

OFFICE OF SCIENCE

MISSION

The mission of the Office of Science (SC) is to foster and support forefront basic and applied research programs which advance the science and technology foundations necessary to accomplish Department of Energy (DOE) missions: efficiency in energy use, diverse and reliable energy sources, improved health and environmental quality, and fundamental understanding of matter and energy.

SC is the single largest supporter of basic research in the physical sciences in the United States, providing more than 40 percent of total funding for this vital area. 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 is also the Federal Government's largest single provider of funds for the chemical and materials sciences. It manages fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science and supports unique and vital parts of U.S. research in climate change, geophysics, genomics, life sciences, and science education.

SC manages this research portfolio through six program offices: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics. In addition, SC sponsors a range of science education initiatives through its Workforce Development for Teachers and Scientists program.

The Office of Science oversees a field system that includes ten world-class, contractor-operated laboratories. The DOE national laboratory system and numerous advanced R&D user facilities (located primarily at the SC laboratories and SC-supported universities) make up the most comprehensive research system of its kind in the world. Site Offices located at each SC laboratory (Ames Laboratory; Argonne and Brookhaven National Laboratories; Fermi National Accelerator Facility; Lawrence Berkeley, Oak Ridge, and Pacific Northwest National Laboratories; Princeton Plasma Physics Laboratory; Thomas Jefferson National Accelerator Facility; and the Stanford Linear Accelerator Center) are responsible for administration and oversight of their laboratory's Management and Operating (M&O) contract. The SC field system also includes offices in Chicago and Oak Ridge which provide administrative, business, and technical services to the SC complex and other DOE program offices. The Oak Ridge Office is also the single point-of-contact for all Department operations at the Oak Ridge Reservation, excluding the work performed by the National Nuclear Security Administration.

ORGANIZATIONAL RELATIONSHIPS

The majority of DOE basic research is funded by the Office of Science. SC research underpins the applied and technology development research funded by other DOE program offices. The Director of the Office of Science works closely with the various Assistant Secretaries and Office

Directors on cross-discipline projects, plans, policies, and issues relevant to DOE missions. The SC Director is the principal science advisor to the Secretary of Energy.

The Department's basic research is carried out at national laboratories and universities. The Director of the Office of Science provides management oversight and advises the Secretary on the well-being and management of the ten SC laboratories. The Director assists other DOE Assistant Secretaries and Office Directors by assuring that the Chicago and Oak Ridge Offices provide administrative, business, and technical services in support of the Department's multiple missions, and as appropriate, to other Federal agencies in the pursuit of their missions. SC also assists other DOE elements in assessing the scientific and technical components of strategic multiyear plans and budget proposals.

The Director of SC maintains close ties to representatives of industry and academia who participate in long-term, high-risk, high-payoff collaborative research and development projects. DOE-sponsored workshops, research proposal reviews, advisory panel participation, and the use of specialized research facilities supported by the Department are the vehicles through which these ties are developed. Through these associations, the results of DOE-sponsored research continually feed national intellectual and economic development.

FUNCTIONS

1. Serves as the principal science advisor to the Secretary in formulating the basic research policy of the Department. Provides independent review, analyses, and recommendations to the Secretary concerning research and development (R&D) strategies, plans, policies, and technology programs. Advises the Secretary with respect to grants and other forms of financial assistance required for the basic and applied research activities of the Department.
2. Ensures comprehensive interface on energy R&D matters with various external communities. Represents the Secretary on budget and policy matters relating to SC research before the Office of Management and Budget, Congress, and the public. Represents DOE in Federal R&D coordination activities including interagency crosscutting science and technology (S&T) issues. Coordinates SC involvement in international R&D strategic planning with relevant DOE, Administration, and international organizations. Serves as the principal point of contact in DOE for research policy planning relevant to national energy issues.
3. Develops an integrated SC strategic plan that identifies short-term and long-term R&D mission needs, as well as associated facility and infrastructure needs.
4. Seeks support and funding for SC programs by developing a time-phased budget and justification consistent with the SC Strategic Plan. Seeks support from the Administration and Congress, and other stakeholders, for adequate resources to carry out this plan.
5. Plans, funds, and directs the Advanced Scientific Computing Research Program of the Department which includes, but is not limited to, research in applied mathematics,

computer science, networking, high performance computing, communications, and information infrastructure research. Provides advanced computing and communications facilities to support SC and other DOE missions.

6. Plans, funds, and directs the Basic Energy Sciences research program of the Department, which includes, but is not limited to, research in the chemical sciences, materials sciences, engineering and geosciences, and energy biosciences.
7. Plans, funds, and directs the Biological and Environmental Research program of the Department which includes, but is not limited to, research in systems, structural, low dose radiation, and computational biology; microbial and human genomics; climate change research; molecular nuclear medicine; biomedical science; computational environmental science; and environmental remediation, chemistry, and subsurface sciences.
8. Plans, funds, and directs the Fusion Energy Sciences program of the Department which includes, but is not limited to, research in fusion and plasma science, computational modeling of high-density plasmas, technology research (including development of low activation materials and magnets), alternative magnetic confinement concepts, and inertial fusion energy.
9. Plans, funds, and directs the High Energy Physics research program of the Department, which includes, but is not limited to, theoretical and experimental research on the properties and interactions of elementary particles and the origin of the universe.
10. Plans, funds, and directs the Nuclear Physics research program of the Department, which includes, but is not limited to, theoretical and experimental research on the structure and interactions of nucleons and nuclei, nuclear astrophysics, the properties of nuclear matter, and the fundamental symmetries of nature.
11. Plans, funds, and directs the Workforce Development for Teachers and Scientists program which includes, but is not limited to, teacher development programs, undergraduate internships, and graduate and faculty fellowships. Supports science education opportunities at the Department's laboratories for students and faculty in science, technology, engineering, and mathematics fields to ensure a well-trained and diverse future workforce for DOE programs and the Nation. Manages the Department's annual National Science Bowl Competition for high school students and the annual National Middle School Bowl.
12. Provides and operates the large-scale scientific facilities required for research in the physical and life sciences to maintain U.S. world leadership in the search for knowledge, and to ensure the availability of scientific talent. Facilities include, but are not limited to, particle accelerators, synchrotron light sources, neutron scattering facilities, research reactors, and high-speed computer networks.
13. Advises the Secretary on policy issues which affect the institutional capabilities of the SC laboratories. Manages the Institutional Planning Process for laboratories assigned to SC

for management oversight. Evaluates the overall R&D performance of SC laboratories and is responsible for their safe and effective operation.

14. Plans, funds, and directs the Science Laboratories Infrastructure program which manages the preservation, renewal, and development of the SC laboratories' infrastructures in order to meet the needs of existing, new, or expanding SC/DOE programs.
15. Manages delegated authorities as Head of Contracting Activity (HCA).
16. Assures the effective execution and implementation of SC programs through direction of Site Offices responsible for day-to-day, on-site administration and oversight of the M&O contracts for SC laboratories.
17. Assures the effective execution and implementation of SC/DOE/Federal programs through direction of the Chicago and Oak Ridge Offices that are responsible for providing best-in-class administrative, business, and technical support to the SC complex, other DOE program offices, and as appropriate, other Federal agencies.
18. Directs planning, review, evaluation, and execution of SC construction activities. Develops and implements policies and procedures for design, fabrication, construction, commissioning, operation, and decommissioning of research/conventional facilities and devices required to support DOE missions.
19. Implements an environmental protection and occupational safety and health protection technical support and assistance capability to ensure the safe and effective achievement of SC planning goals and program objectives.
20. Ensures, through the SC Safeguards and Security program, the appropriate levels of protection against unauthorized access, theft, diversion, loss of custody, destruction of DOE assets, and hostile acts that may cause adverse impacts on fundamental science, national security, or the health and safety of SC and contractor employees, the public, or the environment.
21. Manages a comprehensive cyber/computer security program to protect SC (Headquarters and Field) classified and unclassified information and information technology assets.
22. Manages an information technology (IT) program that promotes effective and efficient IT services to meet all Federal business activities at SC Headquarters and Field elements. Develops appropriate interfaces between Federal systems and those at the SC laboratories. Oversees all SC Federal IT systems development and engineering activities as well as IT support services.
23. Ensures that SC management structures, procedures, and program planning and budgeting systems are responsive to DOE requirements for effective, efficient, and economical achievement of short- and long-term strategic planning goals and program objectives. Responsible for SC planning, budgeting, procurement and management systems.

24. Promotes increased participation of traditionally underrepresented populations in science and technology in the Department's education programs by fostering partnerships with Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Native American Institutions to enhance workforce diversity.
25. Oversees the Technical Information Management program which is responsible for ensuring overall stewardship and accessibility for the scientific and technical information generated and acquired by DOE programs.
26. Manages the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs for the Department.
27. Manages the Corporate e-R&D Portfolio Management, Tracking, and Reporting Environment (PME) Project and the Corporate Streamlining Departmental Grants Processes Project for the Department.
28. Manages and supports the Enrico Fermi and E. O. Lawrence Awards processes for the Department.

22 January 2004