

## Calendar

### [Have a safe day!](#)

Thursday, Oct. 28  
10:30 a.m.

#### [Research Techniques Seminar](#) -

Curia II

Speaker: Andrey N. Vasil'ev,

Lomonosov Moscow State University

Title: Scintillators for New HEP

Calorimeters: What Properties are Not Well Understood?

2:30 p.m.

#### [Theoretical Physics Seminar](#) (NOTE

LOCATION) - One West

Speaker: Ciaran Williams, Fermilab

Title: Hadronic Production of a Higgs

Boson with Two Jets at NLO

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd  
Flr X-Over

4 p.m.

#### [Accelerator Physics and Technology](#)

[Seminar](#) - One West

Speaker: Lawrence Deacon,

University of London, Royal Holloway

Title: Muon Cleaning in the CLIC

Beam Delivery System

Friday, Oct. 22

9:40 a.m.

#### [Special Fermilab Colloquium](#) (NOTE

DATE, TIME, LOCATION) -

Auditorium

Speaker: Steve Meyers, CERN

Title: Status Report on the Large

Hadron Collider (in conjunction with

the [US LHC Users Organization](#)

[Annual Meeting](#))

3:30 p.m.

DIRECTOR'S COFFEE BREAK 2nd

Flr X-Over

4 p.m.

#### [Joint Experimental-Theoretical](#)

[Physics Seminar](#) (NOTE LOCATION)

- Auditorium Speaker: W. F.

Brinkman, DOE Office of Science

Title: Update from the Office of

Science (in conjunction with the [US](#)

[LHC Users Organization Annual](#)

[Meeting](#))

Click here for [NALCAL](#),

## Feature

### Volunteers battle prairie invaders



Volunteers collect seeds at the Prairie Harvest on Oct. 2.

Thirty-seven years after Bob Betz began prairie restoration at Fermilab, the tallgrass area has grown to more than 1000 acres. Yet the work is never complete: Both Roads and Grounds and the nonprofit Fermilab Natural Areas volunteer group still battle exotic species that creep in and threaten to choke the native plants.

"Invasive species are our number one enemy," said FNA president Rod Walton.

Healthy plant communities usually can resist invasive species, but clearing land for buildings and accelerators creates a perfect environment for tough plants that can grow in any condition – whether they should be here or not.

Because of volunteers' efforts, FNA has been able to assist Roads and Grounds in curbing these non-native plants, both by attacking them directly and by increasing the biodiversity of the area to restore the natural resistance of the prairie, forests and wetlands.

To restore natural diversity, Fermilab and FNA host two Fall Volunteer Prairie Seed Harvests, where volunteers from the community and from Fermilab gather seeds from more than 40 species of prairie grass. These are replanted around the site and traded for other species with surrounding restoration areas such as Morton Arboretum.

The FNA leaders find that this project is good for both plant and human communities.

"By getting involved, the public gets a direct experience of healing the ecosystem," said consulting restoration ecologist Ryan Campbell. "The idea is not only to expose the public to what a tallgrass prairie is, but to show them how open Fermilab is."

## Result of the Week

### A better way to sharpen a knife



It is only with a precise attention to the basic details that one can make a subtle discovery (or a fancy cake!)

My daughter is a student pastry chef. When she started her class work, she had visions of making grand concoctions on the first day. Much to her surprise, the first day was spent learning the proper way to sharpen a knife. There would be no fancy pastries without first mastering the basics.

Many of the articles you read here describe exciting physics topics; some of them are about potentially ground-breaking discoveries, for example the Higgs boson or supersymmetry. However, for those searches to be successful, we must understand an enormous number of tiny details. Today's article describes the result of a study of one such detail.

As the quarks in the beam particles collide, they radiate gluons. This kicks the quarks to the side. A precise knowledge of this process is very important. DZero researchers employed a common technique and used events in which Z bosons are made to study this phenomenon. Because Z bosons are not affected by the strong nuclear force, they experience minimal interactions after they are made and a measurement of their trajectory is sensitive to the radiation researchers wanted to study.

Since all detectors distort the things they are measuring, the trick is to understand which things are measured most accurately. This analysis used a novel technique. Rather than trying to measure the energy of the decay products of the Z boson, researchers looked only at the particles' direction. Directions are much more accurately determined than other things, such as energy. To return to our pastry analogy, we found a better way to sharpen a knife, which will make all subsequent projects much easier.

a weekly calendar with links to additional information.

[Upcoming conferences](#)

[Campaigns](#)

[Take Five](#)

[Tune IT Up](#)

[Weather](#)



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

[Current Security Status](#)

[Secou Level 3](#)

[Wilson Hall Cafe](#)

Thursday, Oct. 21

- Breakfast: apple sticks
- Tomato florentine
- BBQ pork sandwich
- \*Kielbasa & sauerkraut
- Chicken marsala
- Smoked turkey melt
- Assorted sliced pizza
- SW chicken salad w/ roasted corn salsa

*\*Carb restricted alternative*

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Thursday, Oct. 21

- Dinner
- Closed

[Chez Leon Menu](#)

Call x3524 to make your reservation.

[Archives](#)

FNA also hosts monthly workdays for Fermilab employee volunteers to clear invasive species. Their efforts, along with those of Roads and Grounds, have been quite successful. Walton said that pulling and pruning has nearly eradicated the aquatic purple loosestrife, a common invasive in wetlands. Other plants, such as garlic mustard and buckthorn, are not so easily defeated.

To find out more about FNA's efforts and sign up for a workday, visit [here](#).

The next [Prairie Seed Harvest](#) will take place from on Oct. 30 from 10 a.m. to 2 p.m.

-Sara Reardon



"Prairie Rangers" from the Lederman Science Center's program collect seeds at the Prairie Harvest on Oct. 2. The next Prairie Seed Harvest will take place from on Oct. 30 from 10 a.m. to 2 p.m.

Photo of the Day

### Pumpkin carving at Users' Center



Fermilab families gathered at the Users' Center on Tuesday evening for the annual tradition of pumpkin carving, organized by Chivas Makaropolos, visible at the right in the jack-o-lantern costume.

In the News

[This analysis](#) showed that some popular calculation techniques had imperfectly modeled this important gluon radiation. The consequences of this study will ripple throughout the field and strengthen all measurements.

-- Don Lincoln



Mika Vesterinen

Terry Wyatt

These physicists from the University of Manchester (UK) performed this careful analysis.



This group of data acquisition shifters have undertaken a major commitment to operate the DZero detector and take 42 shifts during the course of four months. They are responsible for ensuring that the data is efficiently collected and moved to tape. The physicists shown above are just a fraction of the people involved.

Photo of the Day

### 30th anniversary celebration of US-Japan HEP agreement



Fermilab Director Pier Oddone took part in a [celebration](#) last week of the 30th Anniversary Symposium of the US-Japan Agreement on High Energy Physics.

Accelerator Update

[Fermilab Today](#)[Director's Corner](#)[Result of the Week](#)[Safety Tip of the Week](#)[CMS Result of the Month](#)[User University Profiles](#)[ILC NewsLine](#)[Info](#)[Fermilab Today](#)

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## Momentum builds for Tevatron extension

From *Nature News*, Oct. 26, 2010

*Panel breathes extra life into US hunt for Higgs boson.*

Last January, when the leaders of experiments at the Tevatron, the proton-antiproton collider at [Fermilab](#) in Batavia, Illinois, got together to pitch the idea of a three-year extension of the machine's operations to lab management, they got a decidedly frosty reception. "It was not very good," says Robert Roser, co-spokesman of the Collider Detector at Fermilab, one of the collider's two main experiments.

Ten months later, a combination of PowerPoint presentations, letter writing by supporters and favourable advisory board recommendations — the most recent being a meeting of the [High Energy Physics Advisory Panel](#) (HEPAP) that took place today in Rockville, Maryland — have created a serious possibility that Fermilab's director Pier Oddone and funders at the US Department of Energy (DOE) will themselves be pitching the value of a Tevatron extension to the Office of Management and Budget (OMB), which will finalize the Obama administration's fiscal year 2011 presidential budget request to Congress. "We're going to take the findings and recommendations of HEPAP into account in making decisions for the future," says Dennis Kovar, associate director of science for high energy physics at DOE headquarters in Washington DC.

Without any change, the Tevatron would close in 2011, leaving the way clear for the [Large Hadron Collider](#) (LHC) at CERN near Geneva, Switzerland, to stake the first claim on the discovery of the Higgs boson, the elusive particle thought to endow other particles with mass in the standard model of particle physics. Since 2008, in the belief that the LHC would be best placed to find the Higgs, DOE has invested heavily in an alternative suite of experiments intended to probe physics beyond the standard model, particularly neutrinos.

But in January, CERN released a plan revealing that it would have to close the LHC for 15 months starting in 2012 in order to ramp up to its target energy of 14 tera electron Volts (TeV). The LHC had been expected to be fully operational in 2012, taking data at a rate that would dwarf the amount taken by the Tevatron. The delay creates a possibility that the Tevatron could stake the first claim on the Higgs. "That told us we were not going to be blown out of the water," says Roser.

[Read more](#)

Oct 25-27

- Four stores provided ~39.25 hours of luminosity
- TeV sector B4 wet engine flywheel repaired
- LRF1 surge resistor replaced
- Poor TeV proton load lifetime fixed
- Pbar off today, 10/27/10, for vacuum work

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

### Announcements

#### Latest Announcements

[Director of the Office of Science to speak at Fermilab, Oct. 29](#)

[Annual enrollment](#)

[Martial Arts classes](#)

[Indian Creek Road to closed today](#)

[Toastmasters - Nov. 4](#)

[Bone density screenings - Nov. 2](#)

[Free CERN LHC book](#)

[International Folk Dancing Halloween party - today](#)

[English country dancing for Halloween, Oct. 31, with live music at Kuhn Barn](#)

[Nov. 22 deadline for The University of Chicago Tuition Remission Program](#)

[Employee Art Show: April 2011](#)

[Argentine Tango through Nov. 3](#)

[Accelerate to a Healthy Lifestyle program](#)

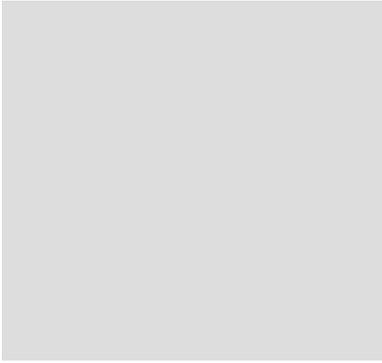
[Fright Fest discount tickets at Six Flags](#)

[Chicago Blackhawks discount tickets](#)

[Needles and Threads introductory meeting schedule](#)

[Facilitating Meetings That Work class - Nov. 4](#)

[Management and Negotiation Skills class - Nov. 9 & 16](#)



[Word 2007: Intro class - Nov. 9](#)

[Chicago Blackhawks November discount tickets](#)

[Yoga begins Nov. 2](#)

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[Submit an announcement](#)