	16%	13%	18%	25%		14%	22%
OPP	Proposals	4	40	6	29	3	2	62	661
	% of Total	0.5%	5.0%	0.7%	3.6%	0.4%	0.2%	7.7%	81.9%
	Awards	4	8	2	7	2	1	21	231
	Funding Rate	100%	20%	33%	24%	67%	50%	34%	35%
SBE	Proposals	10	279	81	160	22	4	473	2,180
	% of Total	0.3%	8.7%	2.5%	5.0%	0.7%	0.1%	14.7%	67.9%
	Awards	0	39	12	19	4	1	50	451
	Funding Rate	0%	14%	15%	12%	18%	25%	11%	21%

Source: NSF Enterprise Information System 2/7/13.

Appendix 4 – Proposal Success Rates of New PIs and Prior PIs, by Directorate or Office

		2005	2006	2007	2008	2009	2010	2011	2012
New PIs <i>Former Definition</i>	BIO	15%	14%	14%	15%	23%	14%	12%	18%
	CISE	15%	18%	22%	18%	24%	18%	17%	15%
	EHR	16%	21%	17%	23%	21%	14%	13%	16%
	ENG	13%	15%	17%	16%	21%	14%	13%	13%
	GEO	22%	23%	23%	24%	32%	25%	21%	19%
	MPS	20%	19%	20%	19%	29%	17%	17%	17%
	OCI	59%	24%	22%	20%	45%	15%	20%	25%
	OISE	39%	42%	43%	36%	55%	37%	30%	34%
	OPP	31%	25%	20%	19%	33%	31%	41%	30%
	SBE	18%	18%	20%	20%	21%	16%	14%	16%
New PIs <i>Revised Definition¹</i>	BIO	15%	14%	14%	15%	23%	14%	12%	18%
	CISE	15%	18%	22%	18%	25%	19%	18%	16%
	EHR	15%	20%	16%	22%	20%	13%	12%	16%
	ENG	14%	15%	17%	16%	21%	13%	13%	14%
	GEO	21%	23%	23%	23%	31%	25%	22%	18%
	MPS	20%	19%	20%	19%	29%	18%	17%	18%
	OCI	53%	9%	18%	19%	41%	12%	18%	22%
	OISE	39%	42%	44%	35%	55%	37%	30%	35%
	OPP	28%	23%	18%	19%	29%	32%	42%	32%
	SBE	18%	18%	21%	20%	22%	17%	14%	16%
Prior PIs <i>Former Definition</i>	BIO	25%	21%	24%	23%	32%	23%	21%	29%
	CISE	25%	32%	32%	28%	34%	27%	25%	25%
	EHR	24%	29%	25%	35%	34%	23%	22%	26%
	ENG	20%	21%	23%	24%	29%	22%	20%	22%
	GEO	30%	34%	33%	34%	48%	39%	35%	36%
	MPS	35%	37%	40%	35%	47%	36%	33%	35%
	OCI	70%	35%	23%	19%	63%	23%	22%	34%
	OISE	44%	51%	52%	54%	55%	42%	43%	38%
	OPP	36%	33%	35%	30%	54%	37%	45%	38%
	SBE	32%	32%	35%	32%	39%	30%	26%	27%
Prior PIs <i>Revised Definition¹</i>	BIO	25%	21%	23%	23%	31%	23%	21%	28%
	CISE	24%	31%	31%	27%	32%	26%	25%	24%
	EHR	24%	28%	24%	34%	33%	22%	21%	24%
	ENG	19%	21%	23%	23%	28%	21%	19%	21%
	GEO	30%	33%	33%	34%	47%	38%	34%	35%
	MPS	34%	36%	39%	34%	46%	35%	32%	33%
	OCI	71%	37%	24%	20%	63%	23%	23%	35%
	OISE	43%	50%	51%	55%	55%	40%	42%	36%
	OPP	37%	33%	35%	30%	54%	37%	44%	37%
	SBE	32%	32%	33%	32%	38%	29%	25%	28%

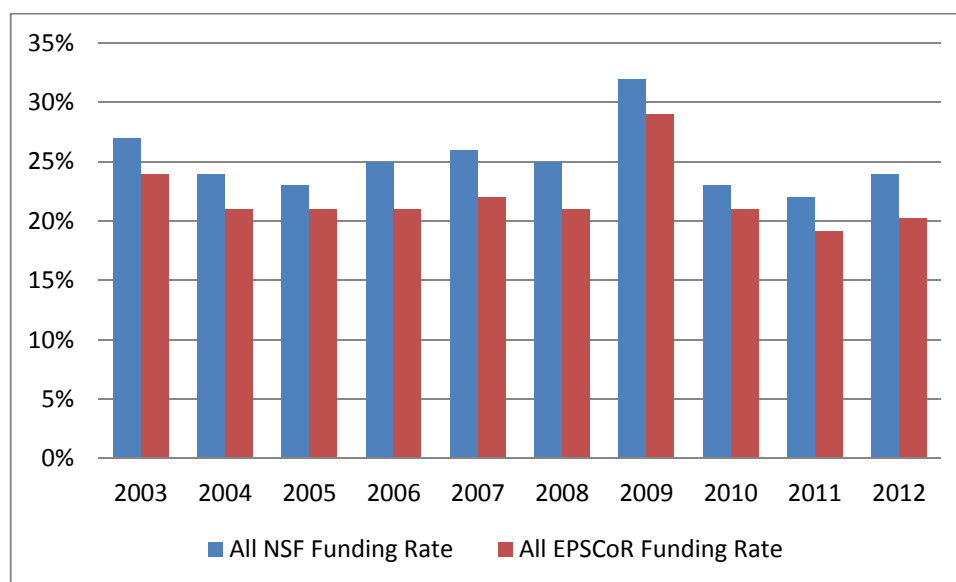
Source: NSF Enterprise Information System 10/01/12.

Appendix 5 - EPSCoR: Jurisdictions, Proposal, Award, and Funding Data

Twenty-eight states, the Commonwealth of Puerto Rico, Guam and the U.S. Virgin Islands were eligible to compete in the NSF EPSCoR program in FY 2012. The states are: Alabama, Alaska, Arkansas, Delaware, Hawaii, Idaho, Iowa, Kansas, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, West Virginia, and Wyoming.

Figure 5.1 shows the change over time for the proposal success rate of EPSCoR jurisdictions relative to the overall proposal success rate for all of the United States.

Figure 5.1 - Overall Proposal Success Rates for EPSCoR Jurisdictions and Overall NSF Proposal Success Rates



Source: NSF Enterprise Information System 2/1/13.

Table 5.2 shows the number of proposals, awards, and proposal success rate for EPSCoR jurisdictions. Below the name of the EPSCoR jurisdiction is the year that that jurisdiction joined EPSCoR.

Table 5.2 – Proposal Success Rates, by EPSCoR Jurisdiction
(Date under the state name is year state joined EPSCoR)

		2004	2005	2006	2007	2008	2009	2010	2011	2012
All NSF	Awards	10,367	9,772	10,450	11,484	11,162	14,641	12,996	11,192	11,524
	Proposals	43,816	41,723	42,374	44,593	44,438	45,181	55,542	51,562	48,613
	Funding Rate	24%	23%	25%	26%	25%	32%	23%	22%	24%
All EPSCoR Jurisdictions	Awards	1,454	1,433	1,489	1,653	1,564	2,474	2,171	1,846	1,960
	Proposals	6,815	6,802	7,037	7,392	7,349	8,476	10,513	9,640	9,680
	Funding Rate	21%	21%	21%	22%	21%	29%	21%	19%	20%
Alabama -1985	Awards	99	78	84	86	85	148	119	98	110
	Proposals	488	483	530	508	489	606	708	614	669
	Funding Rate	20%	16%	16%	17%	17%	24%	17%	16%	16%
Alaska -2000	Awards	63	52	63	75	52	77	65	71	65
	Proposals	211	203	209	246	204	186	235	213	199
	Funding Rate	30%	26%	30%	30%	25%	41%	28%	33%	33%
Arkansas -1980	Awards	45	29	47	58	36	41	60	40	33
	Proposals	236	191	209	244	197	194	276	246	229
	Funding Rate	19%	15%	22%	24%	18%	21%	22%	16%	14%
Delaware -2003	Awards	50	54	50	67	68	77	80	70	79
	Proposals	266	254	247	283	283	244	295	292	278
	Funding Rate	19%	21%	20%	24%	24%	32%	27%	24%	28%
Guam -2012	Awards	N/A	N/A	1	0	2	0	2	2	2
	Proposals	N/A	N/A	1	2	5	3	7	5	8
	Funding Rate	N/A	N/A	100%	0%	40%	0%	29%	40%	25%
Hawaii -2001	Awards	66	89	77	74	73	109	99	80	60
	Proposals	252	265	240	276	276	277	379	285	281
	Funding Rate	26%	34%	32%	27%	26%	39%	26%	28%	21%
Idaho -1987	Awards	24	31	29	34	44	44	35	37	47
	Proposals	148	140	148	161	201	168	199	202	185
	Funding Rate	16%	22%	20%	21%	22%	26%	18%	18%	25%
Iowa -2009	Awards	118	106	109	99	132	142	136	114	116
	Proposals	545	501	524	491	524	564	661	613	558
	Funding Rate	22%	21%	21%	20%	25%	25%	21%	19%	21%
Kansas -1992	Awards	70	88	76	78	82	88	92	88	91
	Proposals	388	367	393	404	387	399	464	423	402
	Funding Rate	18%	24%	19%	19%	21%	22%	20%	21%	23%

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Kentucky	Awards	72	62	52	60	62	78	71	64	63
-1985	Proposals	337	307	293	330	300	356	429	437	434
	Funding Rate	21%	20%	18%	18%	21%	22%	17%	15%	15%
Louisiana	Awards	107	100	117	96	98	132	149	102	88
-1987	Proposals	517	514	548	495	471	483	715	621	484
	Funding Rate	21%	19%	21%	19%	21%	27%	21%	16%	18%
Maine	Awards	41	50	36	58	65	60	58	42	46
-1980	Proposals	197	192	181	200	199	172	190	209	182
	Funding Rate	21%	26%	20%	29%	33%	35%	31%	20%	25%
Mississippi	Awards	43	32	48	40	34	76	72	42	43
-1987	Proposals	238	226	293	251	271	301	358	287	264
	Funding Rate	18%	14%	16%	16%	13%	25%	20%	15%	16%
Missouri	Awards	166	137	150	146	160	180	144	135	136
-2012	Proposals	760	702	693	742	699	713	795	727	715
	Funding Rate	22%	20%	22%	20%	23%	25%	18%	19%	19%
Montana	Awards	54	43	52	61	57	78	51	35	50
-1980	Proposals	194	193	242	238	232	207	251	222	204
	Funding Rate	28%	22%	21%	26%	25%	38%	20%	16%	25%
Nebraska	Awards	52	41	59	51	54	64	56	60	40
-1992	Proposals	242	226	238	250	255	248	324	309	258
	Funding Rate	21%	18%	25%	20%	21%	26%	17%	19%	16%
Nevada	Awards	31	40	42	50	43	61	39	37	29
-1985	Proposals	159	203	200	231	261	232	295	263	236
	Funding Rate	19%	20%	21%	22%	16%	26%	13%	14%	12%
New Hampshire	Awards	53	64	53	60	58	108	76	61	75
-2004	Proposals	232	280	243	240	230	251	311	282	280
	Funding Rate	23%	23%	22%	25%	25%	43%	24%	22%	27%
New Mexico	Awards	90	80	91	104	102	115	105	91	69
-2001	Proposals	378	352	348	401	444	389	506	416	399
	Funding Rate	24%	23%	26%	26%	23%	30%	21%	22%	17%
North Dakota	Awards	20	19	22	15	19	31	35	23	18
-1985	Proposals	140	154	170	139	158	141	171	161	161
	Funding Rate	14%	12%	13%	11%	12%	22%	20%	14%	11%
Oklahoma	Awards	65	55	74	66	67	112	74	79	68
-1985	Proposals	338	327	342	338	378	420	457	460	384
	Funding Rate	19%	17%	22%	20%	18%	27%	16%	17%	18%

		2004	2005	2006	2007	2008	2009	2010	2011	2012
Puerto Rico	Awards	20	16	19	32	24	37	34	19	9
-1985	Proposals	106	119	140	153	148	183	203	163	153
	Funding Rate	19%	13%	14%	21%	16%	20%	17%	12%	6%
Rhode Island	Awards	128	117	140	127	129	176	148	131	146
-2004	Proposals	340	334	353	390	357	350	442	400	393
	Funding Rate	38%	35%	40%	33%	36%	50%	33%	33%	37%
South Carolina	Awards	80	90	86	122	87	152	136	108	117
-1980	Proposals	452	453	464	523	470	527	671	650	562
	Funding Rate	18%	20%	19%	23%	19%	29%	20%	17%	21%
South Dakota	Awards	12	21	14	21	20	31	33	24	20
-1987	Proposals	93	101	97	97	116	132	184	162	150
	Funding Rate	13%	21%	14%	22%	17%	23%	18%	15%	13%
Tennessee	Awards	102	113	99	145	124	183	133	138	144
-2004	Proposals	540	585	564	642	633	608	759	709	687
	Funding Rate	19%	19%	18%	23%	20%	30%	18%	19%	21%
U.S. Virgin Islands	Awards	2	2	1	0	2	0	1	3	2
-2002	Proposals	6	5	6	4	5	1	3	11	5
	Funding Rate	33%	40%	17%	0%	40%	0%	33%	27%	40%
Utah	Awards	105	106	94	95	111	135	129	115	118
-2009	Proposals	444	474	466	449	492	464	595	596	562
	Funding Rate	24%	22%	20%	21%	23%	29%	22%	19%	21%
Vermont	Awards	21	22	16	26	27	42	23	22	24
-1985	Proposals	111	129	119	129	144	120	126	121	90
	Funding Rate	19%	17%	13%	20%	19%	35%	18%	18%	27%
West Virginia	Awards	17	16	19	21	25	33	27	21	32
-1980	Proposals	105	100	121	128	119	130	160	151	163
	Funding Rate	16%	16%	16%	16%	21%	25%	17%	14%	20%
Wyoming	Awards	27	29	23	26	27	44	35	31	20
-1985	Proposals	101	99	99	91	121	123	146	122	105
	Funding Rate	27%	29%	23%	29%	22%	36%	24%	25%	19%

Source: NSF Enterprise Information System 2/1/13

**Appendix 6 - Median and Mean Award Amounts for Research Grants,
by Directorate or Office (in Thousands) ***

		Fiscal Year											
		2005	2006	2007	2008	2009	2009- Omnibus	2009- ARRA	2010	2010- Appropriation	2010- ARRA	2011	2012
NSF	Median	\$104	\$102	\$110	\$110	\$120	\$120	\$122	\$124	\$123	\$588 [^]	\$120	\$125
	Mean	\$144	\$135	\$146	\$143	\$162	\$161	\$163	\$167	\$166	\$440 [^]	\$159	\$166
BIO	Median	\$140	\$140	\$142	\$150	\$161	\$160	\$161	\$171	\$172	\$62	\$178	\$177
	Mean	\$184	\$191	\$182	\$180	\$200	\$214	\$173	\$222	\$222	\$62	\$226	\$214
CISE	Median	\$112	\$117	\$115	\$117	\$150	\$150	\$160	\$150	\$150	\$348	\$150	\$150
	Mean	\$151	\$146	\$139	\$165	\$188	\$171	\$246	\$200	\$200	\$348	\$183	\$193
ENG	Median	\$97	\$90	\$100	\$100	\$100	\$100	\$100	\$100	\$100	N/A	\$100	\$107
	Mean	\$117	\$110	\$116	\$112	\$120	\$119	\$123	\$122	\$122	N/A	\$119	\$125
GEO	Median	\$116	\$110	\$120	\$118	\$124	\$121	\$127	\$123	\$124	\$91	\$127	\$127
	Mean	\$148	\$149	\$154	\$150	\$175	\$179	\$169	\$159	\$159	\$91	\$159	\$168
MPS	Median	\$100	\$100	\$106	\$105	\$113	\$120	\$105	\$115	\$115	N/A	\$111	\$117
	Mean	\$135	\$120	\$130	\$133	\$138	\$140	\$136	\$150	\$150	N/A	\$141	\$143
OCI	Median	\$161	\$253	\$450	\$179	\$200	\$150	\$250	\$209	\$209	N/A	\$128	\$248
	Mean	\$315	\$287	\$512	\$217	\$568	\$791	\$381	\$318	\$318	N/A	\$174	\$310
OISE	Median	\$15	\$33	\$47	\$30	\$25	\$11	\$50	\$50	\$50	N/A	\$49	\$50
	Mean	\$91	\$59	\$157	\$29	\$33	\$17	\$54	\$198	\$198	N/A	\$60	\$200
OPP	Median	\$122	\$132	\$167	\$148	\$175	\$119	\$191	\$150	\$152	\$117	\$147	\$143
	Mean	\$180	\$150	\$238	\$187	\$218	\$161	\$239	\$187	\$188	\$113	\$184	\$184
SBE	Median	\$84	\$85	\$94	\$100	\$101	\$96	\$117	\$100	\$100	\$66	\$98	\$98
	Mean	\$110	\$103	\$115	\$116	\$114	\$109	\$126	\$116	\$116	\$66	\$113	\$120

Source: NSF Enterprise Information System 10/1/12.

[^]Research awards managed by the EPSCoR office are included in the NSF totals but not in the individual directorate or office lines of the table. In FY 2010, only 26 research awards were funded with the ARRA appropriation. The median and mean for NSF are larger than the medians and means for the directorates and offices shown in the table because more than half of these awards were EPSCoR awards with annualized award amounts of approximately \$588,000.

* 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 7 - Number of People Involved in NSF-funded Activities³⁵

In FY2012, approximately 319,000 senior researchers, post-doctoral associates, teachers and students across all levels were directly involved in NSF research and education programs and activities.

	FY 2012
Senior Researchers	56,000
Other Professionals	14,000
Post-doctoral Associates	6,000
Graduate Students	42,000
Undergraduate Students	31,000
K-12 Students	125,000
K-12 Teachers	45,000
Total Number of People	319,000

Source: NSF FY2012 Agency Financial Report, Chapter 2, p. II-40.

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 curricula and teaching methods.

³⁵ These data are estimates 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. The numbers for senior researchers, other professionals, post-doctoral associates, and graduate students are more directly informed by data from award budgets than the other three categories.

**Appendix 8 - Mean Number of Months of Salary Support for Single- and Multi-PI
Research Grants, by Directorate or Office**

Directorate or Office	Type of Award	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
NSF	Single PI Grants	1.5	1.5	1.4	1.5	1.4	1.3	1.2	1.1	1.0	0.9
	Multi-PI Grants	1.5	1.4	1.4	1.3	1.3	1.1	1.1	1.0	0.9	0.9
	NSF Average	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.1	1.0	0.9
BIO	Single PI Grants	1.8	1.8	1.9	1.6	2.0	1.8	1.3	1.2	1.3	1.1
	Multi-PI Grants	2.1	1.7	2.3	2.0	2.0	1.7	1.6	1.2	1.1	1.1
	BIO Average	1.9	1.7	2.0	1.7	2.0	1.8	1.4	1.2	1.2	1.1
CISE	Single PI Grants	1.2	1.2	1.1	1.3	0.9	0.8	0.9	0.9	0.8	0.6
	Multi-PI Grants	1.0	1.0	1.0	0.8	0.8	0.7	0.8	0.9	0.9	0.7
	CISE Average	1.1	1.1	1.1	1.1	0.9	0.8	0.9	0.9	0.8	0.6
EHR	Single PI Grants	1.6	3.0	2.0	1.5	1.6	2.0	1.6	1.9	1.7	1.4
	Multi-PI Grants	2.2	1.9	2.0	1.8	1.5	1.2	1.6	1.8	2.2	1.7
	EHR Average	1.9	2.2	2.0	1.7	1.5	1.5	1.6	1.8	2.1	1.6
ENG	Single PI Grants	1.1	1.1	1.0	1.2	1.2	0.9	0.9	0.4	0.4	0.6
	Multi-PI Grants	1.2	0.9	0.9	0.7	0.8	0.7	0.7	0.4	0.3	0.3
	ENG Average	1.2	1.0	1.0	1.0	1.0	0.8	0.8	0.4	0.4	0.5
GEO	Single PI Grants	1.6	1.5	1.4	1.6	1.5	1.3	1.3	1.2	1.0	1.1
	Multi-PI Grants	1.9	1.7	1.8	1.8	1.7	1.6	1.4	1.4	1.1	1.3
	GEO Average	1.7	1.6	1.5	1.7	1.5	1.4	1.3	1.2	1.1	1.2
MPS	Single PI Grants	1.4	1.4	1.4	1.4	1.3	1.3	1.5	1.3	1.3	1.1
	Multi-PI Grants	1.6	2.0	1.4	1.5	1.5	1.4	1.5	1.2	1.2	0.9
	MPS Average	1.5	1.6	1.4	1.4	1.3	1.4	1.5	1.3	1.3	1.0
OCI	Single PI Grants	2.0	2.3	1.3	0.8	2.4	1.3	0.8	0.7	1.2	1.4
	Multi-PI Grants	1.9	2.4	1.3	0.8	2.2	1.2	1.6	0.7	0.7	1.3
	OCI Average	1.9	2.4	1.3	0.8	2.3	1.2	1.2	0.7	0.9	1.4
OISE	Single PI Grants	3.3	1.1	N/A	2.9	0.5	N/A	1.0	0.3	2.2	0.3
	Multi-PI Grants	0.9	4.0	1.1	0.6	0.9	1.0	0.9	1.8	0.8	0.7
	OISE Average	2.2	1.8	1.1	2.2	0.9	1.0	1.0	1.4	1.1	0.6
OPP	Single PI Grants	1.6	2.4	1.7	1.6	1.7	2.0	1.3	1.6	1.1	1.0
	Multi-PI Grants	1.6	2.1	1.8	2.2	1.5	1.5	1.1	1.3	1.1	1.2
	OPP Average	1.6	2.3	1.7	1.8	1.6	1.9	1.2	1.5	1.1	1.1
SBE	Single PI Grants	2.2	1.7	1.7	1.9	1.6	2.0	1.5	1.7	1.2	1.2
	Multi-PI Grants	1.7	1.1	1.3	1.4	1.4	1.1	1.0	1.3	0.9	0.9
	SBE Average	2.0	1.5	1.6	1.7	1.5	1.7	1.4	1.6	1.1	1.1

Source: NSF Enterprise Information System 10/01/12.

Appendix 9 - Mean Number of Research Proposals per PI before Receiving One Award, by Directorate or Office

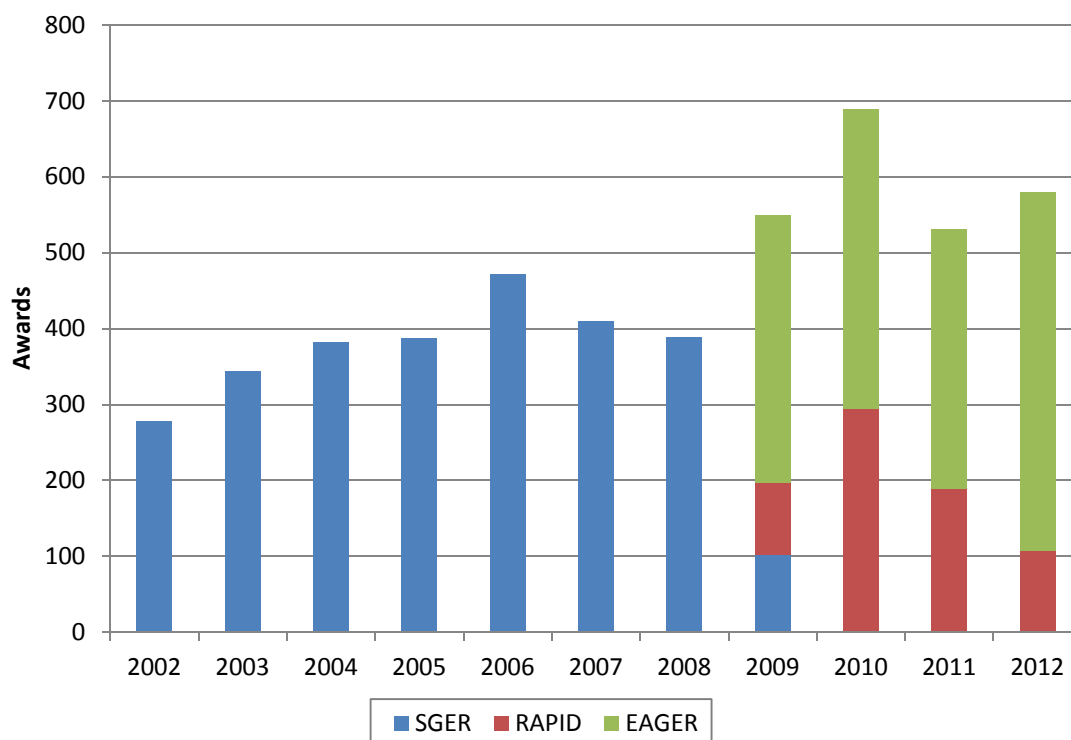
	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012
NSF	1.9	2.0	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4
BIO	1.7	1.8	1.8	2.0	2.0	2.2	2.2	2.1	2.1	2.1	2.1
CISE	2.1	2.2	2.5	2.5	2.6	2.4	2.4	2.5	2.6	2.5	2.6
EHR	1.1	1.1	1.2	1.3	1.3	1.4	1.3	1.4	1.4	1.4	1.6
ENG	2.0	2.1	2.2	2.3	2.4	2.6	2.5	2.5	2.6	2.7	2.8
GEO	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.1	2.0	1.9	2.0
MPS	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
OCI	N/A	N/A	N/A	N/A	N/A	N/A	1.2	1.4	1.5	1.5	1.5
OISE	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
OPP	1.6	1.7	1.6	1.6	1.8	1.8	1.9	1.9	1.7	1.6	1.6
SBE	1.4	1.5	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.7

Source: NSF Enterprise Information System 11/15/12.

Appendix 10 - Small Grants for Exploratory Research (SGER), Early-concept Grants for Exploratory Research (EAGER) and Grants for Rapid Response Research (RAPID)

Figure 10.1 and Table 10.1 provide funding trends for EAGERS and RAPIDs, as well as that for SGERs.

Figure 10.1 - Small Grants for Exploratory Research (SGER), Early-concept Grants for Exploratory Research (EAGER) and Grants for Rapid Response Research (RAPID) Awards



Source: NSF Enterprise Information System 10/01/12.

Table 10.1 - 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								
		2009			2010		2011		2012	
		SGER	RAPID	EAGER	RAPID	EAGER	RAPID	EAGER	RAPID	EAGER
NSF	Proposals	119	99	363	341	440	237	360	114	519
	Awards	102	95	353	294	395	190	341	107	472
	Total \$ (In Millions)	\$9.3	\$8.7	\$52.7	\$27.4	\$53.2	\$12.3	\$49.3	\$7.9	\$70.3
	% of Obligations	0.1%	0.1%	0.6%	0.4%	0.7%	0.2%	0.7%	0.1%	1.1%
	Average \$ (In Thousands)	\$91	\$91	\$149	\$93	\$135	\$65	\$145	\$74	\$149
		2009			2010		2011		2012	
		SGER	RAPID	EAGER	RAPID	EAGER	RAPID	EAGER	RAPID	EAGER
BIO	Proposals	17	13	53	52	45	10	34	14	54
	Awards	13	10	51	41	41	8	27	13	50
	Total \$ (In Millions)	\$1.4	\$0.9	\$10.2	\$5.1	\$8.3	\$0.9	\$5.8	\$1.2	\$9.0
	% of Obligations	0.1%	0.1%	1.1%	0.7%	1.1%	0.1%	0.8%	0.1%	1.2%
	Average \$ (In Thousands)	\$108	\$87	\$200	\$124	\$202	\$107	\$214	\$89	\$181
CISE	Proposals	12	1	92	8	178	25	130	5	162
	Awards	12	1	92	8	157	22	129	5	156
	Total \$ (In Millions)	\$1.5	\$0.0	\$14.4	\$1.1	\$20.4	\$1.1	\$19.2	\$0.7	\$25.2
	% of Obligations	0.2%	0.0%	1.8%	0.2%	3.2%	0.2%	3.0%	0.1%	3.8%
	Average \$ (In Thousands)	\$124	\$26	\$157	\$137	\$130	\$49	\$149	\$134	\$161
EHR	Proposals	1	9	7	13	2	9	4	5	48
	Awards	1	9	7	12	0	8	4	5	25
	Total \$ (In Millions)	\$0.2	\$1.3	\$1.8	\$1.9	\$0.2	\$1.5	\$1.2	\$0.7	\$6.3
	% of Obligations	0.0%	0.1%	0.2%	0.2%	0.0%	0.2%	0.1%	0.1%	0.6%
	Average \$ (In Thousands)	\$200	\$140	\$258	\$162	N/A	\$184	\$303	\$146	\$252
ENG	Proposals	28	3	104	95	96	62	92	12	109
	Awards	21	3	98	66	92	35	88	10	107
	Total \$ (In Millions)	\$1.4	\$0.2	\$10.7	\$5.0	\$9.1	\$1.9	\$8.9	\$0.4	\$12.7
	% of Obligations	0.1%	0.0%	1.1%	0.6%	1.1%	0.2%	1.1%	0.1%	1.5%
	Average \$ (In Thousands)	\$67	\$65	\$109	\$76	\$99	\$53	\$101	\$42	\$119
GEO	Proposals	21	32	29	113	44	92	37	48	80
	Awards	20	32	29	112	43	86	34	46	76
	Total \$ (In Millions)	\$1.1	\$2.1	\$2.9	\$10.0	\$4.1	\$4.8	\$3.5	\$2.7	\$6.7
	% of Obligations	0.1%	0.1%	0.2%	1.0%	0.4%	0.5%	0.4%	0.3%	0.7%
	Average \$ (In Thousands)	\$55	\$66	\$99	\$89	\$95	\$56	\$102	\$60	\$88
MPS	Proposals	15	2	32	19	41	2	14	2	29
	Awards	11	2	30	16	34	2	12	1	24
	Total \$ (In Millions)	\$2.1	\$0.2	\$3.9	\$1.6	\$6.7	\$0.2	\$2.2	\$0.0	\$4.3
	% of Obligations	0.1%	0.0%	0.2%	0.1%	0.4%	0.0%	0.2%	0.0%	0.3%
	Average \$ (In Thousands)	\$191	\$90	\$131	\$98	\$197	\$125	\$183	\$23	\$181

	2009			2010		2011		2012		
	<i>SGER</i>	<i>RAPID</i>	<i>EAGER</i>	<i>RAPID</i>	<i>EAGER</i>	<i>RAPID</i>	<i>EAGER</i>	<i>RAPID</i>	<i>EAGER</i>	
OCI	Proposals	0	0	23	5	19	3	18	6	11
	Awards	0	0	23	4	15	2	16	5	10
	Total \$ (In Millions)	\$0.0	\$0.0	\$6.3	\$0.3	\$2.6	\$0.4	\$3.5	\$0.5	\$3.0
	% of Obligations	0.0%	0.0%	2.2%	0.1%	1.2%	0.1%	1.1%	0.2%	1.0%
	Average \$ (In Thousands)	N/A	N/A	\$275	N/A	\$176	\$195	\$217	\$98	\$298
	OISE	Proposals*	0	0	3	0	5	1	2	0
Awards		0	0	3	0	4	1	2	0	2
Total \$ (In Millions)		\$0.0	\$0.0	\$0.9	\$0.5	\$0.6	\$0.3	\$0.8	\$0.1	\$0.4
% of Obligations		0.0%	0.1%	1.4%	1.1%	1.2%	0.1%	0.2%	0.0%	0.1%
Average \$ (In Thousands)		N/A	N/A	\$294	N/A	\$143	\$261	\$376	N/A	\$196
OPP	Proposals	9	0	10	6	5	7	23	15	13
	Awards	8	0	10	6	5	7	23	15	13
	Total \$ (In Millions)	\$0.6	\$0.2	\$0.7	\$0.3	\$0.7	\$0.4	\$3.4	\$1.0	\$1.5
	% of Obligations	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.8%	0.2%	0.3%
	Average \$ (In Thousands)	\$76	N/A	\$71	N/A	\$134	\$54	\$147	\$69	\$116
SBE	Proposals	16	39	10	30	5	26	6	7	11
	Awards	16	38	10	29	4	19	6	7	9
	Total \$ (In Millions)	\$1.0	\$3.8	\$0.9	\$1.6	\$0.6	\$0.9	\$1.0	\$0.6	\$1.2
	% of Obligations	0.3%	1.1%	0.3%	0.6%	0.2%	0.4%	0.4%	0.2%	0.5%
	Average \$ (In Thousands)	\$64	\$101	\$87	\$56	\$139	\$50	\$172	\$80	\$130

Source: NSF Enterprise Information System 11/7/12.

* 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 examine program management and portfolio balance. The COV reports, written as answers and commentary to specific questions, are reviewed by Advisory Committees and then submitted 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.³⁶

- **Advisory Committee Reporting on Directorate/Office Performance.**

Advisory Committees regularly provide community perspectives to the research and education directorates as well as on cross-cutting NSF topics such as cyberinfrastructure, international science and engineering, business and operations, and equal opportunities in science and engineering. They are typically composed of 15-25 experts who have experience relevant to the programs or topics and are broadly drawn from academia, industry, and government. Advisory Committees, as part of their mission, review COV reports and staff responses.

³⁶ The COV reports and directorate responses are available electronically at <http://www.nsf.gov/od/oia/activities/cov/cov.jsp>.

Appendix 12 - Requests for Formal Reconsideration of Declined Proposals

		Fiscal Year									
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
First Level Reviews (Assistant Directors):											
BIO	Request	4	3	2	4	2	5	3	1	4	2
	- Upheld	4	3	2	4	2	5	3	1	3	0
	- Reversed	0	0	0	0	0	0	0	0	1	2
CISE	Request	1	2	3	1	1	0	0	2	3	5
	- Upheld	0	2	3	1	1	0	0	2	3	5
	- Reversed	1	0	0	0	0	0	0	0	0	0
EHR	Request	3	2	7	4	6	7	2	2	2	3
	- Upheld	3	2	7	4	6	7	2	2	2	3
	- Reversed	0	0	0	0	0	0	0	0	0	0
ENG	Request	2	3	3	6	3	3	3	11	8	5
	- Upheld	2	3	3	6	3	3	3	9	7	5
	- Reversed	0	0	0	0	0	0	0	2	1	0
GEO	Request	4	4	0	0	2	0	2	3	2	2
	- Upheld	4	4	0	0	2	0	1	3	2	2
	- Reversed	0	0	0	0	0	0	1	0	0	0
MPS	Request	4	24	15	16	16	14	9	14 [^]	11	22
	- Upheld	4	24	15	15	15	14	7	12	11	21
	- Reversed	0	0	0	1	1	0	2	0	0	1
SBE	Request	3	3	3	4	0	2	1	1	0	0
	- Upheld	2	3	3	4	0	2	1	1	0	0
	- Reversed	1	0	0	0	0	0	0	0	0	0
Other *	Request	0	0	0	0	3	0	1	0	0	1
	- Upheld	0	0	0	0	3	0	0	0	0	1
	- Reversed	0	0	0	0	0	0	1	0	0	0
Second Level Reviews (Deputy Director):											
O/DD	Request	5	7	2	0	1	3	2	3	3	6
	- Upheld	4	7	2	0	1	3	2	3	1	6
	- Reversed	1	0	0	0	0	0	0	0	2	0
Total Reviews First & Second Level											
NSF	Request	26	48	35	35	34	34	23	37 [^]	33	46
	- Upheld	24	48	35	34	33	34	19	33	29	43
	- Reversed	2	0	0	1	1	0	4	2	4	3

Source: Office of the Director.

* The "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 carryover of a pending reconsideration request.

**Appendix 13 - Mean Number of Reviews per Proposal, by Method
and Directorate or Office, FY2012**

		Methods of Review				Not Reviewed	Returned without Review	Withdrawn Proposals
		All Methods	Mail + Panel	Mail-Only	Panel-Only			
NSF	Reviews	190,422	63,412	10,645	116,365	2,423	33	302
	Proposals	46,190	12,851	2,639	30,700			
	Rev/Prop	4.1	4.9	4.0	3.8			
BIO	Reviews	21,209	13,776	272	7,161	208	5	19
	Proposals	5,058	2,844	73	2,141			
	Rev/Prop	4.2	4.8	3.7	3.3			
CISE	Reviews	27,128	3,275	516	23,337	383	3	51
	Proposals	6,565	657	122	5,786			
	Rev/Prop	4.1	5.0	4.2	4.0			
EHR	Reviews	20,350	908	352	19,090	93	4	16
	Proposals	4,188	175	91	3,922			
	Rev/Prop	4.9	5.2	3.9	4.9			
ENG	Reviews	41,373	1,900	288	39,185	321	5	34
	Proposals	11,002	419	83	10,500			
	Rev/Prop	3.8	4.5	3.5	3.7			
GEO	Reviews	19,835	15,419	2,219	2,197	222	4	23
	Proposals	4,198	3,019	505	674			
	Rev/Prop	4.7	5.1	4.4	3.3			
MPS	Reviews	30,469	8,006	4,354	18,109	539	5	98
	Proposals	8,482	1,823	1,061	5,598			
	Rev/Prop	3.6	4.4	4.1	3.2			
OCI	Reviews	3,362	527	303	2,532	31	1	3
	Proposals	720	81	79	560			
	Rev/Prop	4.7	6.5	3.8	4.5			
OISE	Reviews	1,784	1,089	682	13	513	1	19
	Proposals	438	237	197	4			
	Rev/Prop	4.1	4.6	3.5	3.25			
OPP	Reviews	3,458	2,721	630	107	52	1	15
	Proposals	785	552	167	66			
	Rev/Prop	4.4	4.9	3.8	1.6			
SBE	Reviews	21,135	15,555	976	4,604	59	3	22
	Proposals	4,710	3,015	249	1,446			
	Rev/Prop	4.5	5.2	3.9	3.2			
Other*	Reviews	319	236	53	30	2	1	2
	Proposals	44	29	12	3			
	Rev/Prop	7.3	8.1	4.4	10.0			

Source: NSF Enterprise Information System 10/01/12.

* "Other" includes proposals managed by OIA and two actions on behalf of the Office of the Inspector General.

The proposals totals shown in the “All Methods” category do not include the proposals shown in the “Not Reviewed” category. Proposals which are not reviewed include RAPIDs, EAGERs, INSPIRE Track 1s and small grants for travel and symposia.

The “Not Reviewed” category includes award and decline actions for proposals that were not reviewed, while the “Returned without Review” and “Withdrawn Proposal” categories reflect proposals which were neither awarded nor declined.

The counts of panel reviews do not include panel summaries. There were 45,241 panel summaries in FY 2012.

Withdrawn proposals include only those that underwent merit review.

Appendix 14 - Methods of NSF Proposal Review

FY	Total	Mail + Panel		Mail Only		Panel Only*		Not Externally Reviewed	
	Proposals	Proposals	Percent	Proposals	Percent	Proposals	Percent	Proposals	Percent
2012	48,613	12,851	26%	2,639	5%	30,700	63%	2,423	5%
2011	51,562	14,594	28%	3,352	7%	31,878	62%	1,738	3%
2010	55,542	16,483	30%	3,853	7%	32,859	59%	2,347	4%
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 10/01/12.

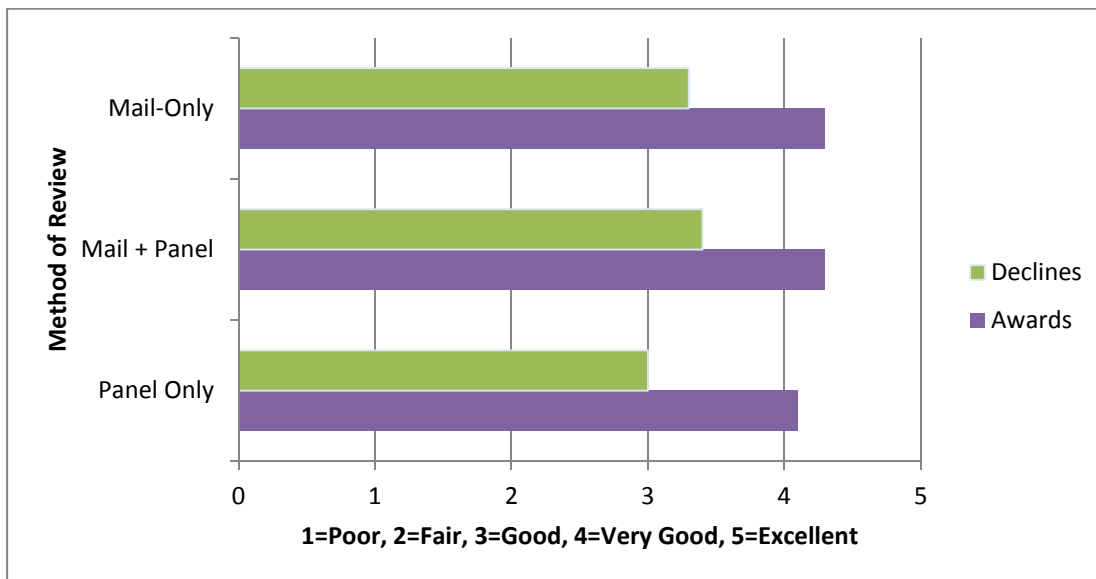
* Panel-Only includes cases where panel members were given access to proposals for review prior to panel.

Appendix 15 - Methods of NSF Proposal Review, by Directorate or Office – FY2012

Directorate	Total Proposals	Mail + Panel		Mail - Only		Panel Only		Not Reviewed	
		Proposals	%	Proposals	%	Proposals	%	Proposals	%
NSF	48,613	12,851	26%	2,639	5%	30,700	63%	2,423	5%
BIO	5,266	2,844	54%	73	1%	2,141	41%	208	4%
CISE	6,948	657	9%	122	2%	5,786	83%	383	6%
EHR	4,281	175	4%	91	2%	3,922	92%	93	2%
ENG	11,323	419	4%	83	1%	10,500	93%	321	3%
GEO	4,420	3,019	68%	505	11%	674	15%	222	5%
MPS	9,021	1,823	20%	1,061	12%	5,598	62%	539	6%
OCI	751	81	11%	79	11%	560	75%	31	4%
OISE	951	237	25%	197	21%	4	0.4%	513	54%
OPP	837	552	66%	167	20%	66	8%	52	6%
SBE	4,769	3,015	63%	249	5%	1,446	30%	59	1%
Other*	46	29	63%	12	26%	3	7%	2	4%

Source: NSF Enterprise Information System 10/01/12.

* "Other" includes proposals managed by OIA and two actions on behalf of the Office of the Inspector General.

Appendix 16 - Mean Reviewer Ratings, by Method of Review - FY 2012

Source: NSF Enterprise Information System 10/01/12.

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, together with information on human resources development at the post-doctoral, graduate and undergraduate levels. All other information required for NSF proposal submission remains the same. The proposals undergo merit review in the tradition of the specific program. In FY 2012, there were 71 requests for accomplishment-based renewals, 30 of which were awarded. **Table 17.1** shows the number of accomplishment-based renewals by directorate or office.

Creativity Extensions

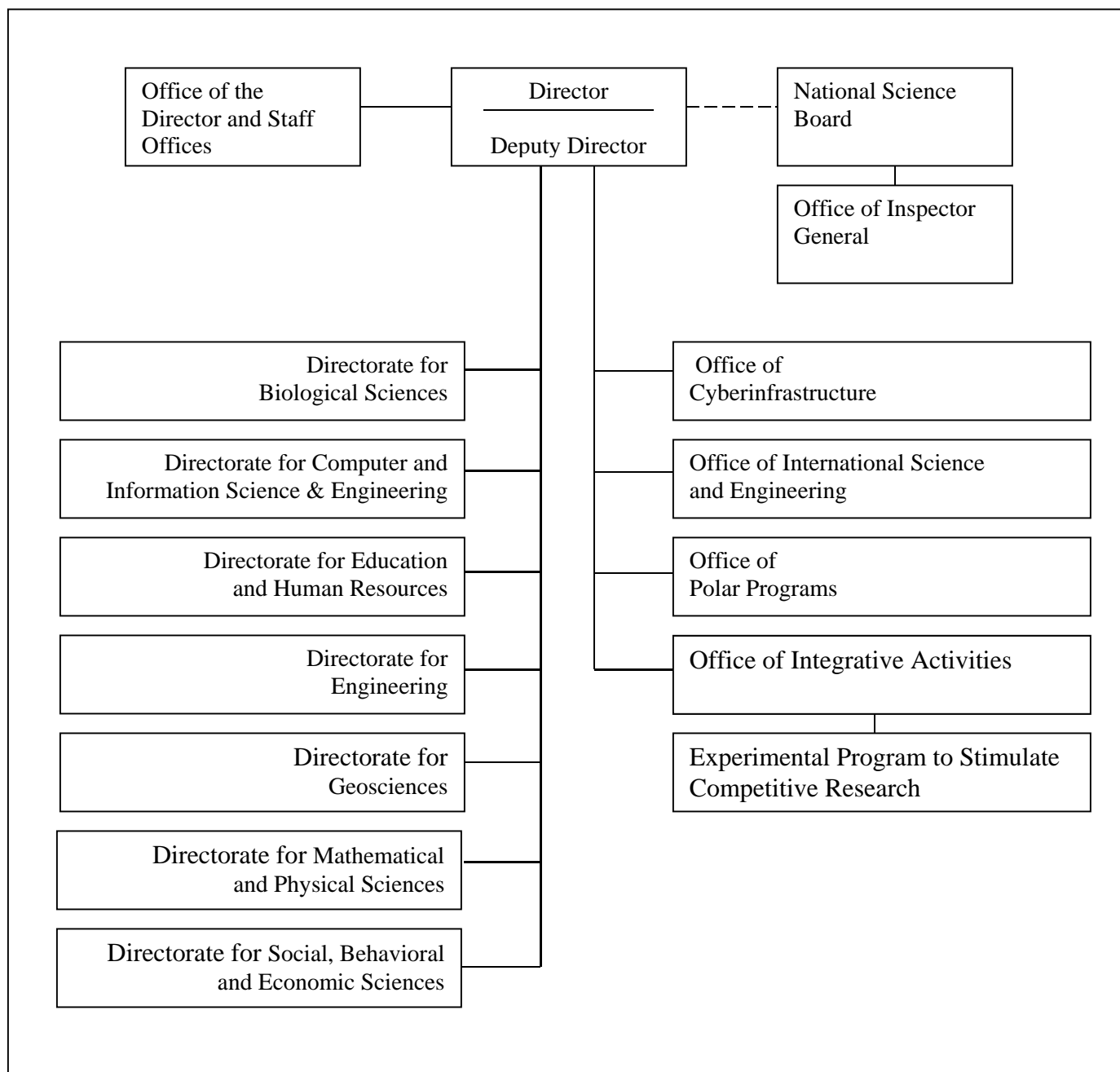
A program officer may recommend the extension of funding for certain research grants beyond the initial period for which the grant was awarded, for a period of up to two years. The objective is to offer the most creative investigators an extension to address opportunities in the same general research 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 2012, there were 5 Special Creativity Extensions awarded.

Table 17.1 - Accomplishment-Based Renewals, by Directorate or Office

Directorate or Office	Award vs. Decline	2006	2007	2008	2009	2010	2011	2012
NSF	Award	32	27	28	40	34	19	30
	Decline	70	70	51	54	52	43	41
	Mean Annual Award	\$116,263	\$174,137	\$196,551	\$285,422	\$180,755	\$254,424	\$338,264
BIO	Award	5	4	3	5	8	3	2
	Decline	20	25	13	16	11	6	3
	Mean Annual Award	\$128,260	\$98,410	\$125,556	\$134,862	\$174,666	\$462,026	\$78,815
CISE	Award	1	1	1	1	1	0	0
	Decline	2	3	1	0	2	1	2
	Mean Annual Award	\$83,333	\$50,000	\$100,017	\$274,923	\$363,279	0	0
EHR	Award	2	2	2	3	3	1	2
	Decline	14	6	3	7	6	5	4
	Mean Annual Award	\$167,348	\$142,410	\$493,450	\$403,539	\$379,113	\$100,057	\$530,633
ENG	Award	3	2	1	1	1	2	4
	Decline	14	13	6	13	7	5	7
	Mean Annual Award	\$69,589	\$83,542	\$103,293	\$249,954	\$203,310	\$120,798	\$177,262
GEO	Award	7	8	7	9	8	4	11
	Decline	3	3	2	3	8	4	1
	Mean Annual Award	\$132,370	\$107,295	\$132,682	\$478,109	\$164,462	\$145,360	\$384,831
MPS	Award	7	10	12	16	11	8	10
	Decline	13	16	19	12	13	15	18
	Mean Annual Award	\$143,631	\$287,206	\$237,542	\$207,374	\$143,423	\$305,468	\$411,185
OCI	Award	N/A	N/A	N/A	1	N/A	0	N/A
	Decline	N/A	N/A	N/A	0	N/A	1	N/A
	Mean Annual Award	N/A	N/A	N/A	\$521,556	N/A	0	N/A
OISE	Award	N/A	N/A	N/A	N/A	1	0	N/A
	Decline	N/A	N/A	N/A	N/A	2	1	N/A
	Mean Annual Award	N/A	N/A	N/A	N/A	\$50,000	0	N/A
OPP	Award	1	0	1	1	N/A	N/A	1
	Decline	0	1	1	0	N/A	N/A	2
	Mean Annual Award	\$117,500	-	\$136,611	\$609,026	N/A	N/A	\$140,322
SBE	Award	6	0	1	3	1	1	0
	Decline	4	3	6	3	3	5	4
	Mean Annual Award	\$59,712	-	\$102,657	\$85,178	\$101,052	\$81,136	0

Source: NSF Enterprise Information System 10/01/12. "N/A" = No accomplishment-based renewals requested.

Appendix 18 - National Science Foundation Organization Chart*



*In September 2012, the Director announced a realignment that modifies this structure. The transition to the new structure began on October 1, 2012 and is outside the time frame covered by this report.

Appendix 19 - Acronyms

<u>Acronym</u>	<u>Definition</u>
ARRA	American Recovery and Reinvestment Act
BFA	Office of Budget, Finance and Award Management
BIO	Directorate for Biological Sciences
CGI	Continuing Grant Increment
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
ENG	Directorate for Engineering
EPSCoR	Experimental Program to Stimulate Competitive Research
FY	Fiscal Year (October 1 – September 30)
GEO	Directorate for Geosciences
IPAs	Temporary employees hired through the Intergovernmental Personnel Act
IPS	Interactive Panel System
MPS	Directorate for Mathematical and Physical Sciences
MRI	Major Research Instrumentation
NSB	National Science Board
NSF	National Science Foundation
OCI	Office of Cyberinfrastructure
OD	Office of the Director
ODD	Office of the Deputy Director
OIA	Office of Integrative Activities
OISE	Office of International Science & Engineering
OPP	Office of Polar Programs
PARS	Proposal, PI and Reviewer System
PI	Principal Investigator
RAPID	Grants for Rapid Response Research
SBE	Directorate for Social, Behavioral and Economic Sciences
SGER	Small Grants for Exploratory Research
VSEE	Visiting Scientists, Engineers and Educators