

## Calendar

[Have a safe day!](#)

Wednesday, May 6

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4 p.m.

[Fermilab Colloquium](#) - One

West

Speaker: Paul Ginsparg,

Cornell University

Title: Open Access: From Myth

to Paradox

Thursday, May 7

THERE WILL BE NO

PHYSICS AND DETECTOR

SEMINAR THIS WEEK

2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: Fernando Cordero,

University of California, Los

Angeles

Title: W+3 Jet Production at

Hadron Colliders: NLO QCD

Corrections with BlackHat

+SHERPA

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO

ACCELERATOR PHYSICS

AND TECHNOLOGY

SEMINAR TODAY

4 p.m.

[Extreme Beam](#) - Physics at the

Intensity Frontier Lecture

Series - One West

Speaker: Chris Walter, Duke

University

Title: Neutrino Detectors:

Current Techniques, Future

Challenges

[Click here](#) for NALCAL,

a weekly calendar with

links to additional

information.

## Weather

## Feature

## June 3-4 Users' Meeting looks at new physics, future



[Participants enjoy a break between sessions at the 2008 Users' Meeting.](#)

For two days this June, hundreds of people will gather to celebrate the laboratory's accomplishments and focus on its future.

"Last year was doom and gloom. We were still reeling from furloughs, and we had a lot of speakers from our funding agencies address our uncertain future," said Lee Sawyer, Users' Meeting chair, DZero collaborator and physics professor at Louisiana Tech University. "This time, we'll focus on the great results we've achieved and the laboratory's planned and proposed future projects."

The 2009 annual Users' Meeting will take place at Fermilab on Wednesday, June 3, and Thursday, June 4. Registration is free. All users and employees are invited to attend. The meeting will feature talks about new physics results from the laboratory's experimental program, the laboratory's future initiatives and presentations from leaders of the scientific policy community. Other highlights include talks from outstanding young physicists and presentation of the 2008 Tollestrup Prize and the 2008 URA Thesis Award.

In conjunction with the meeting on Wednesday, June 3, the Fermilab Arts and Lecture series will host a lecture on the benefits and applications of accelerator technology by Tom Katsouleas, an accelerator physicist and the dean of engineering at Duke University.

Following the Users' Meeting on Friday, June 5, Fermilab and the UEC will hold an outreach

## From the Technical Division

## Reinvesting in advanced technology research

*Giorgio Apollinari, head of the Technical Division, wrote this week's column.*

On March 23, Secretary Steven Chu announced that Fermilab will receive \$34.9 million in funding under the American Recovery and Reinvestment Act. Fermilab will use \$25 million for construction and improvement projects that will generate



Giorgio Apollinari

engineering and construction jobs in Illinois businesses and pay for materials and services purchased from U.S. companies. \$9.9 million will go toward purchasing key high-tech components from U.S. companies for the NOvA neutrino project, allowing high-tech firms to retain and hire workers.

One of the construction projects that will be supported by this ARRA money is the expansion of Industrial Building 3 in Fermilab's Technical Center area. Six years ago, the Technical Division drew up plans to create much-needed industrial and laboratory space. Now the ARRA investment will make this plan a reality. The addition, named IB3A, will provide us with a modern facility for the development of superconducting magnets that can produce stronger magnetic fields and operate at higher temperatures than current technology permits.

Large-scale, industrial-quality superconducting magnets have many applications in particle physics, in medicine and potentially in power generation and power storage.

At present, large superconducting magnets operate at 2 to 4 Kelvin and can create magnetic fields of up to approximately 10 Tesla in accelerator applications. New types of magnets made of niobium-tin (Nb<sub>3</sub>Sn) or high-temperature superconducting materials could operate at much higher temperature and produce stronger magnetic fields. For instance, HTS materials could be capable of producing magnetic fields in excess of 20-30



Thunderstorms likely  
72°/52°

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

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

Wednesday, May 6  
- Cajun style lentil soup  
- Cajun chicken ranch  
- Tilapa w/jalapeno lime sauce  
- Chicken parmesan  
- Smoked turkey panini pesto mayo  
- Assorted sliced pizza  
- Chicken Alfredo fettucine

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Wednesday, May 6  
Lunch  
- Smoky bacon and blue cheese  
- Chicken salad pitas  
- Apple walnut salad  
- Lemon blueberry pound cake

Thursday, May 7  
Dinner  
- Goat cheese salad w/ hazelnut dressing  
- Spiced stuffed pork roast w/ apple & thyme cream sauce  
- Mashed potatoes  
- Carrots & broccoli  
- Toffee pecan nutmeg cake

[Chez Leon menu](#)

Call x3524 to make your reservation.

[Archives](#)

workshop including a poster session, panel discussion and colloquium. Theoretical astrophysicist Michael Turner, from the University of Chicago, will give the colloquium about outreach.

A poster session organized by the Graduate Student Association will take place on June 3 in the atrium of Wilson Hall. Poster abstracts should be sent to [UM2009POSTERS@fnal.gov](mailto:UM2009POSTERS@fnal.gov) by May 15.

The Users' Meeting [Web site](#) provides a tentative agenda and other information about the 2009 meeting.

### Special Announcement

## Extreme Beam lecture Thursday, 4 p.m. in One West



The next talk in the Extreme Beam lecture series will focus on neutrinos.

The fifth lecture of the Extreme Beam lecture series will take place at 4 p.m. Thursday in One West. Chris Walter, Department of Physics at Duke University, will give a talk titled Neutrino Detectors: Current Techniques, Future Challenges.

The lecture series, which will feature talks at Fermilab throughout 2009, will give in-depth information about the science and accelerator and detector technologies that will create a world-leading physics program at the Intensity Frontier.

Visit the [Extreme Beam Web site](#) for more information.

### Photos of the Day

Tesla. Such strong fields, for example, would be excellent for focusing the beams of a powerful muon collider or provide the dipoles of a compact multi-TeV hadron machine.

Quantifying precisely the full return on investment for research on advanced technologies has always been a tough task for economists. Who would have guessed that laser technology, discovered in the early '60s, is now used for CD players, optical communication and laser surgery? While the construction of IB3A will create jobs in the local economy this year, the engineering solutions and techniques developed in the construction of superconducting magnets have the potential for a much larger economic payoff many years from now.

### In Brief

## Fun with neutrinos

At the NOvA groundbreaking in Ash River, Minn, Congressman Bill Foster, a former Fermilab physicist, used the occasion to have some fun with neutrinos. [Here](#) is the text of his speech, given on May 1.

### Special Announcement

## H1N1 influenza Q&A now available

Since the H1N1 influenza's spread and the virus's symptoms aren't as severe as originally expected, the Centers for Disease Control and Prevention plans to begin treating the H1N1 influenza like seasonal influenza. However, employees and users can look for information about H1N1 influenza on Fermilab's [Influenza home page](#) or on the [Influenza Q&A page](#).

Employees and users can also pose questions via the [flu questions form](#).

### Safety Update

[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)Visit the Fermilab [home page](#)**A look at 40 years of Arbor Day celebrations**

In Tuesday's *Fermilab Today*, the article on the history of Earth and Arbor Day celebrations mentioned that the event began in 1994. Arbor Day tree planting celebrations have been taking place since they were begun by founding Director Robert Wilson in April of 1969. The article should have stated that the event began in the current area in 1994.



Fermilab staff and volunteers planted about 85 trees and shrubs in honor of Earth Day and Arbor Day on Tuesday, May 5, 2009.

**In the News****ES&H weekly report, May 5**

This week's safety report, compiled by the Fermilab ES&H section, lists two injuries reported to the Medical Department last week. An employee's hand slipped while loosening a bolt on a motor, injuring the employee's thumb. Only first aid was required. The other incident was due to a repetitive strain injury and is under investigation. Find the full report [here](#).

[Safety report archive](#)**Announcements****Latest Announcements**[Barn Dance May 10](#)[Excel 2007: New Features class May 7](#)[National Day of Prayer observance May 7](#)[Best of Dance Chicago - Fermilab Arts Series - May 9](#)[Vanpool/Transit lunch and learn - May 13](#)[Argentine Tango classes through May 13](#)[Rapid Hardware Prototyping and Industrial Control Application development seminar May 13](#)[Co-ed softball season begins May 13](#)[French, Greek, and other ethnic dances in John Parrish's workshop, May 14](#)[Toastmasters demonstration meeting - May 14](#)["Angels & Demons" Lecture Night: The Science Revealed - May 21](#)[Deadline for The University of Chicago Tuition Remission Program - May 22](#)[NALWO - Brown Bag Lunch - Chinese Pottery - May 26](#)[Are you Fit to a T? May 27](#)

## Science, spirituality, and some mismatched socks

From *Wall Street Journal*, May 5, 2009

*Researchers turn up evidence of 'spooky' quantum behavior and put it to work in encryption and philosophy*

One of quantum physics' crazier notions is that two particles seem to communicate with each other instantly, even when they're billions of miles apart. Albert Einstein, arguing that nothing travels faster than light, dismissed this as impossible "spooky action at a distance."

The great man may have been wrong. A series of recent mind-bending laboratory experiments has given scientists an unprecedented peek behind the quantum veil, confirming that this realm is as mysterious as imagined.

Quantum physics is the study of the very small -- atoms, photons and other particles. Unlike the cause-and-effect of our everyday physical world, subatomic particles defy common sense and behave in wacky ways. That includes the fact that a photon, which is a particle of light, exists in a haze of multiple behaviors. They spin in many ways, such as "up" or "down," at the same time. Even trickier, it's only when you take a peek -- by measuring it -- that the photon fixes into a particular state of spin.

[Read more](#)

[Nanotechnology Lecture: Crafting of Self-Assembling Materials for Medicine & Energy - Fermilab Arts Series](#)

[Science Adventures for children](#)

[Discounted Rates at Grand Geneva Resort, Lake Geneva, WI](#)

[Summer co-ed volleyball league begins June 1](#)

[Registration for Users' Meeting is open](#)

[Conflict Management and Negotiation Skills class - June 3 and 10](#)

[Discount tickets to "1964"...Beatles tribute - June 6](#)

[Susan Werner - singer/songwriter performs on Arts Series](#)

[SciTech summer camps](#)

[Recreation Department announces Club & League Fair drawing winners](#)

[Additional Activities](#)

[Submit an announcement](#)