

**Division of Mathematical Sciences
Annual Update to 2007 Committee of Visitors report
January 27, 2010**

DMS received a 6.2% increase in FY 2009 plus an additional \$97.34M in one time funds from the American Recovery and Reinvestment Act (ARRA). DMS made 844 research awards for a funding rate of 37 percent, as compared with 678 awards for a funding rate of 31% in FY 2008. The median annualized award size increased from approximately \$62K to \$70K. The increase in award size and funding rate is directly attributable to ARRA.

NB For a more detailed account of ARRA spending readers are referred to the document Division of Mathematical Sciences Overview FY 2007 – FY 2009.

In the summary section of the Division's response to the Committee of Visitor's report, dated March 29, 2007, DMS undertook to provide annual updates in four areas of interest.

Improve the community's understanding of the Broader Impacts criterion

(Unchanged from previous annual update) DMS continues the practices reported on in the previous update. To recap, the most important steps were publication of a Dear Colleague letter on the Broader Impacts criterion and introduction of the practice to instruct review panels to judge results of prior support not only on Intellectual Merit but also on Broader Impacts. Lack of reporting of broader impacts in results of prior support is supposed to be noted in panel summaries. Over the course of a three year funding cycle, this practice should alert the research community to the importance NSF attaches to this review criterion. Every panel briefing speaks to this issue and DMS intends to develop common briefing materials for all panels so that the Broader Impacts criterion will be presented in a consistent fashion. Finally, Program Officer comments to the Principal Investigator consistently point out cases where the Broader Impacts criterion was addressed incorrectly and give references to the relevant documents.

Assess the breadth and scope of institute programs

Questions about scope and balance of Institutes activities were posed by the 2007 COV and addressed in the Division's FY 2008 update to the COV. These answers reflect current Division thinking, and DMS has continued to develop a framework for assessment of the Institutes. The central goal of such an assessment is to create a useful tool for understanding and managing the Institutes portfolio. DMS has hired AAAS Science & Technology Policy Fellow, Katherine Socha, to help DMS develop portfolio assessment processes beginning by contracting with the Science and Technology Policy Institute (STPI) to develop a detailed Institutes logic model and a careful Institutes evaluation feasibility study.

Broader participation by women, under-represented minorities and institution-type

A succinct way to report on broader participation is to provide funding data for research awards in categories tracked by NSF.

Underrepresented Minority Groups are defined as American Indian or Alaska Native, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, as indicated on the NSF information request form for Principal Investigators. Please note that PIs may choose not to declare their gender, race or ethnicity; hence the data cannot be understood to represent fully and accurately the funding rate for women and underrepresented minorities. For comparison purposes, we also included data for all PIs and for PIs who choose not to declare their status. The reported percentage is the number of awards divided by the number of actions in each category while the number in parenthesis is the actual number of awards.

Funding Rate	FY 2006	FY 2007	FY 2008	FY 2009
All	30% (685)	35% (769)	31% (678)	37% (844)
Women	25% (79)	34% (102)	32% (90)	39% (123)
Underrepresented Minority	28% (34)	23% (34)	26% (30)	29% (41)
Minority Status Undeclared	21% (39)	35% (67)	26% (52)	28% (66)

One notes an increase in the number of awards in each category and an improvement in the funding rate in all categories.

NSF also tracks award data for the Research in Undergraduate Institutions program (RUI) which is one measure of institutional diversity. PIs from non-PhD granting institutions are eligible to submit proposals with an RUI designation as are PIs from PhD granting institutions, if the PI's department does not have a doctoral program and meets certain additional requirements. As above, PIs eligible to submit under RUI may choose not to do so; hence the data cannot be understood to represent fully and accurately the funding rate for PIs from non-PhD granting institutions.

RUI/FY 2006	RUI/FY 2007	RUI/FY 2008	RUI/FY 2009
24% (17)	27% (17)	20% (15)	25% (16)

The significant increase in funding rate is due entirely to decrease in proposals received since the number of awards made is essentially constant.

Support of graduate students, post-docs and junior researchers

NSF collects data on graduate student stipend support, postdoctoral stipend support and also the number of such individuals supported on NSF awards. The dollar amount reported below is the total spending on stipends in a given category and the number in parenthesis is the total number of individuals supported. The dollar amounts are stipends only and do not reflect fringe benefits, tuition, and indirect costs. Please note that since individuals may receive differing amounts of support, and be supported for differing lengths of time on different awards, no inference can be made from the data reported here about full time equivalent (FTE) number of individuals supported.

Funding	FY 2006	FY 2007	FY 2008	FY2009
Graduate student	\$26.60M (1941)	\$27.76M (2133)	\$27.21M (2054)	\$49.72M (3738)
Post-doc	\$12.22M (318)	\$13.20M (351)	\$15.01M (368)	\$24.49 (551)

The large increase in total support for graduate students and post-docs is directly attributable to ARRA. Again, for a fully discussion see the document Division of Mathematical Sciences FY 2007 – FY 2009.

A succinct way to report on support for junior researchers, and to put such support in context, is via a table of funding rates on research awards by PhD age:

FY 2009

Years Past Degree	Awards	Proposals	Funding
0-5	164	454	36%
6-10	151	480	31%
11-15	146	344	42%
16-20	97	245	40%
21-25	78	201	39%
26-30	70	165	42%
31-35	53	118	45%
36-40	32	84	38%
41-45	17	36	47%
>45	9	19	47%

FY 2008

Years past degree	Awards	Proposals	Funding Rate
1-5	117	399	27%
6-10	126	459	27%
11-15	98	309	32%
16-20	94	281	33%
21-25	62	184	34%
26-30	58	141	41%
31-35	43	129	33%
36-40	26	88	30%
41-45	16	31	52%
>45	5	15	33%

FY 2007

Years past degree	Awards	Proposals	Funding Rate
1-5	129	440	29%
6-10	156	489	32%
11-15	114	318	36%
16-20	89	264	34%
21-25	81	200	41%
26-30	67	176	38%
31-35	55	117	47%
36-40	37	92	40%
41-45	13	34	38%
>45	5	21	24%

FY 2006

Years past degree	Awards	Proposals	Funding Rate
1-5	110	421	26%
6-10	150	547	27%
11-15	92	290	32%
16-20	87	268	32%
21-25	67	195	34%
26-30	51	132	39%
31-35	45	113	40%
36-40	33	87	38%
41-45	10	27	37%
>45	3	17	18%

One note increases in award number and in funding rate in all categories, an effect directly attributable to ARRA.