Included in the reorganization were not only the technical missions of the Energy Research and Development Administration and the Bureau of Mines, but also the energy policy and planning activities of the Federal Energy Administration and the regulatory responsibilities of the Federal Power Commission. The joining of policy, planning, and regulation with research and development again served to broaden the agency's basic research mission. Today, the original focus of 1946 on nuclear and related science is a relatively small fraction of a large and diversified portfolio of basic research activities. Materials sciences, geosciences, engineering, and energy biosciences, among others, have joined the portfolio. Collectively, these activities aim to maintain scientific and technical leadership across a broad spectrum of important research areas.

The origins of Basic Energy Sciences research are rooted in the history of the Nation's fervent effort to defend itself against its enemies in World War II. In this sense, the program pre-dates the establishment of the Atomic Energy Commission in 1946 and has endured continuously since then.

Current Program

In its current formulation, Basic Energy Sciences supports about 1,400 research projects in the scientific disciplines of physical and biological sciences, geological sciences, engineering, mathematics, and computer sciences. These projects are carried out at about 200 separate institutions and directly support more than 4,000 investigators. All projects are selected on the basis of scientific excellence, their relevance to meeting long-term research goals, and their contributions toward Departmental missions.

Importantly, Basic Energy Sciences supports a number of major scientific "user" facilities. These are highly specialized research facilities which individual researchers or private firms cannot afford to build and operate at their own expense. They are often called "premier" facilities, because they are either the first of their kind and capabilities, or they are among the very best and most sophisticated in the world.

Descriptions of how these facilities are used can be found among the *stories* in this document. Some of the more prominent user facilities include: the National Synchrotron Light Source and the High Flux Beam Reactor at Brookhaven National Laboratory on Long Island, New York; the Intense Pulsed Neutron Source and the High Voltage Electron Microscope and Accelerator Facility at Argonne National Laboratory, near Chicago, Illinois; the National Center for Electron Microscopy, including the Atomic Resolution Microscope, at Lawrence Berkeley Laboratory, Berkeley, California; the Combustion Research Facility at Sandia National Laboratories, Livermore, California; the High Flux Isotope Reactor and Calutrons at Oak Ridge National Laboratory, Oak Ridge, Tennessee; the Spallation Neutron Source at Los Alamos National Laboratory, Los Alamos, New Mexico; and the Stanford Synchrotron Radiation Laboratory at Stanford University, Stanford, California.

Approximately 70 percent of the Basic Energy Sciences annual budget supports research and the operation of the user facilities at the Department's National Laboratories, including two university-based laboratories, Lawrence Berkeley Laboratory and Ames Laboratory. Another 25 percent supports research conducted at other universities throughout the country. The remainder is conducted elsewhere, including non-profit institutions and industry.

Program Accomplishments

The accomplishments of the Basic Energy Sciences program highlighted in this document were selected from more than 200 individual nominations for inclusion. The stories are felt to be representative of the program's achievements.

Each accomplishment is a success and their collective presentation here serves several purposes. One is to foster an appreciation for the work itself, for the difficulties encountered, and for the ingenious means by which problems were overcome.

A second is to convey an understanding of the process of basic research and of the environment in which it thrives. Therein lies the root of our continued leadership as a Nation in science and technology.

Finally, it serves to increase awareness of the benefits of basic research, especially as the seemingly arcane discoveries of science become transformed into practical applications.