
Fermilab
Education and
Public Outreach
Science is
Essential

# Program Listing

## FAMILIES & STUDENTS

- Family Open House
- Family Outdoor Fair
- Get-to-Know the Lederman Science Center
- QuarkNet Summer Research Program
- Saturday Morning Physics
- Science Adventures
- Scout Programs
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- TARGET
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## EDUCATORS

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- Classroom Presentations
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- Lecture Series
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- Prairie – Our Heartland
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  - Biology, Chemistry, Physics
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- TRAC

## PUBLIC

- Ask-a-Scientist
- Get-to-Know Fermilab
- Guided Tours (Private)
- Prairie Plant Survey

## Contact the Fermilab Education Office

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| **Fermilab Education Office** | For information about education programs at Fermilab, call (630) 840-3092. |
| **Lederman Science Center** | For information about the science center, call (630) 840-8258. |
| **Tours** | For information about guided tours, call (630) 840-5588. |
| **Any Other Questions** | Call: (630) 840-8258<br>Or email: edreg@fnal.gov |

## Education and Public Outreach at Fermilab

Fermilab is committed to developing the science, technology, engineering and mathematics (STEM) workforce and stimulating science literacy. Laboratory programs serve students at all levels from prekindergarten to graduate school.

Fermilab's Education Office supports programming for educators, families, young people and the general public. Our porgrams provide avenues for technical staff to engage these audiences with Fermilab's science and technology. Themes include scientific discovery, practical applications, and scientific and engineering practices. Because the next generation STEM workforce is in school today, programs must strengthen teaching and learning in science, technology, engineering and mathematics. Our programs are a catalyst for change and resource to schools and districts nationwide.

## Fermilab Friends for Science Education

Fermilab Friends for Science Education, a not-for-profit organization, partners with the Fermilab Education Office to develop educational programs for teachers, students and families. More information about the organization is available at: http://ed.fnal.gov/ffse

# EDUCATORS

## Lecture Series

www.fnal.gov/culture

**For grades 9-12.** Fermilab offers a public lecture series on a wide range of topics presented by experts in their respective fields. Tickets can be purchased through the Fermilab box offices.

## Particles and Prairies

ed.fnal.gov/programs/pnp

**For grades 6-8.** This life science program features the biodiversity of the Illinois tallgrass prairie. Learn about scientific tools your students can use to gather data and make observations that will help increase their knowledge and appreciation of this habitat. The unit incorporates mathematics, language arts, social science and art in this curriculum. Teachers who attend the workshop can bring their students on a field trip to Fermilab. Fee required for workshop.

## Phriendly Physics

ed.fnal.gov/programs/phriendly

**For grades K-5.** The Phriendly Physics instructional unit is a series of simple, open-ended experiments. Explore topics such as light, electricity and magnetism, heat, and mechanics with a master elementary school teacher and Fermilab scientists. Teachers who attend the workshop can bring their students on a field trip to Fermilab. Fee required for workshop.

## Prairie – Our Heartland

ed.fnal.gov/programs/poh

**For grades 3-5.** This interdisciplinary unit conveys the story of the Illinois tallgrass prairie. Gain knowledge of the biodiversity of the prairie community and its role in Illinois history. Learn ways to entice your students to become prairie stewards through language arts, mathematics and science. Teachers who attend the workshop can bring their students on a field trip to Fermilab. Fee required for workshop.

## QuarkNet

quarknet.fnal.gov

**For grades 9-12.** This national program brings high school teachers and their students into the particle physics research community. Teachers experience scientific research and work with scientists to support instructional change. Students analyze real data and collaborate with other students worldwide. (Co-funded by the Department of Energy and the National Science Foundation)

## Summer Secondary Science Institutes Biology, Chemistry and Physics Topics

ed.fnal.gov/programs/institutes

**For grades 9-12.** The Summer Secondary Science Institutes offer one- or two-week workshops on a variety of physics, chemistry and biology topics. Teachers learn new science content, classroom activities, and techniques for engaging students. Fee required.

# EDUCATORS

## Teacher Resource Center

ed.fnal.gov/programs/trc

**For grades K-12.** The Teacher Resource Center provides a preview collection of K-12 instructional materials. Services include professional development workshops, consultation assistance, a periodical holding list, bibliographies and telephone reference. Educators have access to curriculum materials, books, multimedia, periodicals, newsletters and reports on science and mathematics education, standards, assessment, equity and other topics.

## TRAC

ed.fnal.gov/interns/programs/trac

**For grades 7-12.** This summer program provides science, mathematics, computer science and technology teachers with professional scientific, engineering or technical experiences. Teachers are matched with mentors and jobs that best match their skills and interests. The knowledge they obtain of cutting-edge science and technology can be transferred back to the classroom. (Offered by the Particle Physics Division)

# PUBLIC

## Ask-a-Scientist

ed.fnal.gov/programs/ask

**For grades 6+.** On the first Sunday of each month (except holiday weekends when there is a one-week delay) Fermilab offers a lecture and guided tour. Suggested audience: adults and students with a keen interest in science! The presentation and tone is set for high school seniors and college freshmen. (Co-offered with the Office of Communication)

## Get-to-Know Fermilab

ed.fnal.gov/programs/tours

**For ages 10+.** This guided tour is held most Wednesdays throughout the year, from 10:30 AM - 12:00 PM. Meet in the Wilson Hall atrium for an introductory tour of the lab. View all of Fermilab from the 15th floor, then visit the Linear Accelerator building and Main Control Room.

## Guided Tours (Private)

ed.fnal.gov/programs/tours

**For ages 10+.** Groups of 10 or more can schedule a two-hour tour of Fermilab. Meet in Wilson Hall for an introduction to the lab, then head to the 15th floor for a view of Fermilab. Visitors move on to the Linear Accelerator building and Main Control Room.

## Prairie Plant Survey

ed.fnal.gov/programs/quadrat

**For grades 4+.** This citizen scientist program monitors plant progression in the reconstructed Fermilab prairie. Explore parts of the prairie that are not normally open to the public. Expect to spend two hours in the prairie.

## FAMILIES & STUDENTS

### Family Open House

ed.fnal.gov/ffse/openhouse

**For grades 3+.** A party for children who bring an adult with them to learn about the world of physics with hands-on activities, tours and demonstrations. Typically takes place on a Sunday afternoon in February. (Co-funded with Fermilab Friends for Science Education)

### Family Outdoor Fair

ed.fnal.gov/events/outdoor-fair

**For grades K+.** A celebration of the great outdoors for families at the Lederman Science Center! Activities include walking the emerging tallgrass prairie, netting for land and water critters, and visiting the bison herd. Typically held on a Sunday afternoon in June. (Co-funded with Fermilab Friends for Science Education)

### Get-to-Know the Lederman Science Center

ed.fnal.gov/programs/tours

**For grades 4+.** A docent offers a guided tour of the Lederman Science Center exhibits. Explore Fermilab science from a kid's point of view! This tour meets on the first Saturday of each month at 10:00 AM. (Co-funded with Fermilab Friends for Science Education)

### QuarkNet Summer Research Program

ed.fnal.govinterns/programs/quarknet

**For grades 9-12.** QuarkNet offers summer research opportunities for students who have demonstrated a strong interest in and aptitude for science and mathematics. Two teams consisting of four students and one teacher work for six weeks with scientsts or engineers on projects related to the Fermilab research program. (Co-funded by the Department of Energy and the National Science Foundation)

### Saturday Morning Physics

smp.fnal.gov

**For grades 9-12.** Fermilab offers a ten-week Saturday morning program that introduces selected high school students to topics in modern physics. The SMP website has extensive program information. (Offered by the Accelerator Division and the Particle Physics Division)

### Science Adventures

ed.fnal.gov/sciadv

**For grades K-8.** Fermilab offers classes for children and families during the summer months of June, July and August, and on Saturdays during the school year. Experienced instructors teach classes covering a variety of science, engineering and mathematics topics. Fee required.

### Scout Programs

ed.fnal.gov/programs/scouts

**For grades 4-12.** Fermilab docents lead badge workshops for Girl Scouts, Webelo Cub Scouts and Boy Scouts. Fee required.

## FAMILIES & STUDENTS

### STEM Career Expo

ed.fnal.gov/programs/careerfair

**For grades 9-12.** High school students join science, technology, engineering and mathematics experts from a wide variety of careers. Attend panel discussions and meet and speak with experts. (Co-funded with Fermilab Friends for Science Education)

### TARGET

ed.fnal.gov/interns/programs/target

**For grades 10-11.** Paid internship for Illinois high school sophomores and juniors with a strong interest in and demonstrated aptitude for mathematics and science. Aims to grow representation of underrepresented groups in the sciences and engineering at the college level and consequently the workforce. (Offered by the Equal Opportunity & Diversity Office)

### Wonders of Science

ed.fnal.gov/events/wos

**For grades 1-7.** A fast-paced series of demonstrations on chemical and physical phenomena. Each family receives a kit of materials to continue experimenting at home. This annual program is held in the spring. Fee required.

## EDUCATORS

### Beauty and Charm

ed.fnal.gov/programs/beauty

**For grades 6-9.** This physical science program features themes such as "Methods of Science," "Seeing the Unseen," and the "Human Element" of science. The unit uses Fermilab physics as a context to convey how scientists think and work, and how we can learn about things that we cannot see. Teachers who attend the workshop can bring their students on a field trip to Fermilab. Fee required for workshop.

### Classroom Presentations

ed.fnal.gov/programs/demos

**For grades 2-12.** Classroom presentations are free of charge and available to schools within 90 minutes' driving time of Fermilab. Programs include a range of physics topics, such as electricity and magnetism, the physics of sports and Mr. Freeze's cryogenics show.

### High School Tours

ed.fnal.gov/programs/tours

**For grades 9-12.** Fermilab offers tours for students: the standard guided tour or a behind-the-scenes tour for smaller groups. Both include Q&A with a member of the technical staff.

### Insects at Work in Our World

ed.fnal.gov/programs/insects

**For grades 1-2.** This life science program features the world of insects and their relatives by exploring three habitats. In this unit students identify and sort insects and learn how they grow, change and work. Make a classroom insect collection. Teachers who attend the workshop can bring their students on a field trip to Fermilab. Fee required for workshop.

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Education and Public Outreach

ed.fnal.gov