

## Calendar

[Have a safe day!](#)

Wednesday, Feb. 24

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4 p.m.

[Fermilab Colloquium](#) - One

West

Speaker: Joseph Polchinski,  
Kavli Institute for Theoretical  
Physics

Title: Gauge/Gravity Duality

Thursday, Feb. 25

2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: David Shih, Institute  
for Advanced Study

Title: Recent Progress in  
(General) Gauge Mediation

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO

ACCELERATOR PHYSICS

AND TECHNOLOGY

SEMINAR TODAY

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

[Upcoming conferences](#)

## Campaigns

[Take Five](#)[Tune IT Up](#)

## H1N1 Flu

For information about H1N1,  
visit Fermilab's flu information  
[site](#).

## Weather

## Feature

## Engineers key to laboratory's continuing success



Fermilab's engineers gather for a group photo in celebration of Engineers Week 2010.

Fermilab's celebration of National Engineers Week showcased the cutting-edge know-how and tireless dedication of the laboratory's more than 200 engineers.

"All the big dreams we can cook up would not be realized if we didn't have your help," Fermilab Director Pier Oddone said in a [kick-off talk](#). Oddone outlined some of the laboratory's future international projects and said they will require engineers to work more closely with other laboratories and universities and integrate components fabricated elsewhere.

That doesn't mean Fermilab engineers will have less to do. An array of complex and ground-breaking projects and experiments will keep Fermilab a leader in the field of particle physics and require top-notch engineering skills.

A series of R&D talks throughout the week detailed the pivotal role in design and production that Fermilab's engineers will continue to play for the advancement of a muon collider, Project X, the International Linear Collider, liquid argon detectors, rare decay experiments, a Long Baseline Neutrino Experiment and accelerator upgrades.

During E-Week engineers gave talks to the non-engineers of the Fermilab community as well and offered tours to seldom-visited areas of the laboratory.

"We were very fortunate to have 16 volunteers from the Fermilab Engineering community that formed an ad-hoc committee to organize the week's activities, and many more that helped in various ways throughout the week," said Vic

## From the Particle Physics Division

## The Higgs under siege

*Mike Lindgren, acting head of the Particle Physics Division, wrote this week's column.*

On my thesis experiment, UA1, which took data through the 1980s, a handful of carefully selected particle events clearly showed the discovery of the W and Z bosons, and won the experiment's spokesperson a Nobel Prize.



Mike Lindgren

Those days seem long gone.

Today, Tevatron discoveries come from carefully sifting through billions of collision events and applying complex statistical analysis tools to tease out the rare and elusive signatures of new physics processes. As we weed through tens of thousands of events that mimic the signal we are looking for, it becomes impossible to spot a discovery with the naked eye.

We now have about 70 times more data than was used to discover the top quark in Run 1, and at the end of Run 2, we should have well over 100 times as much data. This allows Tevatron scientists to make measurements with unprecedented accuracy of particle properties such as the masses of the top quark and W boson. CDF's and DZero's results for these quantities already exceed the precision thought possible when we planned Run 2.

Due to the tremendous experience the Tevatron teams have developed over the past decade, both experiments can make very solid predictions about their ability to collectively discover or exclude the Standard Model Higgs boson. We know that we could sooner or later be the first to catch a glimpse of this elusive particle—if we gathered enough data. It seems like the siege warfare of medieval days, when the breaching of the defensive ramparts could be predicted with great certainty—as long as there were willing troops to keep up the siege.

Fortunately, we have young and eager

 Chance of snow  
25°/10°

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

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

Wednesday, Feb. 24  
- Breakfast: English muffin sandwich  
- Portabello harvest grain  
- Santa Fe chicken quesadilla  
- Hoisin chicken  
- Parmesan fish  
- Cuban panini  
- Assorted sliced pizza  
- Pesto shrimp linguini w/leeks & tomatoes

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Wednesday, Feb. 24  
Lunch  
- Wasabi- and panko-cruste pork loin w/ gingered soy sauce  
- Jasmine rice  
- Pea pods and carrots  
- Cold lime soufflé

Thursday, Feb. 25  
Dinner  
- Closed

[Chez Leon Menu](#)

Call x3524 to make your reservation.

[Archives](#)

[Fermilab Today](#)

[Result of the Week](#)

[Safety Tip of the Week](#)

[CMS Result of the Month](#)

[User University Profiles](#)

[ILC NewsLine](#)

Kuchler, chair of the organizing committee and chairman of the Engineering Policy Committee.

Watch slides from the talks [here](#).

-- Tona Kunz

[Photo of the Day](#)

## Fermilab Open House provides family fun for all



Children learn how to make telescopes to take home during the Fermilab Open House on Sunday, Feb. 21.



A volunteer hand-cranked walnuts through accelerator rings and onto a collision path to simulate how protons and antiprotons collide in the Tevatron at Fermilab's Family Open House on Sunday, Feb. 21. Hungry onlookers got to eat the "particle" sprays emitted by the broken walnuts.



Visitors to Fermilab's Open House on Sunday, Feb. 21, got a tour of the superconducting magnet factory.

[Special Announcement](#)

scientists coming to the Tevatron to reinforce our efforts and carry on data analysis and operations in large numbers. But the CMS and ATLAS experiments will now start a siege of the Higgs boson as well. Thanks in part to the contributions from and experience of former Tevatron troops, the CMS and ATLAS experiments are much further advanced than the Tevatron experiments were nine years ago, at the beginning of Run 2. Still, finding the Higgs will take time at the LHC as well.

The next few years will be tremendously exciting. Who is going to be the first to march through the doors of the besieged Higgs castle?

[Safety Update](#)

## ES&H weekly report, Feb. 23

This week's safety report, compiled by the Fermilab ES&H section, includes one first-aid injury. A worker received first-aid treatment after getting a metal sliver in the palm of his hand. Find the full report [here](#).

[Safety report archive](#)

[Announcements](#)

## Latest Announcements

[Benefits Office Ask HR Session - Friday, Feb. 26](#)

[Fidelity representative at Fermilab Friday, Feb. 26](#)

[DreamWeaver CS3: Intro offered March 9 or March 16](#)

[Interpersonal Communication Skills - March 16](#)

[Facilitating Meetings That Work course - March 17](#)

[Word 2007 Advanced class - March 16](#)

[Influence and Motivation: The Empowering Leader course - March 24](#)

[PowerPoint 2007 Advanced course March 25](#)

[Excel Programming with VBA class offered March 30 and April 1](#)

## 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)

Visit the Fermilab

[home page](#)

[Unsubscribe](#) from *Fermilab*

*Today*

## Take the ICFA detector and instrumentation survey

The Instrumentation Panel of the International Committee for Future Accelerators, ICFA, would like members of the physics community – from undergraduates to retirees – to take 10-15 minutes to complete a [survey](#) about the opportunities they have had to acquire practical experience and in-depth understanding of detectors and instrumentation.

The panel is considering organizing a school to teach young researchers information and skills they might not have the chance to learn while participating in large experimental collaborations. They will use the results of the survey as a guide for how to proceed with plans for the new school. Please complete the survey by March 8.

### In the News

## Did design flaws doom the LHC?

From **Nature News**, Feb. 23, 2010  
Subscription required

*Catastrophic failure that caused accelerator shutdown was not a freak accident, says project physicist.*

Running more than a year behind schedule and at half its intended energy, the world's most powerful particle accelerator is slated to begin its first full scientific run this week. Along with relief, the occasion is bringing some soul-searching. One senior scientist who helped to build the Large Hadron Collider (LHC) at CERN, Europe's particle-physics laboratory near Geneva, Switzerland, is claiming that the cause of the delay — a major accident in 2008 — could have been avoided.

"Any technical fault is a human fault," says Lucio Rossi, a physicist who oversaw the production of the accelerator's superconducting magnets. In a paper published on 22 February (L. Rossi Supercond. Sci. Technol. 23, 034001; 2010), he concludes that the catastrophic failure of a splice between two magnets was not a freak accident but the result of poor design and lack of quality assurance and diagnostics. The project, he says, will be coping with the consequences for many months to come.

[Read more](#)

[Muscle Toning class begins March 2](#)

[Employee discount at Batavia Rosati's](#)

[Harlem Globetrotters special ticket price - April 15](#)

[Introduction to Argentine Tango series of classes - FREE](#)

[Qi Gong, Mindfulness and Tai Chi Easy for Stress Reduction](#)

[Ask HR Sessions to be held at the Computing Division and Wilson Hall - Feb. 23-25](#)

[International Folk Dancing, Thursday evenings at Kuhn Barn](#)

[Fermi Martial Arts classes](#)

[Immigration Law Information session - March 1](#)

[Conflict Management and Negotiation Skills offered March 3 and 10](#)

[Hiring Summer Students for 2010](#)

[Adobe Acrobat Professional 9.0 Level 1 class offered March 4](#)

[March 5 deadline for The University of Chicago Tuition Remission program - March 5](#)

[English country dancing - March 7](#)

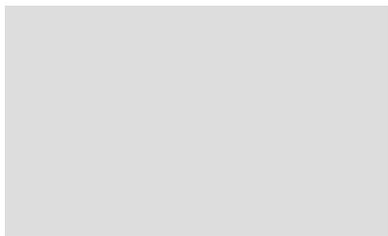
[On-site Housing for Summer 2010 - March 8 Deadline](#)

[Adaptive Leadership: Coaching for Individual Differences class - March 9](#)

[Art Gallery talk - Virginia Broersma - March 10](#)

[Excel Power User / Macros class - March 11](#)

[Influence and Motivation: The Empowering Leader course - March 24](#)



[FRA Scholarship 2010](#)

[Additional activities](#)

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[Submit an announcement](#)