

Calendar

Friday, Sept. 7

3:30 p.m.

DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over

4 p.m.

[Joint Experimental-Theoretical
Physics Seminar](#) - One West

Speaker: Y. Gershtein, Florida
State University

Title: New Searches Results
from DZero

Monday, Sept. 10

2:30 p.m.

[Particle Astrophysics Seminar](#)

- Curia II

Speaker: D. Hooper, Fermilab
Title: Dark Matter Annihilations
and the WMAP Haze

3:30 p.m.

DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over

4 p.m.

All Experimenters' Meeting -
Curia II

Special Topics: ILC Vertical
Cavity Test Facility; New Run
of COUPP (T-945)

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

Weather



Thunderstorms 81°/61°

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

Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

Feature

\$225,000 awarded for joint UChicago - Fermilab Initiatives



THE UNIVERSITY OF
CHICAGO



Fermilab

Donald Levy, vice president for Research and for National Laboratories announced Wednesday that researchers and scientists at the University of Chicago and Fermi National Accelerator Laboratory were awarded a total of \$225,000 for new joint research projects through the university's new Strategic Collaborative Initiatives (SCI) program for Fermilab. The research projects cover a broad range of studies from chemistry to high energy particle physics to computational cosmology. Proposals for collaborative projects that included researchers from Argonne National Laboratory were also considered and one was selected for funding.

[Read more](#)

Feature

Long Racetrack magnets go the distance



One coil of the Long Racetrack magnet being moved into the reaction oven at BNL. *Image courtesy Peter Wanderer, BNL*

The LHC won't start up until next year, but physicists and engineers in Europe, Japan and the United States already are working toward collider upgrades. In a major milestone

From ILC Newline

Piece by piece

Fermilab and DESY collaborate to build the first U.S. cryomodule



[Fermilab and DESY technicians work together in the clean room at MP9 to string the first four cavities together.](#)

The 1,200 parts started to arrive at Fermilab in June. When fully assembled, these many parts will make up the first cryomodule for International Linear Collider R&D in the United States. The ILC will ultimately require 1,680 of these cooled modules that hold the superconducting cavities, maintaining a temperature only two degrees above absolute zero. This first US cryomodule -- which will only be used for R&D purposes--represents a special collaboration between Fermilab and DESY.

Known as the "cryomodule kit," all 1,200 parts, including instructions, come from DESY in Hamburg, Germany. In addition to having the first cryomodule to test in the US, putting the kit together ultimately serves as a learning exercise -- for both laboratories involved.

Fermilab's Tug Arkan compares the cryomodule kit to buying a piece of furniture at IKEA. The furniture may come with instructions, but building it is not always simple. This is why a Fermilab Cryomodule Assembly Facility team spent six weeks at DESY during a cryomodule assembly last year to observe and record the assembly processes. It is also why teams of technicians from DESY will spend weeks at a time at Fermilab this year to assist during each stage of the cryomodule assembly.

[Read more](#)

Friday, Sept. 7

- New England clam chowder
- Black & blue cheese burger
- Mardi gras jambalaya
- Swedish meatballs
- Bistro chicken & provolone panini
- Assorted pizza slices
- *Carved top round of beef

[Wilson Hall Cafe Menu](#)

Chez Leon**Wednesday, Sept. 12
Lunch**

- Stuffed summer vegetables
- Fresh ginger cake

**Thursday, Sept. 13
Dinner**

Closed

[Chez Leon Menu](#)

Call x4598 to make your reservation.

Archives**Fermilab Today****Result of the Week****Safety Tip of the Week****ILC NewsLine****Info**

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www.fnal.gov/today/

Send comments and suggestions to:
today@fnal.gov

for the U.S. LHC Accelerator Research Program, the first Long Racetrack Shell magnet, a precursor of an upgraded superconducting quadrupole magnet, was successfully tested the week of July 23 at Brookhaven National Laboratory.

The U.S. group is working toward upgrades for the "inner triplet" quadrupole magnets that perform the final focusing of the particle beams prior to collision. Due to the magnets' proximity to the interaction points, the inner triplets are built to withstand high doses of radiation without failing. An upgraded, higher-luminosity LHC will mean a hotter environment for the magnets.

Because upgraded inner triplets will need to operate at a higher temperature and higher magnetic field, the U.S. team from BNL, Fermilab and Lawrence Berkeley National Laboratory is evaluating Niobium-Tin (Nb₃Sn) technology for the magnet coils, rather than the well-established Niobium-Titanium used in current LHC magnets.

"Nb₃Sn magnets would be an advantage

because they can run at a higher temperature and higher magnetic field gradient, but the material is really hard to work with," explained BNL's Peter Wanderer, LARP's magnet systems leader. A European project, CARE/NED, is also investigating Nb₃Sn conductors for use in upgraded LHC magnets.

The Long Racetrack Shell magnet, so called because of its shape, is the first accelerator-style Nb₃Sn magnet to be fabricated

significantly longer than one meter. The 3.6-meter long magnet approaches the length that will be needed for the LHC. BNL fabricated the coils for the LRS, LBNL designed and fabricated the support structure. Fermilab contributed through project management, conductor characterization, insulation development and the insulation of a practice coil.

The first of these magnets, LRS01, was tested the week of July 23 at BNL. "Training" of the magnet -- subjecting it to repeated quenches -- started above 80 percent of the magnet's estimated maximum current density of 10.6 kA. After five quenches the current reached 91 percent of the estimated maximum, corresponding to a coil peak field of 11 Tesla.

"The LRS01 magnet is providing key information for the fabrication of long niobium-

-- Elizabeth Clements

Feature**Computer safety awareness presentations on Sept. 11**

A presentation titled "Staying Safe on the Internet" will take place at noon on Sept. 11, Computer Safety Awareness Day, in the Wilson Hall Atrium and One West conference room. Employees may want to invite family members to the presentation. The security team will demonstrate ways your identity could be stolen, and follow-up with some things you can do to prevent this from happening.

There will be other presentations in One West and continuous streaming video demonstrations on security issues in the atrium. Security experts will be available all day to answer any questions and demonstrate recommended practices.

Formal training classes offered that day will meet ITNA training requirement for those who do not want to have to pass an online test.

- Basic Computer Security
- Security Essentials for Desktop System Administrators
- Security Essentials for Fermilab System Administrators

(All lab computer users are required to take one of the above three classes, either online or in this presentation.)

- Protecting Personal information (PII) at Fermilab

(All lab employees and visitors will be required to take the above class, either online or in this presentation.) Other presentations on topics of interest are:

- NetIDMgr and You (the easy way to deal with using certificates for secure authentication)
- Policy Formulation, the Real Scoop (how government laws and regulations related to computer security find their way to the lab and shape our policy)

Announcements

tin coils and the optimization of shell-based support structures," said Paolo Ferracin from LBNL.

Fermilab's Giorgio Ambrosio, who coordinated the activities at the three labs, said "the next step for LARP is to build the Long Quadrupole, the first-ever 4-meter long Nb₃Sn accelerator magnet model."

-- *Katie Yurkewicz*



The support structure of the Long Racetrack magnet. *Image Courtesy Paolo Ferracin, LBNL*

In the News

Multiple problems push LHC start to next spring

CERN engineers are relieved to have more time to finish constructing the LHC

From *Physics Today*, September 2007

In June CERN director general Robert Aymar announced that the \$7 billion Large Hadron Collider would start up in May 2008, eight months later than planned. The delay was no surprise to accelerator and particle physicists, and it was generally blamed on a highly publicized failure related to magnets made at the US's Fermilab. Actually, the magnets only added to other complications at the LHC.

[Read More](#)

Have a safe day!

Register for ALCPG07

The joint meeting of the American Linear Collider Physics Group and ILC Global Design Effort will take place at Fermilab Oct. 22-26. The deadline to register is Oct. 12. A block of rooms has been reserved for meeting attendees at the Pheasant Run Resort in St. Charles. This block of rooms only will be held until Sept. 19. Meeting attendees are encouraged to book your rooms soon. Questions? Contact [Cynthia M. Sazama](#). [More information](#)

TIAA- CREF financial education seminar

On Sept. 13, 2007, TIAA-CREF will hold a financial education seminar titled "Your Retirement Income Options." The seminar will be presented by Chad Stein and will focus on several types of available income options. Attendees will obtain a basic understanding of how to select income options to fulfill your needs upon retirement. Enroll online [here](#) and review the information about the seminar [here](#).

Entertainment discount book available in Recreation Office

Entertainment Ultimate books are now available in the Recreation Office for \$20.25. The book includes a special promotion of a free membership to Entertainment on Vacation that gives you two weeks of discounts to wherever you vacation. More information [here](#).

Classifieds

New [classified ads](#) have been posted on *Fermilab Today*.

[Additional Activities](#)