Division of Mathematical Sciences (DMS)

Mission

The Division of Mathematical Sciences supports research and education projects at the frontiers of discovery that achieve NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense." Modes of support include awards to individual investigators and small groups, workforce training grants, and a portfolio of national mathematical sciences research institutes. The Division supports research in core areas of mathematics and statistics as well as interdisciplinary research that crosses traditional boundaries of the physical, biological, social and engineering sciences.

Discovery, Connections, Community

The influence of mathematical science on our daily lives is fundamental and pervasive. For example, every secure commercial transaction on the Internet is an application of research in number theory and algebraic geometry. Melding of the banking, insurance, and finance industries turns on recent advances in probability and stochastic calculus. And improvements in weather prediction, search engines, and industrial design processes are predicated on advances in algorithms and computational mathematics. DMS invests in discovery in mathematics and statistics; promotes interdisciplinary connections across fields of science, engineering and technology; and cultivates a diverse and capable community of researchers, students, professionals. The Division's top investment priorities - discovery, connections and community - are essential components of innovation engine that drives the Nation's economy in the 21st century.

Mathematical Sciences Priority Area

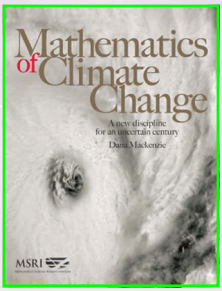
DMS is building on interdisciplinary activities and workforce programs developed or enhanced during the Mathematical Sciences Priority Area (FY 2003 – FY 2007). Successful programs such as Collaboration in Mathematical Geosciences (CMG) and the Joint DMS/NIGMS Activity in Mathematical Biology are continuing and new programs such as the CHE-DMR-DMS Solar Energy Initiative (SOLAR) and Proactive Recruitment in Introductory Science and Mathematics (PRISM) will see their first awards in FY 2009.

Contact Information

Division Director
Dr. Peter March
Executive Officer
Dr. Deborah F. Lockhart

National Science Foundation
Division of Mathematical Sciences
4201 Wilson Boulevard
Room 1025
Arlington, VA 22230

Telephone: (703) 292-5301
Fax: (703) 292-9032
Web site: http://www.nsf.gov/div/index.jsp ?div=DMS



In April 2007, the Mathematical Sciences Research Institute (MSRI) organized an event bringing together mathematicians, climate modelers, economists, business leaders, politicians and the public to explore some of the political, economic and mathematical aspects of climate change. For a copy of this report, visit www.msri.org.

Programs in Mathematical Sciences

Core Programs

Algebra, Number Theory, and Combinatorics
Analysis
Applied Mathematics
Computational Mathematics
Foundations
Geometric Analysis
Mathematical Biology
Probability
Statistics
Topology

Special DMS Programs

CHE-DMR-DMS Solar Energy Initiative (SOLAR)
Collaboration in Mathematical Geosciences (CMG)
Focused Research Groups in the Mathematical Sciences
Infrastructure
Joint DMS/NIGMS Initiative in Mathematical Biology
Mathematical Sciences: Innovations at the Interface with Computer Sciences

A Guide to Programs / Browse Funding Opportunities is available at http://www.nsf.gov/funding/browse_all_funding.jsp.

Mathematical Sciences Research Institutes is a portfolio of projects that advances research in the mathematical sciences, increases the impact of the mathematical sciences in other disciplines, enables the mathematical sciences to respond to national needs, and expands the talent base engaged in mathematical and statistical research in the United States.

The **Workforce** program offers competitions such as Enhancing the Mathematical Sciences Workforce for the 21st Century (EMSW21), whose goal is to increase the number of well-prepared U.S. citizens, nationals, and permanent residents who pursue careers in the mathematical sciences and in other NSF-supported disciplines.

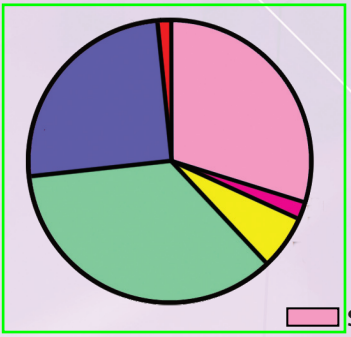
Enhancing Diversity in Graduate Education (EDGE): A Transition Program for Women in the Mathematical Sciences The EDGE Program, a DMS Workforce project funded jointly with The Andrew W. Mellon Foundation, is designed to strengthen the ability of women and minority students to successfully complete graduate programs in the mathematical sciences.

The EDGE Program, a DMS Workforce project funded jointly with The Andrew W. Mellon Foundation, is designed to strengthen the ability of women and minority students to successfully complete graduate programs in the mathematical sciences.

Division of Mathematical Sciences (DMS)

Human Resources FY 2008

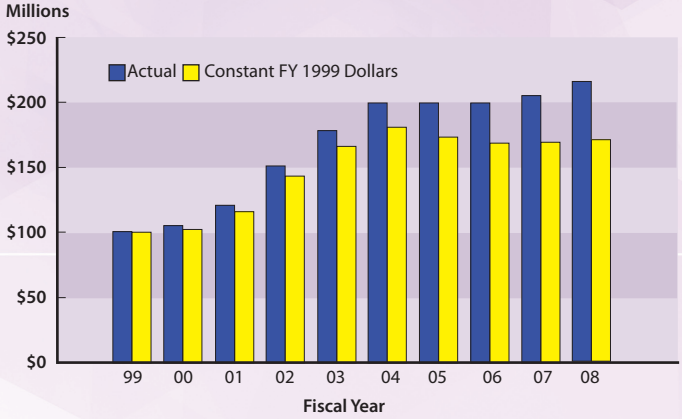
Pie chart showing total number of people involved in DMS.



- Senior Researchers - 30%
- Other Professionals - 2%
- Post Doctorials - 6%
- Graduate Students - 35%
- Undergraduate Students - 25%
- K-12 Students - 1%

Totals may not add due to rounding.

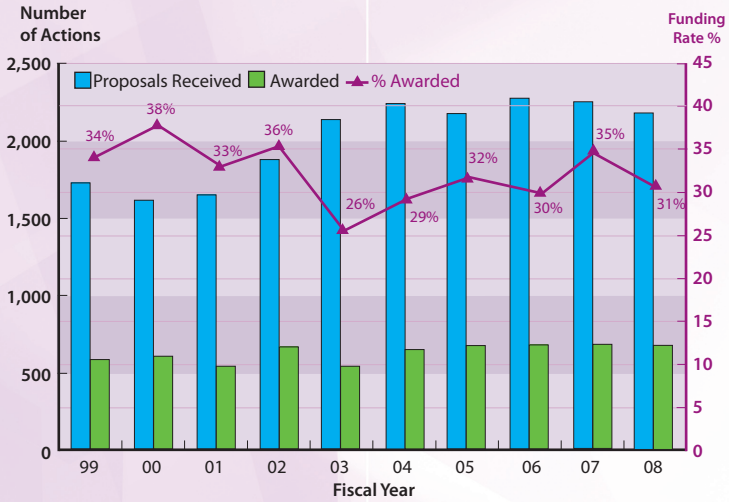
Budget in Actual and Constant FY 1999 Dollars



DMS annual budgets in actual and constant FY 1999 dollars. Constant dollars show the purchasing power of the DMS budget. Over this 10-year period, the constant dollar budget for DMS has increased 69%.

Data provided from FY 1999 to 2009 NSF Budget Requests to Congress, http://www.nsf.gov/about/budget/.

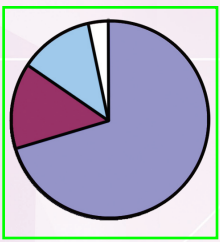
Success Rates and Number of Actions



Graph shows number of proposals submitted versus awarded for Research Grants as defined by NSF and resultant success rates. Success rate is defined as the number of new or renewal proposals awarded funding divided by the total number of proposals received.

Note: the distribution of success rates reflects the average for the Mathematical Sciences Division and may not represent success rates in individual programs.

Modes of Support FY 2008



- Individual Investigator Awards - 71%
- Workforce - 14%
- Institutes - 12%
- Other - 3%

Totals may not add due to rounding.