

## Calendar

### Thursday, March 30

**12:00 p.m.** Wellness Works Brown Bag Seminar - 1 West

Speaker: M. Kinzler (Registered Dietician and Licensed Dietician)

Title: Cholesterol Countdown: How to Lower Your Cholesterol by Changing Your Diet

**2:30 p.m.** Theoretical Physics Seminar - Theory Conf Rm WH-3NE

Speaker: A. de Gouvêa, Northwestern University

Title: The Neutrino Mass Hierarchy

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

BREAK - 2nd Flr X-Over

**4:00 p.m.** Special Joint Experimental Theoretical Physics Seminar - Auditorium (note location)

Speaker: D. Petyt, University of Minnesota

Title: First MINOS Results from the NuMI Beam

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

### Friday, March 31

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

BREAK - 2nd Flr X-Over

**4:00 p.m.** Joint Experimental Theoretical Physics Seminar - 1 West

Speaker: S. Mrenna, Fermilab

Title: LHC Phenomenology

## Weather

## Special MINOS presentation today at 4:00 p.m.

The MINOS collaboration will announce its first accelerator-based result in a special seminar today at 4 p.m. in the Ramsey auditorium.

## Spring cleaning will cause outages around the site



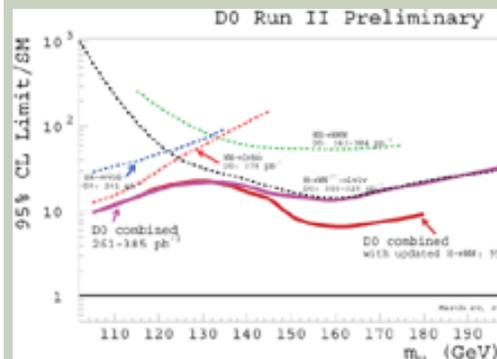
The village and other areas on site will experience periodic power losses this spring. (Click on image for larger version.)

It's that time of year again. The lab will have periodic cuts in power as the Facilities Engineering Services Section (FESS) cleans breaker panel and high voltage switch gear. "During the winter, critters sneak into our power stations and build nests, bolts become loose and power panels become dirty," said Bob Mau, head of Operations. "We have periodically shut down the power feeder so we can go in there and clean them out."

Employees can expect outages over the next few months as workers clean out the stations. The next major outage is scheduled for April 1, when power in the Linac, cross gallery, Main Control Room and computer rooms will be down from 7:00 am to 3 pm. On Monday, April 3, the

## Fermilab Result of the Week

## Searching for the Higgs boson in a combined way



The plot shows the cross section excluded by DZero divided by the cross section expected in the Standard Model (as a function of the Higgs mass,  $m_H$ ). The combined result is shown by the full lines. For example, at  $m_H=160$  GeV, DZero is within a factor of 6 of the expected cross section! The dashed lines summarize the combined analyses (each of which is already a combination of several sub-channels). (Click on image for larger version.)

Despite its success as a predictive tool, the Standard Model (SM) of particle physics remains incomplete without a means to explain the masses of the fundamental particles. One solution involves an undiscovered particle that generates particle masses via their mutual interactions. This yet to be discovered particle is the Higgs boson. Previous direct searches for the Higgs boson were made at the CERN Large Electron Positron collider (LEP) and showed that its mass had to be at least 114 GeV. There is strong, but indirect, evidence from other experimental measurements to suggest that the mass of the SM Higgs Boson can be no more than about 200 GeV. Luckily this range of masses is just where Tevatron experiments have a good chance of



Partly Cloudy 65°/55°

[Extended Forecast](#)[Weather at Fermilab](#)**Current Security Status**[Secon Level 3](#)**Wilson Hall Cafe****Thursday, March 30**

- Santa Fe Black Bean
- Sloppy Joe
- Stuffed Peppers
- Sauteed Liver & Onions
- Baked Ham & Swiss on a Ciabatta Roll
- California Pizza
- Crispy Fried Chicken Ranch Salad

[Wilson Hall Cafe Menu](#)**Chez Leon****Thursday, March 30****Dinner**

- Lobster Bisque
- Beef Medallions w/Morel Sauce
- Potato Dagenions
- Steamed Asparagus
- Fresh Strawberries w/Champagne Syrup

**Wednesday, April 5****Lunch**

- Asian Grilled Beef Salad
- Cold Lime Souffle w/Coconut Cookies

[Chez Leon Menu](#)

Call x4512 to make your reservation.

**Search****Search the Fermilab Today Archive****Info**

master substations will be down for 30 minutes, from 7:00 am to 7:30 am. Almost the whole site will lose power at this time, except for the Main Injector, the village, MI12 a and MI12 b and one of the cryo feeders. Other outages are planned for later in April. To see the tentative schedule, visit the [Accelerator Division operations website](#). Fermilab Today will run periodic announcements and reminders about the upcoming outages. If you have any questions email Bob Mau at [mau@fnal.gov](mailto:mau@fnal.gov).

—Siri Steiner

### Fermilab presented with National Safety Council's Occupational Excellence Achievement Award



DOE's Joanna Livengood presented the award to Bill Giffing, head of ES&H, and Director Pier Odonne on Tuesday.

According to the Bureau of Labor Statistics, Fermilab's injury rate is among the best of all Research and Development companies in Physical, Engineering, and Life Sciences. This earned Fermilab a National Safety Council's Occupational Excellence Achievement Award for 2005.

The award is based on the rate of injuries that resulted in days away from work per 100,000 hours worked. Fermilab has met the National Safety Council criteria for a

seeing evidence for its existence. Observing the Higgs would be a great achievement for the SM. If it does not exist we will need to fundamentally change our understanding of matter.

The DZero experiment is actively searching for the Higgs boson and has recently announced its most comprehensive result on the Higgs search, demonstrating a large improvement in search sensitivity. By combining the power of different search methods, a single upper limit on Higgs boson production can be set as a function of Higgs mass. Fourteen different channels were included in the combination as a result of the impressive teamwork of many researchers. The considered channels include those in which the Higgs is produced in association with a W or Z boson and also in which the Higgs is produced alone and subsequently decays to a pair of W bosons. The latter analysis has been updated to use 950 pb<sup>-1</sup> of DZero data.

The result in the figure above shows that although we have not yet seen the Higgs boson it is certainly possible (with a bit of luck) that it will be discovered by the end of "Run II" of the Tevatron. This result is both exciting and encouraging, as it has demonstrated that the Tevatron is on track to probe Higgs models further than ever before.

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Send comments and suggestions to [today@fnal.gov](mailto:today@fnal.gov)

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number of years, and began submitting their data to the NSC for consideration 3 years ago. Since that time, Fermilab has been presented with this award each year.

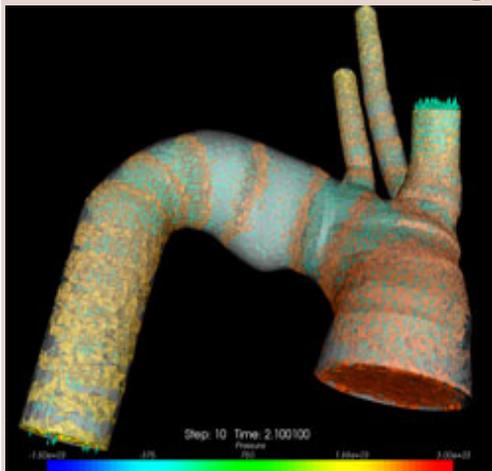
### Photo of the Day



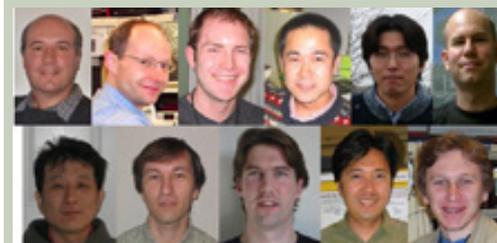
Believe it or not, this crayfish was found on site recently. "There are quite a few of these guys at the Lab," said Rod Walton, Fermilab ecologist. "We are home to two distinct species of crayfish that prefer different levels of moisture in their burrows." (Click on image to see where the crayfish was walking; courtesy of Jiri Kvita.)

### Science Grid This Week

#### Grid Gets the Blood Flowing



High resolution image of a three-dimensional arterial bifurcation.



From left to right: Gregorio Bernardi and Lars Sonnenschein (LPNHE-Paris), Wade Fisher, Kazu Hanagaki and Makoto Tomoto (FNAL), Marc Hohlfeld (LAL Orsay), Hyunwoo Kim (UTA), Sasha Khanov (Oklahoma S.U.), Johannes Elmsheuser (Munich), Suyong Choi (SungKyunKwan University), Maxim Titov (Freiburg). (Click on image for larger version.)

[Result of the Week Archive](#)

### Announcements

#### Fermilab Summer Day Camp: Registration Deadline Today

Registration for the Fermilab Summer Day Camp for children, ages 7 through 12 years, began March 1. Deadline to register is today, March 30. Entrance into the camp is made by lottery drawing on March 31. Camp sessions are as follows: Session I: June 12 - June 30, Session II: July 3 - July 21, Session III: July 24 - August 11. The fee for each three-week session is \$265.00. A \$100.00 per child/per session deposit is required at the time of registration. More information regarding the camp and registration forms can be found in the Recreation Office, Housing Office, Users Office and on the [recreation web page](#) or call the Recreation Office at x5427 or x2548.

#### English Country Dancing

English country dancing will continue at Fermilab's Barn, generally meeting the last Sunday afternoon of the month. The next session will be at 2 p.m., Sunday, April 30. The group is currently soliciting input from potential participants on their preferences for a meeting time during the summer. Please contact [folkdance@fnal](mailto:folkdance@fnal).

A collaboration of mathematicians, middleware developers and visualization scientists has demonstrated the most comprehensive three-dimensional model of human arterial blood flow ever attempted. The simulation of the human arterial tree, the network of arteries throughout the human body, was completed using TeraGrid resources.

[Read More](#)

#### In the News

### **The *Vancouver Sun*, March 28, 2006:**

#### **Tiny particle creates big buzz in science**

A major physics lab in the U.S. has found a particle, far smaller than any atom, that switches itself back and forth between being a piece of matter and a piece of anti-matter 17 trillion times each second.

It has taken 700 people in 20 countries, millions of dollars' worth of custom equipment, vast amounts of energy, and 20 years of work to find this.

[gov](#) or call 630-584-0825 or 630-840-8194.

#### **Memorial service for Doug Michael**

Employees and users are invited to attend a memorial service at Fermilab for neutrino physicist and MINOS co-spokesperson Doug Michael on Friday, March 31, at 1:30 p.m. Michael died on December 25, 2005 after a year-long battle with cancer. The service will be held at the MINOS detector building (a short walk from the Lederman Center) and includes the planting of 5 trees.

#### **Brown Bag Seminar**

Wellness Works presents a Brown Bag Seminar today, March 30, between 12-1 p.m. entitled "Cholesterol Countdown: How to lower your cholesterol by changing your diet." The seminar will be presented by Michele Kinzler, Registered Dietician and Licensed Dietician.

#### [Upcoming Activities](#)