Economic Impact Fermi National Accelerator Laboratory

From its founding in 1967, Fermi National Accelerator Laboratory (Fermilab) has had a significant impact on Chicago and Illinois. A U.S. Department of Energy Office of Science laboratory managed by the Fermi Research Alliance, a partnership of the University of Chicago and the Universities Research Association, Fermilab attracts visitors, funding, and jobs by seeking answers to the universe's greatest mysteries, training the next generation of scientists, and pioneering innovative technologies.

A MAGNET FOR INVESTMENT

Fermilab's specialized operations attract funding from the federal government and academic institutions, which supports local business activity in Illinois.

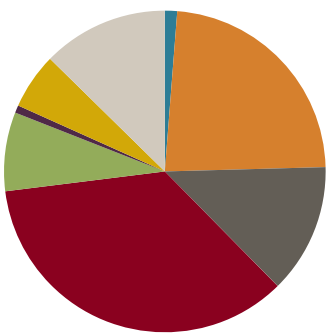
Fermilab Economic Impact in Illinois in FY 2010*

	Economic Output (millions)	Household Earnings (millions)	Employment
Fermilab Expenditure Economic Impact	$564.6	$174.5	3,899
Visitor Economic Impact	$78.4	$22.1	630
Total Economic Impact	$643.0	$196.6	4,529

Source: Anderson Economic Group, LLC

*As each dollar spent by Fermilab enters the economy, it supports additional business activity, jobs, and payroll. The numbers in this table reflect these multipliers.

Fermilab Expenditures in FY 2010



Receiving Industry	Total Expenditure (millions)
Professional, Scientific, Technical Services	$169.3
Households	$111.6
Insurance Carriers	$62.4
Wholesale Trade	$60.5
Social Assistance	$38.0
Utilities	$26.9
General Manufacturing	$5.9
Travel and Accommodations	$3.6
Grand Total	**$478.2**

ABOVE Fermilab scientists inspect a device for a neutrino experiment.

A CENTER FOR SCIENTIFIC DISCOVERY

As the leading facility for particle physics research in the United States, Fermilab draws thousands of scientists to the region to work on experiments that expand knowledge of the universe. Fermilab is home to the world's most intense high-energy beam of neutrinos—particles that may hold the key to understanding why the universe is made of matter. Full-time Fermilab scientists and visiting researchers use the facility's Remote Operations Center and Grid Computing Center to conduct experiments with Switzerland's Large Hadron Collider.

The work of these scientists, and their engagement in the community, adds to regional and state economies.

In FY 2010

4,529
JOBS CREATED
in Illinois

$643
MILLION
total economic output
in Illinois

$196.6
MILLION
in income for Illinois households

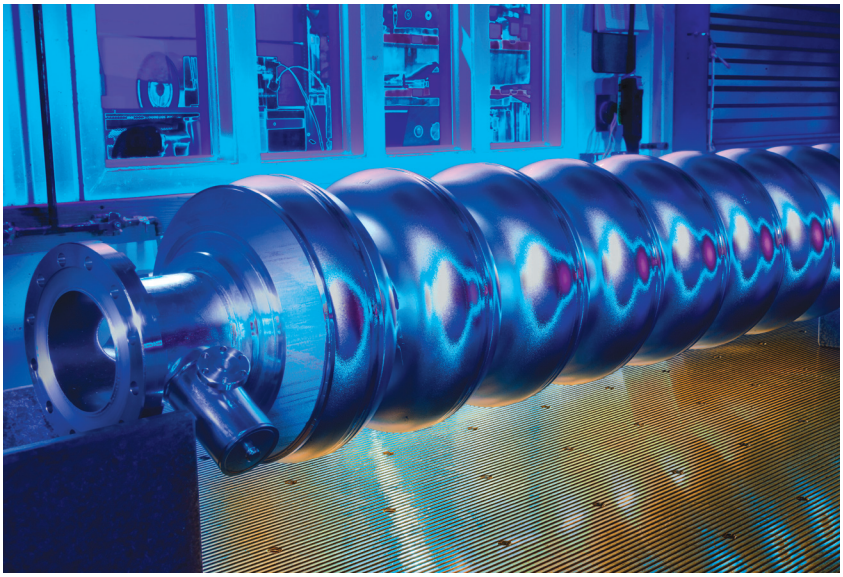
87%
of all jobs were in the eight-county CHICAGO REGION

ABOVE Fermilab scientists develop advanced accelerator technology with potential applications in such areas as energy and materials development.

THE UNIVERSITY OF CHICAGO | Fermilab

For Fermilab's full economic impact report, visit
uchicago.edu/research/economic-impact.shtml

A CATALYST FOR INDUSTRY INNOVATION



Fermilab's scientific breakthroughs—and its collaborations with industry—have far-reaching effects. Construction of Fermilab's particle accelerator in the 1980s required 140,000 miles of superconducting wire, which supported the industry and helped it expand and lower manufacturing costs. These advances hastened the development of magnetic resonance imaging (MRI), medical imaging technology that relies on magnets made of superconducting wire. Today more than 30,000 particle accelerators are used in the industrial processing of plastics, auto tires, computer chips, and many more applications. The accelerators and innovations of tomorrow represent still greater opportunities.

Current Collaborators on Accelerator Technology

- **Pavac Industries, Inc.**—an electron beam technology firm
- **Euclid TechLabs LLC**—a research and development company specializing in dielectric materials for particle accelerators, communications, and microwave applications
- **Roark Industries and Niowave Inc.**—organizations aiming to develop superconducting structures that will advance proton and electron linear accelerators

In Development

- **High-quality, low-cost scintillators**—a specialized material that detects and transmits light produced in particle collisions
- **Superconducting radio-frequency cavities**—an energy-efficient technology driving the design of the next generation of particle accelerators
- **The Illinois Accelerator Research Center**—a 42,000-square-foot Fermilab facility being built in partnership with the Illinois Department of Commerce and Economic Opportunity and the U.S. Department of Energy

ABOVE Superconducting radio frequency cavities are a key technology for next-generation accelerators and the future of particle physics.

A PIPELINE FOR YOUNG SCIENTISTS

Fermilab welcomes thousands of K–12 students every year to see scientific practice in action. In 2010 alone, more than 18,000 students participated in activities at Fermilab, and Fermilab staff visited 16,000 students in their classrooms. The Fermilab Ask-a-Scientist program engages local community members through monthly talks and tours with staff scientists and engineers. These contributions to local science education lay the groundwork for the nation's next scientific trailblazers.

Every year

2,500 **TEACHERS** participate in Fermilab training activities to advance K–12 science education.

90 United States and international **COLLEGE STUDENTS** intern at the laboratory through 11 different programs.

500+ **GRADUATE STUDENTS** and dozens of **POSTDOCTORAL RESEARCHERS** conduct experiments at Fermilab; 1,800 PhDs have been awarded for research at Fermilab since 1972.

18,000+ **K–12 STUDENTS** visit Fermilab to learn about fundamental physics and regional ecology by exploring the laboratory's 6,800 acres, which include nature trails, marshes, ponds, and a herd of bison.

400 **LOCAL HIGH SCHOOL STUDENTS** participate in Saturday morning physics courses taught by Fermilab scientists.