Science with a Mission

Advancing the Energy, Economic, and National Security of the United States

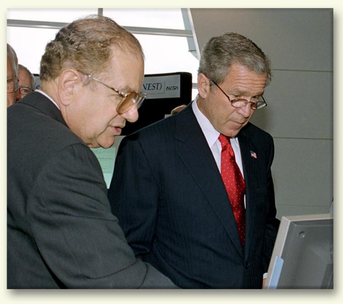
Office of Science
U.S. DEPARTMENT OF ENERGY

Program Offices

The Department of Energy's Office of Science is the single largest supporter of basic research in the physical sciences in the United States. It oversees – and is the principal Federal funding agency of – the Nation's research programs in high energy physics, nuclear physics, and fusion energy sciences.

The Office of Science sponsors fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science. In addition, the Office of Science is the Federal Government's largest single funder of materials and chemical sciences, and it supports unique and vital parts of U.S. research in climate change, genomics, life sciences, and science education.

The Office of Science manages this research portfolio through the following interdisciplinary program offices, with these goals and areas of research:

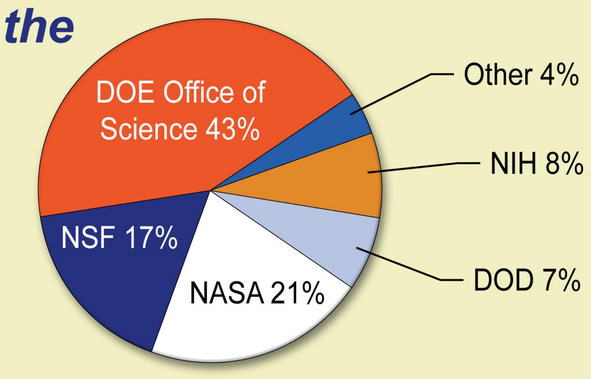


"Scientific and technological research are a high calling for any individual. And promoting research is an important role of our Federal government."

"Science and technology have never been more essential to the defense of the Nation and the health of our economy."

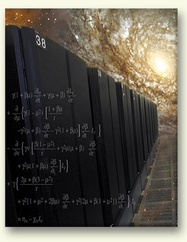
— President George W. Bush

Office of Science Provides 43% of Federal Support to the Physical Sciences



Source: NSF - Division of Statistical Research Services

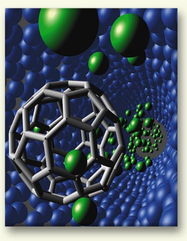
Our Programs and Goals



Advanced Scientific Computing Research

Deliver Computing for the Frontiers of Science

- *Computer science and software research*
- *Extending science through computation and collaboration*
- *Supercomputing technologies for science*
- *Computational and network infrastructure and tools*



Basic Energy Sciences

Advance the Basic Sciences for Energy Independence

- *Materials sciences and engineering research*
- *Chemical sciences, geosciences, and physical biosciences research*
- *Nanoscale science, engineering, and technology research*
- *Scientific user facilities to understand materials and perform nanoscale science*

Biological and Environmental Research

Harness the Power of Our Living World

- *Genomics and low dose radiation research*
- *Climate change research*
- *Environmental remediation sciences*
- *Medical sciences*

Fusion Energy Sciences

Bring the Power of the Stars to Earth

- *Harnessing fusion energy through basic research in plasma and fusion sciences*
- *ITER, the international burning plasma experiment*

High Energy Physics

Explore the Fundamental Interactions of Energy, Matter, Time, and Space

- *Explore unification of the forces and particles of nature*
- *Understand the cosmos and the destiny of the universe*
- *Develop the tools for scientific revolutions to come*

Nuclear Physics

Explore Nuclear Matter – from Quarks to Stars

- *Heavy ions: Studies of hot, dense nuclear matter*
- *Medium energy: The quark structure of matter*
- *Low energy: Nuclear structure/astrophysics, fundamental symmetries, and neutrinos*

Workforce Development for Teachers and Scientists

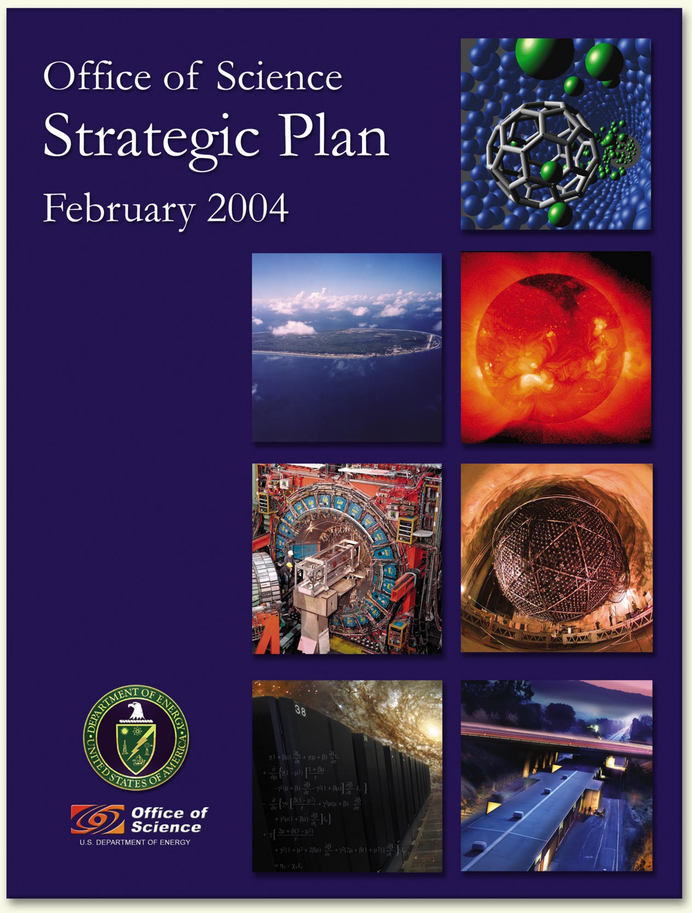
Train the Next Generation of Scientists and Engineers to Maintain U.S. Scientific and Technological Leadership

- *Student internships at national laboratories*
- *Fellowships for distinguished science, technology, engineering, and mathematics educators*
- *The DOE National Science Bowl® for high school students and the National Middle School Science Bowl*

Strategic Plan

The Office of Science has developed a 20-year vision for the future of science supported by DOE. The *Office of Science Strategic Plan*, produced after extensive consultations with the U.S. scientific community, sets concrete goals and priorities that will dramatically influence the direction of basic research in the U.S. for decades to come.

The Department of Energy's *Office of Science Strategic Plan* outlines an ambitious agenda for science, one that will lead this Nation to a more secure energy future, a cleaner environment, a healthier citizenry, and great advances in our imagination and knowledge.



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