



## Science Funding and the Economy

The DOE Office of Science funding package under President Obama's American Reinvestment and Recovery Act is designed to energize the U.S. economy in two ways: in the near term, through the creation of thousands of jobs in fields ranging from construction labor to laboratory research; and in the longer term, by strengthening the Nation's capacities for technological innovation--a major driver of economic growth and productivity and the key to improving our energy security in coming years.

A linchpin of America's prosperity and global economic leadership that we have seen in our lifetimes was the decision by the federal government, following World War II, to provide large-scale federal support for basic scientific research. The DOE Office of Science, which began life as the research arm of the U.S. Atomic Energy Commission in 1946, was a product of that decision. Basic science has provided the wellspring for a steady stream of technological innovation. Federal support has been critical to sustaining the pace of scientific discovery, educating and training a robust scientific workforce for the nation, and building and maintaining the complex scientific facilities and instruments that are today's indispensable tools of research in the physical sciences.

In the words of the 2006 National Academy of Sciences report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Future*:

The United States takes deserved pride in the vitality of its economy, which forms the foundation of our high quality of life, our national security, and our hope that our children and grandchildren will inherit ever-greater opportunities. That vitality is derived in large part from the productivity of well-trained people and the steady stream of scientific and technical innovations they produce. Without high-quality, knowledge-intensive jobs and the innovative enterprises that lead to discovery and new technology, our economy will suffer and our people will face a lower standard of living. Economic studies conducted before the information-technology revolution have shown that even then as much as 85% of measured growth in US income per capita is due to technological change.

At the same time, as the report noted, other nations have been increasing their support of science and R&D and increasingly challenging America's scientific and technological leadership.

The DOE Office of Science Recovery Act funding is a strategic effort to achieve maximum short-term economic and jobs impact while bolstering the Nation's long-term scientific strength through accelerated construction of key scientific facilities, acquisition of advanced scientific instrumentation, upgrades and modernization of our National Laboratory infrastructure, and expanded research support for graduate students, postdocs, and Ph.D. scientists working to solve critical problems in fields ranging from high energy and nuclear physics to biofuels, solar energy, solid-state lighting, superconductivity, electrical transmission and storage, carbon sequestration, combustion, environmental clean-up, materials science for energy efficiency, and other fields. Today's discoveries will be tomorrow's innovative technologies and hold the key to America's continued prosperity and enhanced energy security in the coming decades.