

## Calendar

Thursday, Nov. 6  
1 p.m.

Physics and Detector Seminar  
- West Wing, WH-10NW  
Speakers: Marcel Stanitzki,  
Rutherford Appleton  
Laboratory, Norman Graf,  
SLAC National Accelerator  
Laboratory

Title: Reports from the CLIC08  
Workshop  
2:30 p.m.

[Theoretical Physics Seminar](#) -  
Curia II

Speaker: Gabe Shaughnessy,  
Northwestern University/  
Argonne National Laboratory  
Title: The Search for Dark  
Matter

3:30 p.m.

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

Friday, Nov. 7

3:30 p.m.

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

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

Speaker: Zhe Wang,  
Brookhaven National  
Laboratory

Title: New Measurement of the  
 $K^+ \rightarrow p^+ n n\text{-bar}$  Branching  
Ratio

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

## Weather

Shows  
67°/43°

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

## In Brief

### Power outage at Fermilab

A site-wide power outage occurred around 2:30 p.m. at Fermilab on Wednesday, Nov. 5. Power was restored to most of the site at 3:30 p.m. A static line bracket failed, shorting the main power feed to the site. The failure occurred on site near Casey's Pond, close to the northern boundary of the laboratory. The immediate area was secured by Fermilab Security. The Fermilab accelerator shut down. It poses no safety concerns.

All non-essential employees were sent home. All events for the rest of the day were cancelled. The Director's Volunteer reception will take place on Tuesday, Nov. 25 at 5 p.m.

## Feature

### Fermilab veterans' group wants you



Veterans Bill Flaherty and Joe Morgan host the veterans' exhibit at the Diversity Fair.

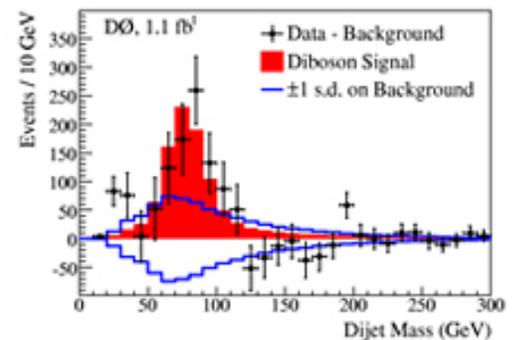
About five years ago, a group of veterans working at Fermilab led by Jed Brown, a retired Army major general, decided the laboratory needed a way for veterans to meet one another and celebrate their service.

They formed a veterans' e-mail list that distributes resource information and plans an annual celebration in Kuhn Barn on Veterans Day, Nov. 11, which typically draws 80 participants.

"Everyday someone will send me an update for the e-mail list," said ES&H's Rafael Coll, who now has a list of 140 veterans who work or worked at the laboratory.

## Fermilab Result of the Week

### A diboson landmark on the Higgs highway



This figure shows the excess of events in data above the background prediction for di-jet invariant mass. The expected signal shown in red and the blue lines indicates the systematic uncertainty on the background prediction.

As the Tevatron collaborations speed down the [Higgs highway](#), they are constantly checking their maps. As the researchers delve deeper into uncharted territory, they know they should encounter recognizable landmarks that tell them they're on track. Scientists from the DZero experiment have just announced that they have reached an important landmark and can point the way for the Tevatron Higgs search.

Higgs bosons with masses below  $\sim 135$  GeV decay dominantly to bottom quark pairs. Physicists reconstruct these quark pairs to find the originating particle mass and thus a hint of whether the event was a Higgs. In order to further simplify their search, the physicists look for Higgs production in association with a weak boson ( $W+H$  or  $Z+H$ ). Leptonic decays of the weak bosons help the real Higgs candidates stand out from the background. This signature of two bosons is very similar to the production of weak boson pairs ( $W+W$  or  $W+Z$ ), which occurs at a much larger rate. Physicists know that if they can observe the decay process  $WW/WZ \rightarrow l\nu qq$ , then they know how sensitive they must be to a potential  $WH \rightarrow l\nu bb$  signal. The  $WW/WZ \rightarrow l\nu qq$  signature is dominated by  $W$  bosons produced along with gluons, which is also the main background for the  $WH$  signal. To find evidence of  $WW/WZ$  production, DZero physicists had to

**Current Security Status**

[Secon Level 3](#)

**Wilson Hall Cafe**

Thursday, Nov. 6  
 - Santa Fe black bean  
 - Steak tacos  
 - Chicken Wellington  
 - Chimichangas  
 - Baked ham & Swiss on a ciabatta roll  
 - Assorted sliced pizza  
 - Crispy fried chicken ranch salad

[Wilson Hall Cafe menu](#)

**Chez Leon**

Thursday, Nov. 6  
 Dinner  
 - Corn chowder  
 - Mahi mahi  
 - Island rice  
 - Sautéed pea pods  
 - Key lime pie

Wednesday, Nov. 12  
 Lunch  
 - Eggplant parmesan  
 - Romaine, walnut & apple salad  
 - Espresso coupe

[Chez Leon menu](#)

Call x4598 to make your reservation.

**Archives**

**Fermilab Today**

[Result of the Week](#)

[Safety Tip of the Week](#)

[ILC NewsLine](#)

**Info**

The group encompasses all branches, ages, conflict arenas and those who served during peace and war times. Currently, all members come from U.S. service branches, but the group would like to attract members from outside the United States to reflect the international representation of the laboratory.

“Any veteran from an armed force anywhere in the world is welcome,” Coll said. “We all served our countries. We all share a common experience.”

To get put on the e-mail distribution list of events and resources, e-mail [rcoll@fnal.gov](mailto:rcoll@fnal.gov). Include your name, branch and years of service.

This year’s Veterans Day celebration takes place from 11 a.m. to 1:30 p.m. with a display of military flags, branch anthems, catering by Portillo’s and a guest speaker. The cost is \$7. Money is due by Friday to Joseph Morgan x4181, Greg Gilbert x6835, Karl Williams x3043 or Michael Frett x4663.

The veterans' group will use money left over from the event is used to fund receptions for those returning to work from active duty.

-- *Tona Kunz*

**Photo of the Day**

**Visitors from UChicago**



Last Friday, five representatives of the University of Chicago visited Argonne and Fermilab for a brief informational tour. Fermilab Deputy Director Young-Ke Kim accompanied them on their tour. At Fermilab, the group visited the viewing area on the 15th floor of Wilson Hall, the LHC Remote Operations Center and CDF. Shown on the 15th floor, from left: Nim Chinniah, vice president for administration and chief financial officer; Don Levy, vice president for research and for national laboratories; Steve Kloehn, news director; Kurt Riesselmann, Fermilab Office of Communication; Kim Gopf-Crews, vice president and dean of students in the University, Julie Peterson, vice president for communications.

understand this background at a previously unachieved level.

Using roughly 1.1 inverse femtobarns of data, DZero physicists searched for WW/WZ->lvjj (l=electron or muon) events. By looking only at the di-jet invariant mass spectrum, they found evidence for this signal at 3.3 standard deviations above the background-only prediction. Using multivariable event classification techniques, similar to those used in Higgs searches, the significance was enhanced to 4.4 standard deviations. This analysis, submitted for publication, is the first evidence of this signature at the Tevatron and provides a necessary validation of the advanced techniques also used in Higgs searches. With three times more data available for analysis, DZero researchers are eager to cruise past this landmark and speed down the road to the Higgs.

[Read more](#)



A team of DZero physicists made primary contributions to this analysis.



The members of DZero's online/offline data quality certification team perform a detailed study of all data to be used for analysis. Their careful validation of data quality helps ensure the success of analyses such as the one shown here.

**Accelerator Update**

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)

## Feature

### ICFA sharpens focus on the energy frontier

From **SLAC Today**, Nov. 3, 2008

"Particle physics is at a crossroads," said Chairperson Albrecht Wagner of the International Committee for Future Accelerators, in the opening moments of the ninth ICFA Seminar last Tuesday in Kavli Auditorium. "The Standard Model stands triumphant," Wagner said, "yet incomplete."

Evidence from past and present particle accelerators supports the Standard Model of the fundamental particles that make up matter, to a breathtaking precision, many physicists say. But observations from cosmology make a convincing case for additional matter—in large quantities—not accounted for. The Standard Model, it seems, provides pieces that fit elegantly, but do not complete, the particle physics puzzle. The next discoveries, Wagner said, will require experiments at energies beyond those of previous accelerators, into the extremely high energies present moments after the Big Bang. To reach this TeV energy scale, he said, physicists worldwide must concentrate their efforts at very few, very large accelerators.

-- *Shawne Workman*

[Read more](#)

## In the News

### The great fear of the unknown

From **USA Today**, Nov. 4, 2008

So much for the end of the world.

Fears that the atom-smashing Large Hadron Collider would create black holes — gravitational sinkholes from which not even light can escape — and end life as we know it have joined UFOs and Bigfoot on the roster of pseudoscientific scares.

Before it was launched on Oct. 10, bloggers, late-night comedians, worried parents around the world and at least two lawsuits greeted the mere start-up of the collider with dismay. But Earth clearly survived the collider's first nine days of operations before a technical glitch shut it down.

[Read more](#)

Nov. 3-5

- Troubled DZero cryo system temporarily hooked to TeV
- Store 6541 sets new record with a luminosity of 332.12E30
- Linac has RF station problems

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

## Announcements

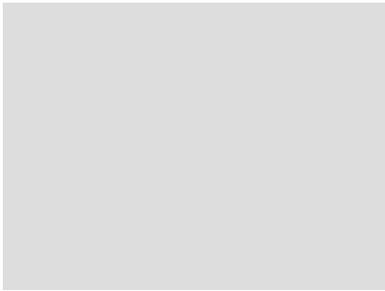
[Have a safe day!](#)

Exciting Explorations! child care program offered  
Exciting Explorations!, a child care program for children ages 7-12, will take place Nov. 24, 25 and 26, depending on interest. A summer-camp counselor will lead the program. Two snacks and beverages are provided. Please send a sack lunch. Program cost is \$25 a day and payment is due upon reservation. Reservations are due Nov. 19. To register or for more information, contact Mary or Patti in the Children's Center at x3762 or e-mail [daycare@fnal.gov](mailto:daycare@fnal.gov).

Physics conference affects parking, cafeteria service Friday, Saturday  
On Friday and Saturday, about 600 physicists and physics undergraduates will attend at Fermilab the 2008 Quadrennial Congress of the physics honor society Sigma Pi Sigma and the Society of Physics Students. Employees planning to eat in the cafeteria on Friday, Nov. 7, should have lunch early and aim to leave the lunch area by 12:45 p.m. Parking near Wilson Hall will be difficult. [More information](#) is available in the Nov. 5 issue of *Fermilab Today*.

NALWO Thanksgiving feast Nov. 17  
NALWO, Fermilab's women's organization, will host "Thanksgiving Across America," a thanksgiving feast on Monday, Nov. 17, from 11 a.m. – 1 p.m. at Chez Leon in the Users' Center. NALWO members will prepare food and chefs will describe how to prepare traditional dishes. Contact the Housing Office at x3777 or Rose Moore at (630) 208-9309 with questions. Photo identification is required to enter the laboratory.

International folk dancing Nov. 6  
International folk dancing will meet today, Nov. 6, in Ramsey Auditorium at 7:30 p.m., and return to Kuhn Village Barn next week. Teaching and children's dances take place



earlier in the evening, and request dancing later on. Newcomers are always welcome and you do not need to come with a partner. Call (630) 584-0825 or (630) 840-8194 or e-mail [folkdance@fnal.gov](mailto:folkdance@fnal.gov) for more information.

[Additional Activities](#)