

## Calendar

Wednesday, Oct. 15  
3:30 p.m.  
DIRECTOR'S COFFEE BREAK - 2nd  
Flr X-Over  
4 p.m.  
[Fermilab Colloquium](#) - One West  
Speaker: Robert Garisto, Physical  
Review Letters  
Title: Half a Century of Physical  
Review Letters

Thursday, Oct. 16  
THERE WILL BE NO PHYSICS AND  
DETECTOR SEMINAR THIS WEEK  
2:30 p.m.  
[Theoretical Physics Seminar](#) - Curia II  
Speaker: Keith Ellis, Fermilab  
Title: The Assault on One-Loop QCD  
3:30 p.m.  
DIRECTOR'S COFFEE BREAK - 2nd  
Flr X-Over  
THERE WILL BE NO  
ACCELERATOR PHYSICS AND  
TECHNOLOGY SEMINAR TODAY

[Click here](#) for NALCAL,  
a weekly calendar with  
links to additional  
information.

## Weather



Showers  
59°/43°

[Extended Forecast](#)  
[Weather at Fermilab](#)

## Current Security Status

[Secon Level 3](#)

## Wilson Hall Cafe

## Feature

### U.S. LHC users' strategize for the future at Oct. 24 meeting



This map represents where LHC collaborators are located throughout the country. [Click on the image to download a pdf.](#)

The thought of taxes, health insurance and child care can make many U.S. citizens reach for an aspirin. Imagine sorting out these issues while living in a foreign country.

Helping to ease the headache for the hundreds of U.S. scientists who moved overseas to work at CERN is one reason the U.S. LHC Users' Organization exists. Issues about living overseas, the schedule at CERN and what users can expect in 2009 are some topics collaborators will discuss at the [U.S. LHC Users meeting](#) at Fermilab on Friday, Oct. 24.

"A lot of people are anxious about what to expect with the new schedule and are interested to know what the experiments can do in the meantime," said Michael Barnett, a physicist at Lawrence Berkeley National Laboratory and chair of the U.S. LHC Users' Organization.

This upcoming meeting is the first time that all U.S. LHC communities — accelerator research, ALICE, ATLAS, CMS, LHCb and TOTEM — will meet together.

"This users' organization is unique because it is not attached to a specific lab," Barnett said. "We try to get support for our field and deal with issues that U.S. LHC members face."

As part of the organization's mission, U.S. LHC users travel to Washington, D.C. every year to meet with representatives on Capitol Hill. At the upcoming meeting, users will have the opportunity to receive feedback from members of DOE, NSF and the Office of Science and

## From the Accelerator Physics Center

### Advancing accelerator technology

*Eric Prebys, director of the US LHC Accelerator Research Program, wrote this week's column.*

On Aug. 1, I became the director of the U.S. LHC Accelerator Research Program, succeeding Steve Peggs of Brookhaven National Laboratory. The LARP program coordinates the US contributions to accelerator R&D for the LHC. The goal is to maximize the LHC luminosity—producing the largest number of proton-proton collisions possible.



Eric Prebys

The program began in 2003 to efficiently exploit U.S. accelerator expertise, both by aiding in LHC commissioning and by contributing to LHC instrumentation and future upgrades. The annual LARP budget has ramped up to about \$12 million per year and supports activities at FNAL, BNL, LBNL and SLAC, as well as some university participation.

LARP is divided into three parts: accelerator systems, magnet systems and programmatic activities.

The accelerator systems effort has delivered important LHC instrumentation, which scientists will use to measure luminosity and machine optics as well as measure and control the tune of the accelerator. It also includes R&D on a number of issues related to improving LHC operation in the future.

Magnet systems represent the largest and most ambitious part of LARP. The goal is to develop stronger magnets for the LHC Phase II upgrade, which will take place late in the next decade. The new magnets will use wire made of a new superconductor (Nb3Sn), which will allow higher field operation than the traditional superconductor (NbTi) used at present. These higher magnetic fields will allow us to focus the beam more intensely at the interaction regions at the center of the LHC detectors.

Programmatic activities include the managing of the LARP itself and also fund two important programs to recruit the next generation of accelerator scientists. The Toohig Fellowship is awarded to postdocs to work on

Wednesday, Oct. 15

- Smart cuisine: Cajun style lentil soup
- Cajun chicken ranch
- Smart cuisine: tilapia w/jalapeno lime sauce
- Parmesan baked pork chops
- Smoked turkey panini pesto mayo
- Assorted sliced pizza
- Chicken alfredo fettucine

[Wilson Hall Cafe Menu](#)

## Chez Leon

Wednesday, Oct. 15

Lunch

- Beef bourguignon
- Parsley buttered egg noodles
- Apple walnut cake w/cream Chantilly

Thursday, Oct. 16

Dinner

- Roasted red pepper & portabella mushroom Salad
- Surf & turf
- Potato cups
- Brussels sprouts
- Lemon Napoleons

[Chez Leon Menu](#)

Call x4598 to make your reservation.

## Archives

### [Fermilab Today](#)

### [Result of the Week](#)

### [Safety Tip of the Week](#)

### [ILC NewsLine](#)

## Info

**Fermilab Today**

is online at:

[www.fnal.gov/today/](http://www.fnal.gov/today/)

Send comments and suggestions to:

[today@fnal.gov](mailto:today@fnal.gov)

Technology Policy who will share their perspectives. In addition, Alan Boyle, a science reporter at **MSNBC**, will speak about a journalist's view of the LHC in popular culture.

All interested participants, including Fermilab employees, must register [online](#) by Oct. 17. There is no registration fee.

-- *Elizabeth Clements*

## In the News

### Fermilab to show off cultural diversity through fair

From **Kane County Chronicle**, Oct. 15, 2008

Flags from around the world flutter in front of Wilson Hall at Fermilab and scientists from more than 38 countries use Fermilab, which will hold its first cultural diversity fair from 11 a.m. to 2 p.m. Friday.

"We want to showcase who we all are," said Dianne Engram, Fermilab's equal opportunity manager. "Our original intent was to celebrate our employees and the diversity of employees that come together to do science at the lab."

The fair is being presented by The Diversity Council for Fermilab.

As part of the fair, several groups will perform traditional dances or songs from their countries in Ramsey Auditorium in Wilson Hall.

"Most of the performances will be by employees," Engram said.

Currently, 2,300 scientists from more than 28 countries use the laboratory.

[Read more](#)

## In the News

### 'Unbreakable' encryption unveiled

From **BBC News**, Oct. 9, 2008

Perfect secrecy has come a step closer with the launch of the world's first computer network protected by unbreakable quantum encryption at a scientific conference in Vienna.

The network connects six locations across Vienna and in the nearby town of St Poelten, using 200 km of standard commercial fibre optic cables.

Quantum cryptography is completely different from the

LARP projects. Toohig fellows divide their time between CERN and one of the four LARP host labs. LARP also sponsors the Long Term Visitors program, which pays for the expenses of scientists going to CERN to help with LHC commissioning.

For more information on LARP visit [www.uslarp.org](http://www.uslarp.org) or e-mail me at [prebys@fnal.gov](mailto:prebys@fnal.gov).

## Announcements

### [Have a safe day!](#)

Town hall meeting with future director general of CERN  
Fermilab will host an open town hall meeting with Rolf-Dieter Heuer, the designated director general of CERN, Oct. 28, at 10:45 a.m. in Ramsey Auditorium, followed by a reception in the WH Art Gallery (2nd floor) at noon. The town hall meeting includes a 10-minute presentation by Heuer and a 60-minute Q&A session. Everyone is invited. Heuer would like to meet with all members of the U.S. particle physics community.

Cafeteria closes at 1 p.m. on Friday  
To set up tables for the labwide party, the cafeteria will close at 1 p.m. on Friday, Oct. 17. Lunch will be served from 11 a.m. to 1 p.m.

"The Atom Smashers", panel discussion at Fermilab  
Fermilab will show the 78-minute directors' cut of the PBS documentary "[The Atom Smashers](#)," which looks at the race for discovery between Fermilab and CERN. The event includes a panel discussion with scientists featured in the film, including Nobel Laureate Leon Lederman. Saturday, October 18, at 7 p.m., in Fermilab's Ramsey Auditorium. Tickets are \$5. For tickets, call (630) 840-2787.

DreamWeaver CS3: Advanced Nov. 5  
An advanced course in Dreamweaver CS3 will take place Nov. 5. Attendees can learn to establish database connectivity, work with record sets, create interactive page elements and administer database records and Web sites. Attendees can also learn to create a user authentication system. [Learn more and enroll](#)

Diversity Fair Oct. 17  
Fermilab's Diversity Council and the Planning Group for Multicultural Events subcommittee hosts the inaugural Diversity Fair from 11 a.m. to 2 p.m. Friday, Oct. 17. More than a dozen cultural exhibits and international foods will be on display and for sampling in the Wilson Hall atrium. Cultural performances, including traditional dance and song, will occur in the lunchroom and Ramsey Auditorium. To learn more about the Diversity Council, visit the [Web site](#).

### [Additional Activities](#)

kinds of security schemes used on computer networks today.

These are typically based on complex mathematical procedures which are extremely hard for outsiders to crack but not impossible given sufficient computing resources or time.

But quantum systems use the laws of quantum theory, which have been shown to be inherently unbreakable.

[Read more](#)