

# Directorate for Mathematical and Physical Sciences (MPS)

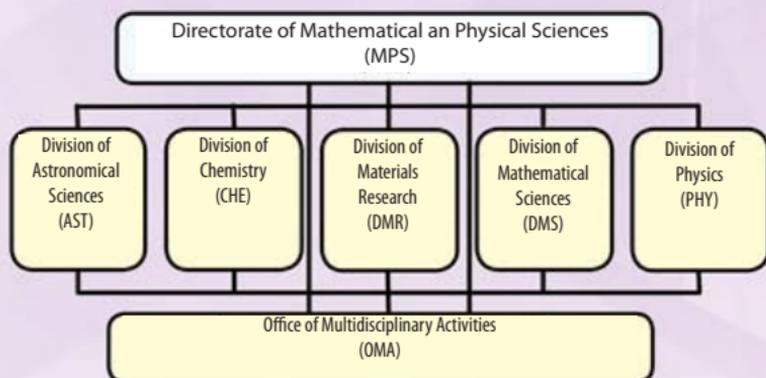
The NSF Directorate for Mathematical and Physical Sciences is comprised of the Divisions of Astronomical Sciences, Chemistry, Materials Research, Mathematical Sciences, Physics and the Office of Multidisciplinary Activities. These organizations provide the basic structure for MPS support of research and education. The MPS Divisions support both disciplinary and interdisciplinary activities and partner with each other and with other NSF Directorates.

## MPS Mission Statement

To make discoveries about the Universe and the laws that govern it; to create new knowledge, materials, and instruments which promote progress across science and engineering; to prepare the next generation of scientists through research; and to share the excitement of exploring the unknown with the nation.

## MPS Organizational Chart

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## NSF Mission

To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense (NSF Act of 1950).

## NSF Vision

Advancing discovery, innovation and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering.

Dear Reader:

This brochure has been created with the intent of informing you about the Mathematical and Physical Sciences Directorate of the National Science Foundation. We hope the material we've collected here gives you some idea of how the research we support serves as the foundation for major scientific advances.

MPS research spans the full range of spatial and temporal scales accessible to human investigation—distance scales ranging from the size of atoms to the structure of galaxies and of the universe itself, and timescales ranging from reactions lasting millionths of a billionth of a second to the evolution and age of the universe. We develop new mathematical structures and investigate the fundamental particles and processes of matter. We bring what we've learned in physical sciences to exploring complex biological systems, human and social dynamics, sustainable energy, and the environment. Past research in MPS has led to the MRIs you find in hospitals, the biological and chemical detectors you see in airports and the development of alternate fuel technologies.

Research in the mathematical and physical sciences serves as the basis for much technological innovation. In the next few years, our research will support the nation's investment in innovation through the America COMPETES Act, help improve computing power past the physical and conceptual limits of Moore's Law, contribute to basic research in sustainable energy and climate change, and shed light on the very nature of matter, space, time and the physical laws that govern the evolution of the universe.

We hope this brochure will give you a flavor of the research we support at universities and laboratories throughout our country, and we invite you to learn more about us on our web site at <http://www.nsf.gov/dir/index.jsp?org=MPS>.



With Regards,

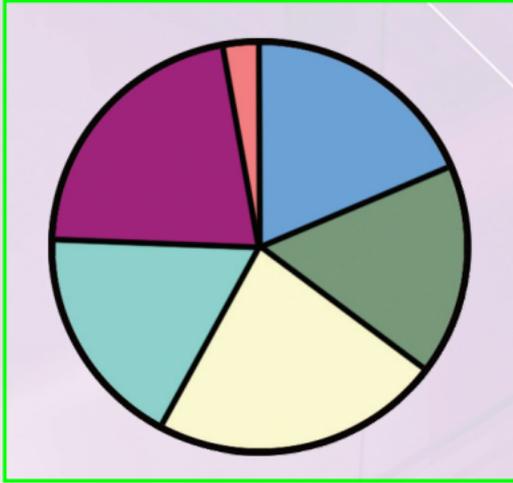
A handwritten signature in black ink, enclosed in a thin green rectangular border.

Tony Chan  
Assistant Director  
Directorate for Mathematical and  
Physical Sciences

# Directorate for Mathematical and Physical Sciences (MPS)

## MPS Funding FY 2008

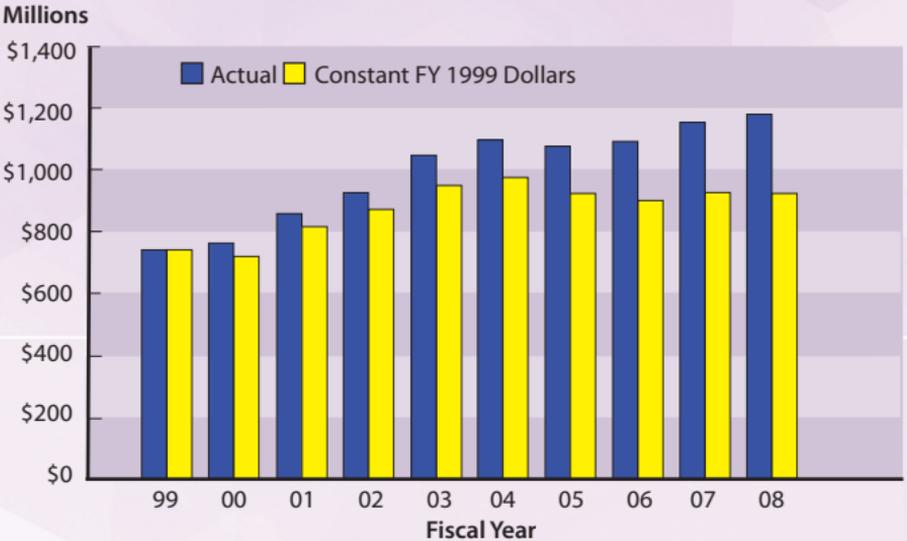
Pie chart showing MPS total budget for FY 2008. MPS spent \$1.17 billion in FY 2008.



- OMA - 3%
- CHE - 17%
- DMS - 18%
- AST - 19%
- PHY - 21%
- DMR - 22%

*Totals may not add due to rounding.*

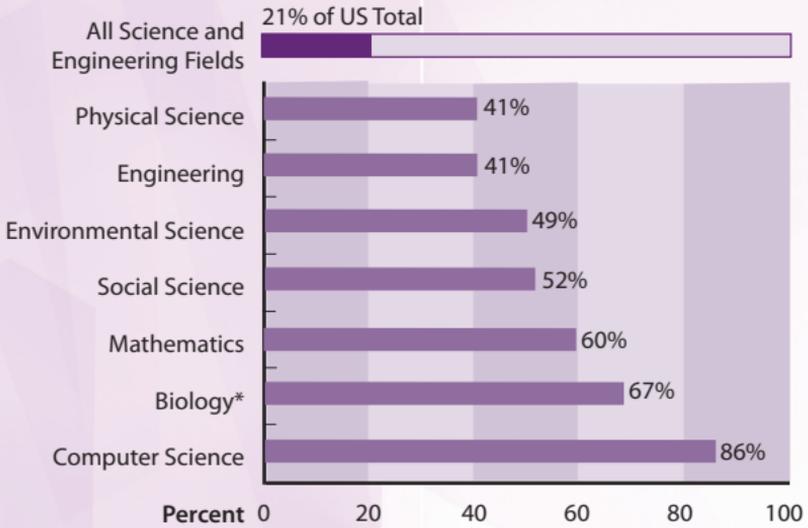
## Budget in Actual and Constant FY 1999 Dollars



MPS annual budgets in actual and constant FY 1999 dollars. Constant dollars show the purchasing power of the MPS budget. Over this 10-year period, the constant dollar budget for MPS has increased 28%.

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

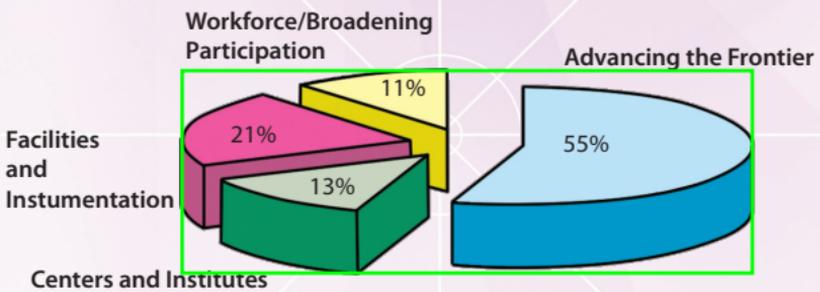
## NSF Support as a Percentage of Total Federal Support of Academic Basic Research (FY2008)



\* Excludes The National Institutes of Health

The National Science Foundation contributes significant portions of the total Federal support of many areas of academic basic research. Note that the Directorate for Mathematical and Physical Sciences includes basic research in the mathematical sciences (60% of Federal support) and in the physical sciences (41% of Federal support). Source: FY 2008 Performance Highlights, NSF 09-26.

## FY 2008 MPS Budget Distribution



The Directorate for Mathematical and Physical Sciences had a budget of \$1.17 billion for FY 2008. The budget supports research to advance the frontiers of science, and the development of the future workforce through individual investigator awards, centers and institutes, facilities, and instrumentation.