



PHYSICAL SCIENCES AND ENGINEERING
Research and Development Funding in the President's 2008 Budget

The President's 2008 Budget proposes substantial increases in the Nation's investment in the physical sciences and engineering, continuing to emphasize the priorities of the American Competitiveness Initiative. This continued investment in physical science research drives innovation in high priority areas such as nanotechnology, advanced networking and supercomputing, new energy technologies, national and homeland defense, and space exploration, and has been a significant contributor to our Nation's prosperity. The budget increases for the Department of Energy's Office of Science, National Science Foundation, and the National Institute of Standards and Technology will fund the machinery of science with broadest impact and continue to support leading edge research at the scientific frontiers. In addition, continued investments in the discovery-oriented sciences such as high energy physics and astronomy will provide new insights into the nature of matter, energy, space and time.

Department of Energy – The 2008 Budget provides \$4.4 billion for DoE's Office of Science, an increase of 7.2 percent over the President's 2007 request. The Budget includes funding for priorities such as nanotechnology (\$283 million), the materials science research facilities (\$698 million), basic research in support of the hydrogen fuel initiative (\$60 million), the advanced energy initiative (\$713 million), and high-end computing facilities and research (\$318 million). The Budget also completes funding (\$45 million) for project engineering and design of the National Synchrotron Light Source II, a new x-ray light source that will enable the study of materials properties and functions at a level of detail and precision (nanoscale) never before possible. It continues support for construction of the Linac Coherent Light Source—a materials research facility that will provide laser-like x-rays allowing an unprecedented real-time glimpse of chemical and biological processes, fully funds operations for the five nanoscale science research centers, provides funding for the project engineering and design for the upgrade of the Continuous Electron Beam Accelerator Facility, and fully funds the U.S. contribution to the ITER fusion energy project (\$160 million).

National Science Foundation – The President's Budget provides \$6.4 billion for NSF, an increase of 6.8 percent over the 2007 request. Included within this level is \$1.25 billion for the Mathematical and Physical Sciences Directorate (MPS), an increase of 8.9 percent over the 2007 request, and increases in Engineering of 8.7 percent, in Computing and Information Science and Engineering of 9.0 percent, and in Geosciences of 6.3 percent. Within MPS, the themes that are given special emphasis include Cyber-enabled Discovery and Innovation, Physical Sciences at the Nanoscale, Complex Systems and Materials, and the Science Beyond Moore's Law.

Department of Commerce – A high priority for 2008, the President's Budget provides \$594 million for the National Institute of Standards and Technology laboratory programs, an increase of 11%. This includes nearly \$69 million in new initiatives in research and measurements in high-leverage areas such as the Disaster-Resilient Structures and Communities Program, the interagency Global Climate Change Science Program, and the interagency National Earthquake Hazards Reduction Program. Support continues for high-leverage, broad impact research in quantum information processing, nanotechnology, and expanded capabilities at the NIST Center for Neutron Research.

National Aeronautics and Space Administration – The President's 2008 Budget provides \$17.3 billion for NASA in 2008, an increase of 3.1%. Nearly one-third of the agency budget, or \$5.52 billion, supports robotic missions, research, and technology development in the Science Mission Directorate. The Science program includes investments in space missions that will improve our understanding of the Earth and its climate, offer new opportunities for lunar research, decipher the dynamics of the Sun and its profound effects on the Earth, explore the planets and asteroids of our solar system, and unlock the secrets of our Galaxy and the distant universe.

These physical sciences-related programs total \$14.2 billion in the 2008 Budget, which exceeds the 2007 President's request by \$813 million.

Selected Civilian Physical Science-Related Programs (\$ in millions)

Department/Agency	2001 Actual	2007 Request	2008 Request	Change: 2001 to 2008	% Change: 2001 to 2008
NASA Science ¹	4,371	5,330	5,516	N/A	N/A
DOE Office of Science	3,190	4,102	4,398	1,208	38%
NSF (MPS, GEO, CISE, ENG)	2,322	3,050	3,302	980	42%
NIST "core" (not including ITS)	347	535	594	247	71%
NOAA Oceanic & Atmospheric Research	315	338	358	43	14%
TOTAL	10,545	13,355	14,168	3,623	34%

¹ Due to recent changes in NASA's approach to budgeting overhead costs, 2008 funding levels are not fully comparable to previous years.