

## Calendar

### Thursday, February 24

**12:00 p.m.** E-Week: The Grid for

Engineers - One West

Speaker: Ruth Pordes

**3:00 p.m.** E-Week: Director's Talk to

Engineers and All Engineers Picture -

One West

Speaker: Mike Witherell

**2:30 p.m.** Theoretical Physics Seminar -

Curia II

Speaker: L. Everett, University of Florida,

Gainesville

Title: Neutrino Mixing from the Top-Down

and the Bottom-Up

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR

PHYSICS AND TECHNOLOGY

SEMINAR TODAY

### Friday, February 25

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

**4:00 p.m.** Joint Experimental Theoretical

Physics Seminar - 1 West

Speaker: D. Litvintsev, Fermilab

Title: Status of Pentaquark Searches

## Weather



Chance Flurries **35°/23°**

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secou Level 3](#)

## Wilson Hall Cafe

## Local College Students Work and Learn at Fermilab



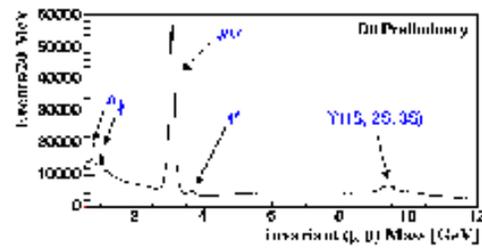
Michael Pogwizd (left), Marsela Jorgolli, and Jameson Gill are doing research at DZero under Pushpa Bhat. (Click on image for larger version.)

While Fermilab attracts physicists from places as far away as Germany and Japan, the lab also has programs aimed at students from local colleges. Pushpa Bhat, a DZero scientist in Fermilab's Accelerator Division, for example, has supervised and mentored over two dozen undergraduates through internship programs sponsored by grants from the National Science Foundation, Federal Work Study programs and others.

"We specifically want to encourage students from community colleges that don't have research programs," said Bhat, who is also an adjunct professor at Northern Illinois University and Florida State University. "Right now, the three students are searching for second generation lepto-quarks in DZero using advanced multi-dimensional analysis methods. The students help process data, make plots and look at event characteristics. The detectors are very complex and take time to understand, but it's a good hands-on experience on how

## Fermilab Result of the Week

### Using Muons to See the Microcosm



This dimuon mass spectrum demonstrates the strength and physics potential of the DZero detector. (Click on image for larger version.)

At DZero we are studying and searching for very rare particles, made in proton-antiproton collisions. However, these particles live for such a tiny fraction of a second that we can never directly observe them, but have to reconstruct them from their decay products.

In fact, of all the particles we know, relatively few survive long enough to be measured directly. Among those we can detect are muons, which are a heavier relative of the electron. Muons lose energy relatively slowly, and are generally the only detectable particle to pass all the way through our experiment without stopping. For this reason we have specialized muon detectors on the outer edge of the experiment, which provide an unambiguous and low background identification of muons.

## Thursday, February 24

Southwestern Chicken Tortilla Soup

Philly Style Cheese Steak \$4.75

Baked Fish w/ Roasted Leeks and Peppers \$3.75

Tomato Basil Chicken Parmesan \$3.75

Classic Cuban Panini \$4.75

Four Cheese Pizza \$2.75

Marinated Grilled Chicken Caesar Salads \$4.75

The Wilson Hall Cafe now accepts Visa, Master Card, Discover and American Express at Cash Register #1.

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) will reopen starting

Wednesday, March 2. Call x4512 to make your reservation.

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research is done."

Michael Pogwizd, a sophomore in physics at the College of DuPage, has worked at Fermilab since December. "In particle physics, you have to be very precise because there are a lot of different types of events in the data collection," he said. "You have to know how to look at the data, and patience is very important."

Marsela Jorgolli, also a sophomore in physics at the College of DuPage, began working at Fermilab in January. "I've learned more about the physical concepts behind the data, computer simulations and the UNIX system, which we use a lot."

The third student, Jameson Gill, a junior in math and computer science at the University of Illinois, Urbana-Champaign, has been working at Fermilab for a little over a year, helping with modeling, simulation and analysis.

## E-Week Today: Grids for Engineers

The Computing Division's Ruth Pordes will present today's E-week featured talk, "The Grid for Engineers," at noon in One West. Pordes will present some of the development and directions for Grids of interest and potential benefit to engineers.

The Director's talk to all engineers will be held at 3:00 p.m. today in One West and will be immediately followed by an all engineers picture in the atrium. A social



Ed Crumpley talks about Fermilab architecture with photographs of Fermilab pioneers at yesterday's E-Week presentation.



Raimund Stroehmur (left) and Pieter van den Berg (right) have worked on the software used to identify muons.

Several types of particles decay to two muons, and by measuring both it is possible to reconstruct the mass and properties of those particles (see mass spectrum). At high mass, we see the Z boson and searches are going on for previously unknown particles which are even heavier.

Muons can also be among the decay products of the heaviest known particle, the top quark. The Tevatron is currently the only place capable of producing the top quark, and the muon detectors are a good way of identifying and studying top candidates. Similarly, measurements of the second heaviest quark, the bottom, rely heavily on muon identification. Overall, the outstanding design and performance of the muon detectors at DZero have made it possible to produce world-class physics results.



(From left) Dmitri Denisov (Fermilab), Alexei Ferapontov (IHEP), Gavin Hesketh (Northeastern University), Rob Harrington (Northeastern University), Dennis Shpakov (Northeastern University), Linda Stutte (Fermilab) and Fred Bartlett (Fermilab) have all worked on the muon system used to identify muons in the detector. (Click on image for larger version.)

recognition for all engineers will follow at Kuhn Barn.

[more information](#)

### Accelerator Update

#### February 21 - February 23

- During this 48 hour period, Operations established one store that combined with an existing store provided the experiments with approximately 37 hours and 35 minutes of luminosity
- Linac had quad power supply problems
- Main Injector had MECAR problems
- Recycler stashed antiprotons

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

### In the News

#### From the *Daily Herald*, February 23, 2005

##### Fermilab looking to trim staff

By Tona Kunz

Fermilab will ask some staff to voluntarily leave and will close the door on one experiment to mitigate budget shortfalls.

But officials will keep another two dozen experiments and projects running as well as public tours and the hands-on science museum.

"For about the last six years we've had what could be called flat funding, and at some point you have to make an adjustment to that," said spokesman Mike Perricone.

The high-energy physics laboratory on the eastern edge of Batavia plans within the next two weeks to start offering early retirement to its 2,100 full-time staff. At least 90 people, or 5 percent of the work

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

#### Correction

Yesterday's article "Fermilab Awards Safety Plaques and Posters," incorrectly implied that Dave Carlson is associated with the Accelerator Division's Business Services. Carlson is the head of the Business Services Section, which is not part of the Accelerator Division. The article also stated a wrong number for the hours of work performed by the Computing Division. Director Mike Witherell presented the Computing Division with an award for the best sustained safety performance for working nearly a million and a half hours since their last lost time accident.

The article "E-Week Today: Architecture and Science," also in yesterday's issue, featured a photo of Curt Danner, Maurice Ball and Sten Hansen. The photo caption incorrectly stated that Curt Danner is an Electrical Engineer in the Particle Physics Division. Danner is a Technical Specialist in the PPD Electrical Engineering Department.

*Fermilab Today* regrets these errors.

### Announcements

#### International Folk Dancing

International Folk Dancing will continue to be held once more, on February 24, at the Geneva American Legion Post at 7:30 p.m. There will no dancing next week, March 3, but then dancing will resume at Kuhn Barn beginning with a "Back to the Barn and Anniversary Party" on March 10. Info at 630-584-0825 or 630-840-8194 or [folkdance@fnal.gov](mailto:folkdance@fnal.gov).

#### Tai Chi Classes

force, need to take advantage of the offer or lab officials will consider layoffs.

[read more](#)

Tai Chi classes will be held in the exercise room or gymnasium of the Recreation Facility on Friday mornings, beginning March 4 through April 22 from 6:30 AM - 7:15 AM. Classes will be conducted by an instructor from New Body Health & Fitness, Inc. in Geneva. The cost for this 8-week session is \$60.00. The deadline to register is February 28. You must be a current Recreation Facility member to participate.

[more information](#)

[Upcoming Activities](#)