

## Furlough Information

New furlough information, including an [up-to-date](#) Q&A section, appears on the [furlough Web pages](#) daily.

## Layoff Information

New information on Fermilab layoffs, including an [up-to-date](#) Q&A section, appears on the [layoff Web pages](#) daily.

## Calendar

### Thursday, May 15

**8:30 a.m. - 9:00 p.m.**

US CMS 2008 Run Plan Workshop

[See schedule here](#)

**1:00 p.m.**

Physics and Detector Seminar - West Wing WH-10NW

Speaker: E. Paterson, Stanford Linear Accelerator Center  
Title: ILC Cost Reduction

**2:30 p.m.**

[Theoretical Physics Seminar](#) - Curia II

Speaker: T. Taylor, Northwestern University  
Title: Jet Signals for Low Mass Strings at the LHC

**3:30 p.m.**

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over  
**THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY**

### Friday, May 16

**8:30 a.m. - 6:00 p.m.**

US CMS 2008 Run Plan Workshop

[See schedule here](#)

**3:30 p.m.**

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over  
**4 p.m.**

[Joint Experimental-Theoretical Physics Seminar](#) - One West  
Speaker: J. Marriner, Fermilab

## Feature

### Purdue University Calumet group contributes to CMS



Purdue University Calumet graduate student Ana Momidik (left) and undergraduate Dayna Thompson work on the FPIX subdetector for CMS.

At Purdue University Calumet, physicist Neeti Parashar gets students involved early.

As the leader of the CMS group for her university, she has never had a shortage of projects for her students to do. "I like to focus on the undergraduate students for research exposure because they stay longer and can avail the opportunities presented to them," Parashar said.

After joining the Purdue Calumet faculty in 2005, Parashar soon began to recruit students to work on the CMS forward pixel detector, or FPIX. "Our group started with two undergraduates, one graduate student and a postdoc," she said. "We're small, but we have contributed 11 percent to the total number of shifts that led to the completion of the FPIX detector."

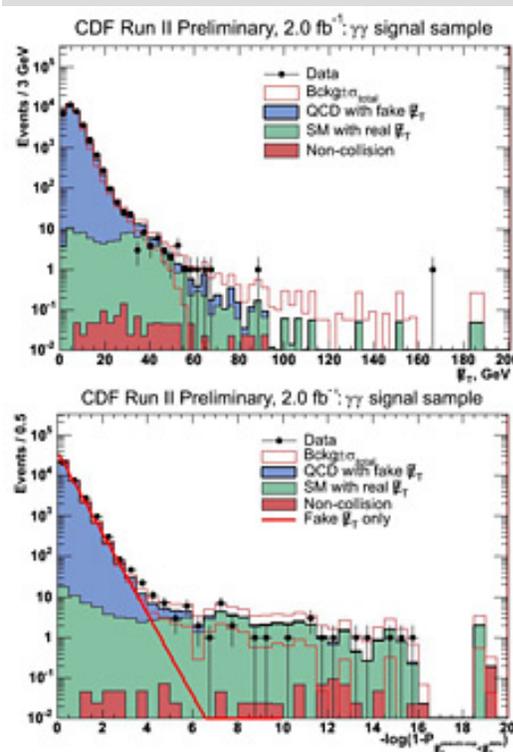
FPIX makes up the two ends of the cylindrical CMS detector and consists of 18 million silicon pixels. Because FPIX operates very close to the proton beams, where the density of particles emerging from a collision is high, the subdetector plays an important role in



Neeti Parashar with a piece of the FPIX subdetector.

## Fermilab Result of the Week

### Illuminating the dark matter



The missing energy in two-photon events (top) and its significance (bottom). The top plot illustrates that missing energy itself can not discriminate well between events with fake (blue) and true (green) missing energy because of the long blue tail. The bottom plot shows that its significance provides a much better separation.

Cosmological observations of the past decade have been spectacular. Scientists discovered a stunning fact: ordinary matter, which comprises everything we can see, contributes only 5 percent to the total mass of the universe. What we call dark matter and dark energy - mysterious names for something that doesn't emit light and that still eludes our direct observation - makes up the rest of the universe.

Physicists at CDF look for unusual collision events that lead to two photons and missing energy. Such events could be a sign of dark matter or some other new physics. According to the Standard Model, the Tevatron should rarely produce those events. But if the Tevatron creates dark matter particles and they escape the CDF detector undetected, CDF should record more events with two photons and missing energy than expected by

Title: Results from the SDSS-II Supernova Survey

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

## Weather



Mostly Cloudy 66°/45°

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secou Level 3](#)

## Wilson Hall Cafe

### Thursday, May 15

- Southwestern chicken tortilla
- Philly style cheese steak
- \*Garlic herb roasted pork
- Smart cuisine southwestern grilled chicken
- Southwestern turkey wrap
- Assorted slice pizza
- \*Marinated grilled chicken Caesar salads

**\*Carb restricted alternative**

[Wilson Hall Cafe menu](#)

## Chez Leon

### Thursday, May 15

#### Dinner

- Mushroom duxelle in a vol-au-vent
- Halibut w/Veracruz sauce
- Jasmine rice
- Chocolate raspberry cake

### Wednesday, May 21

#### Lunch

- Cabbage & bacon calzone
- Caesar salad
- Espresso mousse

[Chez Leon menu](#)

Call x4598 to make your reservation.

## Archives

pinpointing the tracks of particles.

Parashar's group performed tests and assembly of the 800 multilayered plaquettes that contain silicon readout chips and sensors that make up FPIX. They then assembled them onto 200 panels. Each panel underwent thermal testing to check whether it works as designed.

The Purdue University Calumet group also developed software to describe the FPIX layout and how its pieces fit with the rest of the detector. Experimenters are already using the software to visualize what to expect when data starts flowing from the first LHC collisions.

The Purdue Calumet group will work at CERN this summer when commissioning of FPIX nears completion. They will then turn their attention to data analysis and plan to focus on identifying jets of particles originating from bottom quarks, a crucial tool for finding the Higgs particle.

-- Elizabeth Clements

## Photo of the Day

## The calm after the storm



AD's Marty Murphy captured Tuesday's powerful storm, which fortunately didn't affect HEP stores in the Tevatron, but did produce lightning and a faint double rainbow.

## In the News

the Standard Model. So far, CDF has observed no excess of such events.

The precise determination of missing energy is crucial to find a signal. Energy mismeasurement, which can easily fake a missing-energy signature, creates a major experimental challenge. Coupled with the abundant production of regular two-photon events in the Standard Model, mismeasurement of energy leads to a huge fake background.

Physicists at CDF developed a powerful method to distinguish between fake and true missing energy signals. The method can identify one real event with missing energy among a thousand regular two-photon events.

Despite not having observed a dark matter signal so far, CDF scientists remain optimistic. They also plan to apply their method to other exotic signatures with missing energy. For example, the technique could help in the search for the Higgs boson decaying into two  $W$  bosons.

[Learn more](#)



These CDF collaborators contributed to the analysis. From left: Sasha Pronko (Fermilab), Max Goncharov (Texas A&M), Ray Culbertson (Fermilab) and Shin Shan Yu (Fermilab).

## Result of the Week Archive

## Accelerator Update

### May 12-14

- Three stores provided 32 hours and 58 minutes of luminosity
- Linac Klystron RF station 7 repaired

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

## Announcements

## [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)

*Editor's note: Layoffs at Fermilab will not go forward any earlier than the week of May 19. Fermilab is waiting to hear from officials in Washington D.C. Layoff notifications could be delayed until after the Memorial Day weekend.*

## **Fermilab layoffs expected soon**

From *Daily Herald*, May 14, 2008

Fermilab will need to lay off fewer people than officials originally predicted.

But the cut of 140 workers at the Batavia laboratory -- about 7.5 percent of the lab's work force -- will likely be within a month.

Because of early retirements and attrition, the number of layoffs was reduced from 200, which officials had estimated in December, Fermilab spokesman Kurt Riesselmann said.

That was when Fermilab got word its budget would be cut for the coming year.

Laboratory officials have submitted their restructuring and layoff plan to the U.S. Department of Energy and are waiting for its approval, Riesselmann said.

He expects employees will get word at the end of this month or the beginning of June.

Even if the laboratory receives supplemental federal funding -- which Illinois officials are pushing -- it will be used to eliminate unpaid furlough days before hiring back workers, Riesselmann said.

[Read more](#)

### In the News

## **Movers**

From *Nature*, May 15, 2008

Craig Hogan, director, Center for Particle Astrophysics, Fermi National Accelerator Laboratory and professor of astronomy and astrophysics, University of Chicago, Illinois.

Craig Hogan was hooked on astrophysics the minute he learned that remnant heat from the Big Bang was still detectable. His wide-ranging contributions to the field include the co-discovery of 'dark energy' - the mysterious force behind the acceleration of the expanding Universe. But he hopes that future experiments will reveal an as-yet undetected dimension of the Universe.

"Craig has forged unusually original and

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

### **Gallery art removal today**

Art work should be picked up from the gallery in Wilson Hall today from 8 a.m. to 2 p.m.

### **Prairie cleanup today**

The second scheduled volunteer cleanup will take place at 11:45 a.m. today. Meet at Wilson Hall ground floor on the east side where a bus will pick up volunteers to take them to the cleanup area, Pine Street and D-Road. Lunch will be at the Education Center picnic area.

### **Linear Collider School accepts applications through today**

The Third International Accelerator School for Linear Colliders will accept applications through May 15. Fermilab will host the school Oct. 19-29 at the Oak Brook Hills Marriott Hotel in Oak Brook. Graduate students, postdoctoral fellows, junior researchers and physicists considering a career change from experimental to accelerator physics may apply. The school will focus on TeV-scale linear colliders including the International Linear Collider and the Compact Linear Collider (CLIC). Visit the [school Web site](#) to apply or for more information.

### **Register to meet APS on site**

Fermilab has invited American Physical Society members to visit the laboratory May 20-21 to assess the work climate for women and minorities. Employees may sign up to attend more than a dozen discussion meetings in One East. Employees also may sign up to meet individually with the site team. View the meeting schedule [here](#), under "What's New." Space is limited to facilitate discussion. Meeting slots will be filled in the order requests are received. The APS Team wishes to keep the focus group meetings to 20 people. To register, contact Dianne Engram at [engram@fnal.gov](mailto:engram@fnal.gov) with your name, position and which meeting you want to attend.

### **Users' meeting June 4, 5**

Fermilab will host the annual Users' meeting on Wednesday, June 4, and Thursday, June 5. For more information or to register, visit the [Users' Meeting Web site](#).

### **Project X workshop June 5-6**

Following the Users' Meeting June 5, Fermilab and the UEC will hold the third Workshop on Physics with a high-intensity proton source. The workshop begins with a town meeting in One West on the evening of Thursday, June 5, and continues the next day. A preliminary program and registration are [here](#).

versatile theoretical insights into astrophysics," says Martin Rees, Hogan's PhD adviser at the University of Cambridge, UK. "If you look at any number of subjects - from dark energy to how the Universe began - you'll find the earliest papers are from Craig."

After postdocs at the universities of Cambridge and Chicago and at the California Institute of Technology in Pasadena, Hogan helped to build the first theoretical group at the University of Arizona's Steward Observatory. There, he learned the inner workings of telescope-based experiments as they applied to theory projects.

[Read more](#)

#### **National Instruments mobile expo Friday**

From 9 to 11 a.m. Friday, May 16, in the Wilson Hall west parking lot you can see demonstrations of the latest technologies for automated test. The National Instruments Expo showcases a variety of example systems that tackle mechanical, DC, RF and mixed-signal test.

#### **Bike to Work Day needs you Friday**

Between 100 and 125 conservation-minded and health-conscious employees at Fermilab plan to pose for photo at noon Friday, May 16, in honor of National Bike to Work Day. Anyone who commutes by bicycle, even sporadically, is welcome to join in the picture in the horseshoe in front of Wilson Hall. Fermilab Bicycle Commuters are organizing the photo.

#### **Fermilab Singers to perform Friday**

The Fermilab Singers will perform a concert at noon on Friday, May 16, in Ramsey Auditorium. A short reception will follow in the lobby. Please join us. For more information, see the [Fermilab Singers Web site](#).

#### **[Additional Activities](#)**