

## Calendar

**Fri., July 20**

**11:45 a.m.**

Special Brown Bag Lunch Seminar - Curia II  
 Speaker: C.-M. Chen, Soochow University  
 Title: Physics Demonstration Using Everyday Objects

**2:00 p.m.**

Gallery Lecture Series - One West

Speaker: L. Fisher (Artist)  
 Title: In Search of Meaning

**3:30 p.m.**

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

**4:00 p.m.**

Joint Experimental-Theoretical Physics Seminar - One West  
 Speaker: C. Schwanenberger, University of Manchester  
 Title: Top Quark Physics at D0 as a Probe for New Physics

**Sat., July 21**

**7:00 p.m.**

Debut of Folk on the Prairie: Garnet Rogers and Ronny Cox Outside the Lederman Science Center; Rain location - Auditorium (PLEASE NOTE TIME and LOCATION)  
 Tickets: \$12/\$6

**Mon., July 23**

PARTICLE ASTROPHYSICS SEMINARS WILL RESUME IN THE FALL

**3:30 p.m.**

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

**4:00 p.m.**

All Experimenters' Meeting - Curia II  
 Special Topic: MI Group Collimation Efforts

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

## Weather

## Feature

### Divisions come together to help with shutdown

Beginning August 6, Fermilab's divisions and departments will come together for 10 weeks to make accelerator improvements during this year's shutdown. The main projects planned are replacement of the pi-shaped power poles and installation of collimators and new corrector magnets in the Main Injector and Booster accelerators.



Bob Mau

"When the beam goes off, it provides the only opportunity for everyone to get into the accelerator enclosures to do necessary maintenance and to make improvements." said Roger Dixon, head of the Accelerator Division.

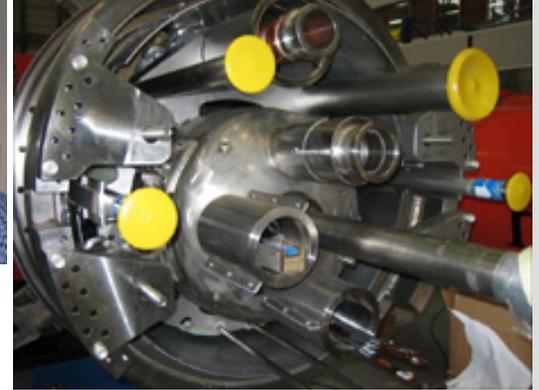
Fermilab's wooden pi poles, designed by founder Robert Wilson and built more than 30 years ago, are in desperate need of renovation. The pi poles are rotting and have been plagued by woodpeckers and insects for years. It will take about eight weeks for workers to replace the old poles with identically painted steel ones.

In order to control beam losses in the Main Injector, workers will install a new collimator that will shield the rest of the accelerator from the lost beam. The new steel and marble collimators will take 9 to 10 weeks to install and will help keep residual radiation levels in the tunnel low. The new correction magnets going into the Booster will make it possible to correct the Booster orbit through the entire cycle. Half the magnets will be installed now, and the other half will be installed during another shutdown in summer 2008.

"An enormous amount of maintenance work will also go on during the shutdown," said Accelerator Operations Chief Bob Mau. "When the accelerator is down, we repair things like vacuum systems and water systems and do hose changes. We're trying to get the machine to a point where it's completely reliable for the next year of operation."

## Update

### Inner triplet successfully completes pressure test



A Q1 magnet assembly with cartridges held in place by the four earlike brackets bolted to the outer flange.

An inner triplet assembly of quadrupole magnets at Point 8-Right of the LHC at CERN successfully completed a pressure test in the accelerator tunnel on Friday, July 13. The triplet, which included three quadrupole magnets and the associated cryogenic and power distribution box, or DFBX, met all test specifications at the requisite pressure of 25 atmospheres for one hour. The triplets will focus particle beams prior to particle collisions at each of four interaction regions in the Large Hadron Collider, now under construction at CERN.

The pressure test is designed to test the accelerator components in conditions that will occur during LHC operations. To withstand the asymmetrical forces generated by the pressure, the Q1 and Q3 magnets, at either end of the triplet assembly had each been fitted with a set of four metal cartridges. The cartridges reinforce internal support structures that broke in two such magnets during an earlier pressure test on March 27. The cartridges limit movement of the magnets inside their metal jackets, or cryostats.

Metal brackets attach the cartridges to one end of each of the affected magnets. The cartridges have a compound design consisting of an aluminum alloy tube and an Invar rod to allow them to function over a broad range of temperatures. Invar is a form of steel whose dimensions change very little in response to

 **Sunny 76°/54°**

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

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

### Friday, July 20

- Old fashioned ham & bean
- Philly style chicken
- Braised pork chops
- Baked fish over rice
- Roasted veggie & provolone panini
- Assorted pizza slices
- Baked potato

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

### Wednesday, July 25

#### Lunch

- Salad of ham, gruyere & cabbage in roquefort dressing
- Chocolate mousse w/ almonds & cookies

### Thursday, July 26

#### Dinner

- Pasta w/roasted summer vegetables
- Veal saltimbocca
- Sautéed spinach w/lemon & pine nuts
- Peach melba

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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[Result of the Week](#)

[Safety Tip of the Week](#)

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[Info](#)

The main impact on most Fermilab staff will be the site-wide power outage August 6 from 7:00 to 7:30 a.m. when the shutdown begins. There will also be localized power outages throughout the 10-week period. A schedule of planned power outages during the shutdown can be found [here](#).

-- *Amelia Williamson*

### Feature

## ES&H annual picnic brings section together



[ES&H employees eat and relax during the division's annual picnic on Wednesday](#)

A beanbag toss and home-cooked food were some of the highlights Wednesday afternoon at the ES&H Section's annual picnic outside the Kuhn Barn. The event was a chance for employees and summer students who are scattered around Fermilab to get together and celebrate their section's success. This year's annual picnic featured plenty of delicious burgers, chicken, cookies and cakes, cooked by ES&H volunteers.

"We've done it for almost 20 years," said organizer Nancy Sells. "It promotes camaraderie among the group and gives everyone a chance to get together to eat and chat. We have employees in the High Rise as well as on various sites, so it's nice to get them all together for a celebration."

-- *Lauren Younis*

### In the News

temperature differences.

[Read more...](#)

### From ILC Newsline

## Project managers join the GDE Executive Committee



[EC at work: Kaoru Yokoya, Ewan Paterson, Akira Yamamoto and Nick Walker](#)

The new GDE Project Managers met face to face with the GDE Executive Committee (EC) for the first time in Rome on 9 and

10 July. As of this meeting, they are part of the EC. Made up of senior members of the GDE, the EC gives me advice on important policy issues and planning. It also shares the responsibility for all major decisions of the GDE. The EC had a very important central guiding role during the reference design, and will continue as the highest-level committee during the engineering design phase that will lead to an Engineering Design Report in about 2010. In a very unusual arrangement, the three Project Managers are now officially members of the EC for all matters outside of EDR project management and at the same time will be reviewed by the EC for the progress of their own work.

[Read more](#)

-- *Barry Barish*

### Announcements

#### Monthly Leave Sheets Due Today

Monthly Leave Sheets are due in Payroll by 10 a.m. today.

#### Midsummer Theatre Troupe Shakespeare in the Park

If you're looking for something to do this weekend, head out to see Bruce Worthel of the Accelerator Division plays Egeus in Shakespeare's "Midsummer Night's Dream." Batavia's Clark Island is still off limits due to construction, but you can see the play for free at these locations:

Friday 7/20/07 - Naperville, Central Park Bandshell - 7 p.m.

Saturday 7/21/07 - Geneva, Island Park - 6 p.m. pre-show, 6:30 p.m. Shakespeare

Tuesday 7/24/07 - Aurora, Peyton's Roundhouse - 7 p.m.

Tuesday 7/31/07 - Aurora, Peyton's

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)

## From Nature July 19, 2007:

### Unseen Universe: Welcome to the dark side

*Physicists say that 96% of the Universe is unseen, and appeal to the ideas of 'dark matter' and 'dark energy' to make up the difference. In the first of two articles, Jenny Hogan reports that attempts to identify the mysterious dark matter are on the verge of success. In the second, Geoff Brumfiel asks why dark energy, hailed as a breakthrough when discovered a decade ago, is proving more frustrating than ever to the scientists who study it.*

We're underneath 1,400 metres of Italian mountain, walking through cavernous halls that lead from a 10-kilometre-long road tunnel. The scientists working within the Gran Sasso National Laboratory near L'Aquila seem ant-like in scale against the backdrop of vast metal spheres, towers and scaffolding that house their underground experiments. Physicist Elena Aprile is hurrying the group along, pointing out one project after another. She stops to take a photo of one, exclaiming at its size. We finally reach Aprile's XENON10 experiment, which is tucked away at the end of a small side tunnel. This is the project into which Aprile has poured her energy over the past few years, one of several experiments at Gran Sasso and around the world that are waiting for a passing piece of 'dark matter' to show itself.

Once upon a time, waiting for new particles to reveal themselves was a major endeavour. Scientists in the 1940s would also head to the mountains — to their tops, not to underground caverns — carrying emulsion-covered plates to capture strange new cosmic rays. But as particle accelerators became more powerful, physicists became adept at making their own novelties, and lying in wait for chance discoveries fell out of fashion. In this, dark-matter searches are something of a throwback.

[Read More](#)

Roundhouse - 7 p.m.

Saturday 8/4/07 - Aurora, Phillips Park - 7 p.m.

### Outdoor Folk Concert Saturday

This Saturday at 7 p.m., the Fermilab Cultural Society will present the debut of [Folk on the Prairie](#) featuring Garnet Rogers and Ronny Cox. The event will take place outside the Lederman Science Center. Tickets are \$12 for adults and \$6 for kids 18 and under, and are available by calling the box office at 630-840-ARTS (2787) or by visiting the ticket office in WH behind the Users Office.

### Art Gallery Lecture today

The Fermilab Art Gallery Lecture Series will present a lecture by artist Lylie Fisher on her current Art Gallery exhibit "In Search of Meaning." The lecture will be held in One West from 2:00 - 3:00 p.m. The exhibit runs until August 23 and more information can be found [here](#).

### Salary Review Process Location Change

General information for all employees on updates to the salary review process is now available [online](#). Please review this presentation. If you have any questions on the information provided or any topic related to the upcoming salary review, please attend one of the town-hall meetings scheduled for 1:30 p.m. on July 25, 26, and 31 in Wilson Hall, Auditorium.

### 2007 GSA Triathlon

The 2007 GSA Triathlon will take place on August 11, 2007. Those interested in participating should email [Mandy Rominsky](#) as soon as possible. Please include your estimated swim time and overall completion time in your message. Volunteers are also needed to help during the event and should contact Mandy.

### Classifieds

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

### [Additional Activities](#)