



PHYSICAL SCIENCES AND ENGINEERING
Research and Development Funding in the President's 2009 Budget

The President's 2009 Budget continues to emphasize the priorities of the American Competitiveness Initiative, including substantial investments in the physical sciences and engineering. This sustained investment in basic research enables the innovation that drives the Nation's economy in high priority areas such as new energy technology, nanotechnology, advanced networking and supercomputing, space exploration and earth and ocean observations and research. Budget increases for the Department of Energy's Office of Science, National Science Foundation, and National Institute of Standards and Technology fund the machinery of science with the broadest impact, while continued investment in high energy physics and astronomy will provide new insights into the nature of matter, energy, space and time. Critical increases are also needed to ensure and enhance our ongoing observation and monitoring of the planet and its climate, from the oceans to the atmosphere, to provide essential insight into the changes going on around us and our ability to affect those changes.

Department of Energy – The 2009 Budget provides \$4.7 billion for DOE's Office of Science, an increase of 18.8% over the 2008 funding level. The Budget includes funding for priorities such as construction of research facilities, including the National Synchrotron Light Source II (\$93.3 million), ITER (\$214.5 million), the Linear Coherent Light Source (\$37 million), and the Continuous Electron Beam Accelerator Facility (\$28.6 million), as well as critical infrastructure such as the isotope production and application program. This Budget also supports accelerated basic research in hydrogen, solar energy utilization, electrical energy storage, advanced nuclear energy systems, carbon sequestration and other use-inspired focus areas. Larger investments in Advanced Scientific Computing Research are also proposed, with increased support for climate research and modeling at DOE Supercomputing Facilities.

National Science Foundation – The President's Budget provides \$6.9 billion for NSF, an increase of 13% from 2008 levels. Included in this amount is \$1.4 billion for the Math and Physical Sciences Directorate, an increase of 20%, in addition to increased spending on Engineering (20%), Computing and Information Science and Engineering (19%), and in Geosciences (13%). The Budget also supports cross-agency investments in Cyber-enabled Discovery and Innovation, Science and Engineering Beyond Moore's Law and Adaptive Systems Technology.

Department of Commerce – A high priority for 2009, the President's Budget provides \$635 million for the National Institute of Standards and Technology. After correcting the 2008 budget by excluding \$83 million in earmarks and unrequested grants, this Budget represents an increase of over 20% to core NIST funding for basic research and construction of research facilities. The requested budget increases critical capacity for nanoscale material characterization and development of instrumentation and methodologies that are enabling for nanotechnology applications. The request for DOC also includes \$18 million in additional funding to support ocean research and technology development and ocean observing at NOAA.

National Aeronautics and Space Administration – The President's 2009 Budget provides \$17.6 billion for NASA, an increase of 2.9% after accounting for Congress' rescission in the 2008 omnibus of \$192 million in prior-year unobligated NASA funds. A quarter of the agency budget, or \$4.442 billion supports the direct costs of research, technology development and execution of robotic missions in the Science Mission Directorate. The Science program includes investments in space missions that will improve our understanding of Earth's climate; create opportunity for new insights into the Moon and Sun, their history, dynamics and impact on the Earth; explore our solar system; and study our galaxy and the distant universe. The highest priority investments for NASA Science in the 2009 Budget include accelerating the Earth Science missions aligned with the recent Decadal Survey and developing a robust lunar science program.

These physical sciences-related programs total \$13.7 billion in the 2009 Budget, which exceeds the 2008 President's request by \$387 million and the 2008 enacted level by \$1.1 billion.

Selected Civilian Physical Science-Related Programs (dollars in millions)

Department/Agency	2001 Actual	2008 Enacted	2009 Budget	Dollar Change: 2001 to 2009	Percent Change: 2001 to 2009
NASA Science*	\$3,806	\$4,627	\$4,442	N/A	N/A
DoE Office of Science	\$3,218	\$3,973	\$4,722	\$1,504	47%
NSF (MPS, GEO, CISE, ENG)	\$2,322	\$2,983	\$3,523	\$1,201	52%
NIST "core" (not including ITS)	\$347	\$605	\$635	\$288	83%
NOAA Oceanic and Atmospheric Research	\$315	\$398	\$378	\$63	20%
TOTAL	\$10,008	\$12,586	\$13,700	\$3,056	49%

* 2009 NASA Science budget reflects accounting changes and transfer of management of the Deep Space Network and Ground Network to another part of the agency. Therefore, the NASA funding levels are not included in the calculation of total \$ change or total % change.