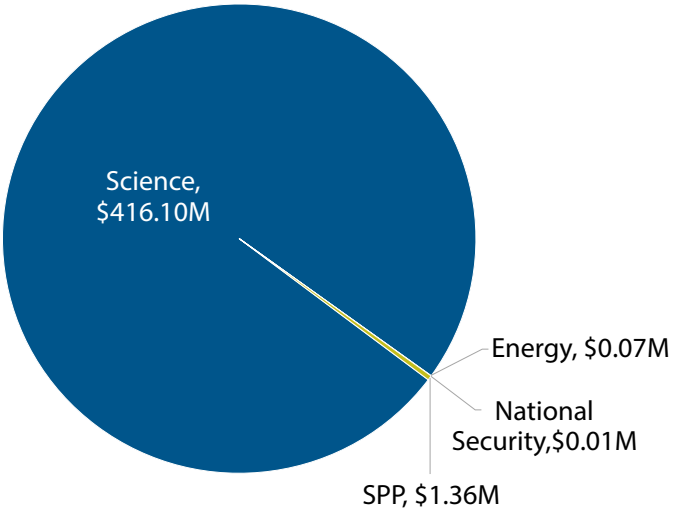
Fermi National Accelerator Laboratory
At a Glance

U.S. DEPARTMENT OF ENERGY

Fermi National Accelerator Laboratory is an international hub for particle physics located 40 miles west of Chicago. Fermilab is home to a vast complex of particle accelerators that powers research into the fundamental nature of the universe. The flagship Deep Underground Neutrino Experiment, supported by the Long-Baseline Neutrino Facility, will together be the first international mega-science project based at a DOE National Laboratory. Fermilab integrates U.S. universities and national laboratories into the global particle physics enterprise through its Large Hadron Collider (LHC) programs, neutrino science and precision science programs, and dark-energy and dark-matter experiments. The Laboratory's scientific R&D infrastructure and expertise advance particle accelerator, particle detector and computing technology for use in science and society.

FY 2016 Funding by Source



Lab operating costs: **$417.5M**
DOE costs: **$416.2M**
SPP costs (non-DOE/non-DHS): **$1.36M**
SPP as % total lab operating costs: **0.3%**

Facts

Location: Batavia, Illinois
Type: Single-program laboratory
Year Founded: 1967
Director: Nigel Lockyer
Contractor: Fermi Research Alliance, LLC
Responsible Site Office: Fermi Site Office

Physical Assets

6,800 acres and **366** buildings
2.4M GSF in buildings
Replacement plant value: **$2.098B**
18,849 GSF in **9** excess facilities
19,771 GSF in leased facilities

Human Capital

1,793 full-time equivalent employees (FTEs)
8 joint faculty
59 postdoctoral researchers
3,245 facility users
12 visiting scientists

Core Capabilities

- Accelerator Science and Technology
- Advanced Computer Science, Visualization, and Data
- Large-Scale User Facilities/Advanced Instrumentation
- Particle Physics

Mission Unique Facilities

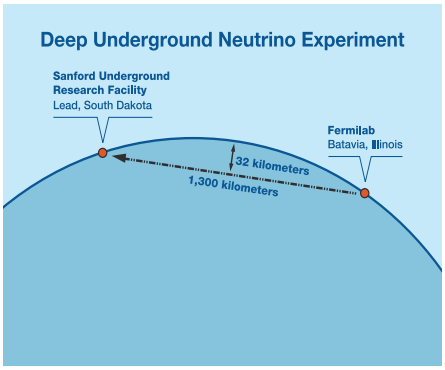
- Fermilab Accelerator Complex

Fermilab

Fermi National Accelerator Laboratory
Accomplishments

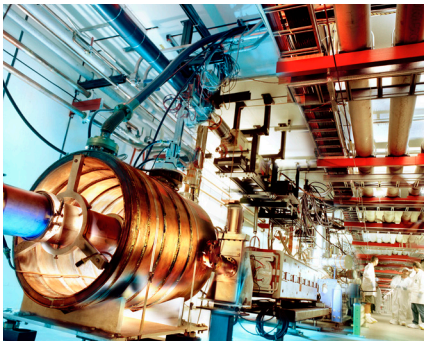
U.S. DEPARTMENT OF ENERGY

Research Highlight
Capturing the Elusive Neutrino



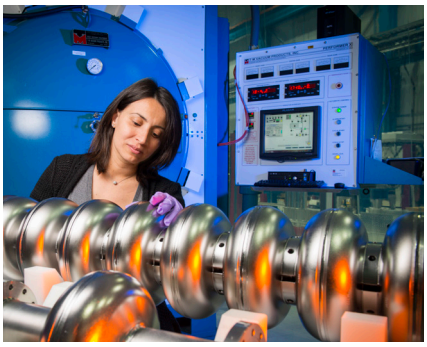
Our universe is permeated with neutrinos: nearly massless particles that interact so rarely with matter that trillions of them pass through our bodies each second without leaving a trace. Neutrinos could reveal how matter originated and point the way to discovering new particles and forces. The US flagship Long-Baseline Neutrino Facility (LBNF) and Deep Underground Neutrino Experiment (DUNE), hosted by Fermilab with installations in Illinois and South Dakota, will be the largest experiment of its kind ever built to study these particles. Fermilab currently operates NOvA, the most powerful accelerator-based neutrino experiment in the United States, and has two more neutrino experiments in operation and two more under construction, all of which are milestones on the path to LBNF/DUNE.

Unique Facility
High-Energy Beams for Discovery



The Fermilab Accelerator Complex powers forefront research into the particles and forces that make up our universe. Comprising seven particle accelerators and storage rings, it is the only facility in the world that simultaneously operates two accelerator-based neutrino beams. These beams drive an ensemble of experiments that study neutrinos at both low and high energies and over both short and long distances. Upgrades to the complex will position Fermilab as the world center for the study of muons, with the first experiment using high-intensity beams beginning operation in 2017.

Research Highlight
Advancing Technology to Accelerate Science



Fermilab is an international leader in the research, development and testing of superconducting radio-frequency (SRF) accelerating cavities, the technology at the heart of the next generation of particle accelerators for science and society. Accelerating cavities transfer energy to particle beams as they pass through. SRF cavities enable large amounts of energy to be transferred over a short distance due to their ability to conduct high electrical currents without resistance. Fermilab accelerator scientists have developed a technique called nitrogen doping to increase the efficiency of SRF cavities, helped transfer the know-how to other laboratories and industry, and successfully implemented the techniques in an accelerator.