

SCIENCE

(dollars in thousands)

	FY 2024 Enacted	FY 2025 Enacted	FY 2026 Request	FY 2026 Request vs FY 2025 Enacted	
				\$	%
Office of Science					
Advanced Scientific Computing Research	1,016,000	1,036,235	1,016,000	-20,235	-1.95%
Basic Energy Sciences	2,625,625	2,588,285	2,241,000	-347,285	-13.42%
Biological and Environmental Research	900,000	870,000	394,920	-475,080	-54.61%
Fusion Energy Sciences	790,000	790,000	744,780	-45,220	-5.72%
High Energy Physics	1,200,000	1,224,570	1,112,836	-111,734	-9.12%
Nuclear Physics	804,000	825,600	767,860	-57,740	-6.99%
Isotope R&D and Production	130,193	169,636	162,330	-7,306	-4.31%
Accelerator R&D and Production	29,000	27,000	–	-27,000	-100.00%
Workforce Development for Teachers and Scientists	40,000	31,000	25,000	-6,000	-19.35%
Science Laboratories Infrastructure	288,351	260,843	210,443	-50,400	-19.32%
Safeguards and Security	190,000	190,000	190,000	–	–
Program Direction	226,831	226,831	226,831	–	–
Total, Office of Science	8,240,000	8,240,000	7,092,000	-1,148,000	-13.93%

Starting in FY 2026, the Accelerator R&D and Production program activities are merged into the High Energy Physics program.

Appropriation Overview

The Office of Science (SC) is the nation's largest Federal supporter of basic research in the physical sciences. The SC portfolio has two thrusts: direct support of scientific research, and direct support of the design, development, construction, and operation of unique, open-access scientific user facilities. The SC basic research portfolio includes grants and contracts supporting over 22,000 researchers located at over 300 institutions and 17 DOE national laboratories, spanning all 50 states, the District of Columbia, and U.S. territories. The SC portfolio of 27 scientific user facilities serves nearly 39,000 users per year. SC programs invest in basic research to advance energy technologies, transform our understanding of nature, and strengthen the connection between advances in fundamental science and technology innovation.

The SC Request increases investments in Administration priorities including artificial intelligence (AI) and machine learning (ML), Quantum Information Sciences (QIS), basic research on critical minerals/materials, microelectronics, and accelerating fusion development to close key science and technology gaps. The SC Request also supports the domestic establishment of critical isotope supply chains to reduce U.S. dependency on foreign supply and increase U.S. resilience. SC's core research programs promote the discovery and design of new chemical, physical, and biological processes that provide a critical foundation for breakthroughs in energy technologies to ensure our nation's future energy, economic, and national security. SC's core research programs also support discovery and innovation to decode the quantum realm, unveil the hidden universe, and explore novel paradigms of physics.

The FY 2026 Request includes increased investment to support 27 SC scientific user facilities, which are unique resources stewarded by DOE for the nation and made available to the scientific community free of charge, based on merit review to support the best scientific ideas. The Atmospheric Radiation Measurement (ARM) user facility completes all field campaigns and is closed. In FY 2026, DOE estimates that nearly 39,000 researchers will access these cutting-edge tools to push the frontiers of science and technology (S&T), with nearly half doing research supported by other funding agencies, including the National Science Foundation, National

Institutes of Health, National Aeronautics and Space Administration, and Department of Defense, as well as from industry. These facilities have delivered extraordinary breakthroughs, such as helping usher new battery technologies to the marketplace. Further, these facilities are often the portal through which the next generation of researchers begin their engagement with DOE and its national laboratories, providing invaluable opportunities for developing the scientific workforce our country needs to meet the major economic and national security challenges ahead.

Program Highlights

▪ **Advanced Scientific Computing Research (ASCR)**

ASCR advances science and U.S. competitiveness through investments in computational science, applied mathematics, computer science, networking, and software research as well as development and operation of multiple, large, high performance and leadership computing and high-performance networking user facilities. The Request funds:

- Critical basic research investments in applied mathematics and computer science to combine the power of exascale computing and artificial intelligence for a new era of American innovation, and next-generation computing paradigms to ensure U.S. leadership at the forefront of computing.
- Extended frontiers in AI for science, security, energy innovation, and technology that leverages the unique capabilities of the DOE ecosystem to expand U.S.'s global domination in AI and advanced computing technologies.
- Advanced research and development (R&D) in quantum information science (QIS) technologies, including quantum computing and networking, for the next generation distributed quantum computing systems.
- Building of scalable integrated national capabilities that accelerate the convergence of quantum, AI, and high-performance classical computing.
- Next-generation user facilities by maintaining facility operations and building upgrade projects to deliver first-of-a-kind high-uptime high-performance computing, data, and networking infrastructure as an integrated ecosystem to meet the requirements of extreme scale DOE science in the AI era.
- Engagement of U.S. microelectronics vendors to advance DOE goals for next generation HPC including continued improvements in performance, usability, and interoperability for a wide range of use cases, including AI.

▪ **Basic Energy Sciences (BES)**

BES supports fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels to provide the foundations for novel technologies critical to the DOE missions in energy, economic, and national security. The Request funds:

- Core research activities in condensed matter and materials physics, chemistry, geosciences, and aspects of biosciences that establish the foundation of knowledge required to advance Administration Priorities in AI/ML, critical materials, microelectronics, and QIS.
- Continued support for use-inspired basic research through multi-disciplinary, multi-institutional team science—the Energy Frontier Research Centers, Microelectronics Science Research Centers, the Batteries and Energy Storage and the Fuels from Sunlight Energy Innovation Hub programs, and the computational materials and chemical sciences programs.
- Support for transformational QIS research, including a robust core research portfolio and complimentary multi-disciplinary research at the National QIS Research Centers, to drive disruptive innovation in quantum computing, sensing, and communication, and advance the use of quantum technologies for fundamental scientific discovery.
- Research to accelerate the development and integration of emerging AI/ML capabilities that will accelerate the pace of fundamental scientific discoveries in materials science and chemistry, enhance operation of scientific user facilities, and advance the interpretation of massive data sets.
- Operation of BES scientific user facilities: five x-ray light sources, two neutron scattering sources, and five research centers for nanoscale science. The support will balance high priority activities required for safe and reliable operations while maintaining strong user support.
- Four construction projects to advance the state-of-the-art in X-ray and neutron light source and to provide critical supporting infrastructure: the Linac Coherent Light Source-II High Energy, the Second

Target Station, the Advanced Light Source Upgrade, and the Cryomodule Repair and Maintenance Facility.

▪ **Biological and Environmental Research (BER)**

BER supports transformative science and scientific user facilities to harness the genomic potential found in nature, achieve a predictive understanding of complex biological and environmental systems, and provide the fundamental research leading to solutions for the Nation's energy and national security challenges. BER activities in environmental system sciences, atmospheric system research, earth system modeling, data management, and the Atmospheric Radiation Measurement User Facility are terminated. The Request funds:

- Fundamental Genomic Science as the core basic research effort accelerating the development of non-medical plant- and microbial-based biotechnologies, focused on bioenergy, chemical and biomaterial synthesis, bioproducts and critical mineral recovery.
- Enhanced investments and integration of AI systems into research to enable discoveries, accelerate predictive understanding of biological and environmental systems, automate laboratory systems and processes, and rapidly advance biosystems design capabilities.
- New bio-inspired research to design microorganisms and plants with enhanced abilities to extract, separate and concentrate critical minerals and materials.
- New explorations in quantum-enabled technology for non-destructive imaging of biological systems and vastly enhanced sensing of biochemical reactions.
- Continued operation of BER scientific user facilities: the Joint Genome Institute and the Environmental Molecular Sciences Laboratory as central capabilities driving BER science.
- Continuation of the Microbial Molecular Phenotyping Capability project as a core capability to accelerate characterization of platform organisms for biotechnology.

▪ **Fusion Energy Sciences (FES)**

FES supports research to understand matter at very high temperatures and densities and to build the scientific foundation needed to develop a fusion energy source. The Request is aligned with the recommendations of the recent Long-Range Plan (LRP) developed by the Fusion Energy Sciences Advisory Committee (FESAC) and funds:

- Fusion Innovation Research Engine Collaboratives: multi-institutional, multi-disciplinary R&D centers to address critical science and technology (S&T) gaps outlined in the FESAC LRP, supporting public and private fusion efforts.
- Partnerships with the private sector through the Milestone program, the Innovative Network for Fusion Energy (INFUSE) program, and the Private Facilities Research (PFR) program.
- An initial investment to explore a Public-Private Consortium Framework (PPCF) model to support public-private partnerships towards developing and building small-to-midscale infrastructure.
- DIII-D national fusion facility: Characterize and exploit innovative heating and current drive sources relevant for power plants including development of high-confinement, steady-state operating scenarios.
- National Spherical Torus Experiment-Upgrade: Continue with collaborative research at other facilities while recovery and repair activities are ongoing, installation of remaining diagnostics, commissioning in preparation for plasma operation, and prioritization of strategic FM&T initiatives.
- U.S. Contributions to ITER project focusing on the design, fabrication, and delivery of in-kind hardware components.
- One Major Item of Equipment (MIE): the Material Plasma Exposure eXperiment project.

▪ **High Energy Physics (HEP)**

The HEP program is dedicated to unraveling the mysteries of the universe by exploring the fundamental building blocks of matter and energy. Through groundbreaking scientific discoveries in particle physics and the management of top-tier scientific facilities, HEP plays a crucial role in advancing R&D. By ensuring the timely completion of significant projects and maintaining state-of-the-art facilities, HEP contributes to positioning the U.S. as a key player in global particle physics research and collaboration. The Request funds:

- AI/ML to extract signals of signature particle physics from HEP data with increasingly high volumes and complexity and to improve accelerator and detector operations in real-time and in extremely high data rate environments.
- QIS co-development of quantum information, theory, and technology aligned with HEP science drivers and exploring new capabilities in quantum sensing and computing.
- Microelectronics to accelerate R&D into sensor materials, detector devices, advances in front-end electronics, and integrated sensor/processor architectures.
- Core research activities, with emphasis on the physics of the Higgs boson, neutrinos, dark matter, and dark energy; exploring the unknown; and enabling early and visible scientific results from HEP project investments.
- Operations for the Fermilab Accelerator Complex, the Facility for Advanced Accelerator Experimental Tests II, and the Accelerator Test Facility, including critical upgrades, improvements, and deferred maintenance.
- Continuing support for two construction projects: Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment and Proton Improvement Plan II; and three MIE projects: Accelerator Controls Operations Research Network, and the High Luminosity Large Hadron Collider ATLAS and CMS Detector Upgrade Projects.

▪ **Nuclear Physics (NP)**

NP supports experimental and theoretical research to discover, explore, and understand all forms of nuclear matter. The Request funds:

- High priority world-class nuclear physics research and core competencies in quantum chromodynamics, nuclei and nuclear structure and nuclear astrophysics, and fundamental symmetries at universities and laboratories.
- Operations of all NP user facilities including: the Relativistic Heavy Ion Collider; the 12 GeV Continuous Electron Beam Accelerator Facility; the Argonne Tandem Linac Accelerator System; and the Facility for Rare Isotope Beams.
- Support for QIS research efforts to create radiation tolerant qubits, support paths towards realizing a nuclear clocks, enable precision NP measurements, and development of quantum sensors based on atomic-nuclear interactions, and development of quantum computing algorithms.
- Expanded support for AI/ML research aimed at the automated optimization of accelerator availability and performance, as well as software enabling data-analytics-driven discovery.
- Continued support for the Electron-Ion Collider construction project.

▪ **Isotope R&D and Production (DOE IP)**

DOE IP supports fundamental research in nuclear and radiochemistry, chemical separations, accelerator and reactor physics, and isotope enrichment to produce priority radioactive and stable isotopes in short supply that no domestic entity has the capability to meet market demand; a priority is to reduce U.S. dependence on foreign isotope supply chains. The Request funds:

- Targeted core research activities to develop innovative isotope production, chemical processing, and enrichment technologies, including domestic supply chains of isotopes required to support Administration Priorities on fusion energy, microelectronics, and QIS.
- Increased AI/ML research to promote efficiencies and automation in isotope science and advanced manufacturing.
- Support for mission readiness of facilities to produce isotopes in short supply or otherwise not available.
- Modernization and refurbishment activities to increase safe, robust, and reliable operations across production sites to better tackle growing gaps in isotope supply chains.
- The University Isotope Network to produce research and “boutique” radioisotopes.

- Routine operations of new capabilities introduced in FY 2025, including the Stable Isotope Production Facility MIE as the first domestic large scale gas centrifuge cascade to produce Xe-129 for polarized lung imaging, the Medical Isotope Research Producer Facility for cancer treatments and isotopes for fundamental research, FRIB Isotope Harvesting, and new units of electromagnetic ion separators to enrich stable isotopes in short supply.
 - Continued support for two construction projects: Stable Isotope Production and Research Center and Radioisotope Processing Facility.
- **Accelerator R&D and Production (ARDAP)**
 - In 2024, SC realigned the ARDAP program activities into a new division under the HEP program. Starting with the FY 2026 Request, funding for the former ARDAP activities is requested within the HEP Program. This shift aims to consolidate expertise and capabilities in accelerator R&D, fostering efficiency and effectiveness in SC investments in this crucial field.
- **Workforce Development for Teachers and Scientists (WDTs)**
WDTs invests in sustaining a highly skilled talent pool in science, technology, engineering, and mathematics (STEM) to support DOE missions. The Request funds:
 - Sustained support for the core STEM workforce training programs to develop a highly skilled future S&T workforce.
 - Strategic investment in building innovative pathways to connect all students and educators to a wide range of learning, research and development, and career opportunities by DOE, SC, and WDTs.
 - Support for critical, modernized infrastructure to operationalize the workforce development mission.
- **Science Laboratories Infrastructure (SLI)**
 - SLI supports scientific and technological innovation at the SC laboratories by sustaining and modernizing general purpose infrastructure and fostering safe, efficient, reliable, resilient, and environmentally responsible operations. The Request funds seven ongoing construction projects, a Laboratory Operations Apprentice Program, at least eight General Plant Projects, and Payment in Lieu of Taxes.
- **Safeguards and Security (S&S)**
S&S maintains security measures to protect personnel and assets in an environment of open scientific research. The Request funds implementation of the Department's credentialing directive and sustained efforts for S&S elements.
- **Program Direction (PD)**
PD supports the Federal workforce that plans, develops, and oversees SC investments in world-leading basic research and scientific user facilities, and provides critical oversight to 10 of DOE's national laboratories. The Request funds Salaries, Benefits, Travel, Support Services, Other Related Expenses, and the Working Capital Fund.