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## Calendar

[Have a safe day!](#)

Tuesday, Nov. 16  
3:30 p.m.  
DIRECTOR'S COFFEE  
BREAK - 2nd Flr X-Over  
THERE WILL BE NO  
ACCELERATOR PHYSICS  
AND TECHNOLOGY  
SEMINAR TODAY

Wednesday, Nov. 17  
3:30 p.m.  
DIRECTOR'S COFFEE  
BREAK - 2nd Flr X-Over  
4 p.m.

[Fermilab Colloquium](#) - One  
West

Speaker: Anders Nilsson,  
SLAC National Accelerator  
Laboratory

Title: X-Ray Shines Light on  
the Water Mystery

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

[Upcoming conferences](#)

## Campaigns

[Take Five](#)

[Tune IT Up](#)

## Weather



Mostly Sunny  
52°/34°

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

Current Security  
Status

[Secon Level 3](#)

Wilson Hall Cafe

## Feature

## Fermilab historian gets a peek at the past through pictures



This beautiful woodcut is one of many images from an 1874 atlas of DuPage County recently loaned to Fermilab's History archives. Former neighbors of Fermilab brought the black bound atlas to the archives to help the Site History Committee piece together the patchwork of families who used to own the Fermilab grounds.

"We've learned from this atlas that there are more families who transferred their land to the State of Illinois; we only had records of the ones who lost buildings, including homes," said Fermilab's historian-archivist Adrienne Kolb. "It's intriguing; it makes me want to zoom in on the site map to learn more about each parcel of farmland like the experimenters zoom in on particle collisions."

More images from the atlas are available [here](#).

-- Sara Reardon

From *symmetrybreaking*

## LHC basics: What we can learn from lead-ion collisions

## Director's Corner

## Voluntary Separation Offer



Fermilab Director Pier Oddone

Last week I announced a [Voluntary Separation Offer](#). Whenever such an action is announced, it has the potential to affect morale and be discouraging. After all, we do have a full plate and we are making it harder to carry out our program by reducing the number of employees. It is natural to worry about what comes next. However, in reality, we should worry less about the future than if we had not taken this action now.

By reducing the number of staff through a voluntary separation, we place the laboratory in a more resilient configuration. This is especially important when we are in a continuing resolution and we face uncertain times ahead. By taking this action now, we hope to avoid more difficult actions later in the year. The laboratory is doing extremely well, delivering on our programs. We are developing a great set of experiments for the future at the most exciting time in particle physics in more than a decade. We continue to make the case that the nation needs to stay at the forefront of discovery, and Fermilab is an important part of staying at that frontier. Of course, in our system of budgeting there are no guarantees, and the Congress could surprise us.

Employees who are not familiar with a voluntary separation offer or have not participated in the deliberations that led to the offer may be surprised and concerned. The need to keep the deliberations away

Tuesday, Nov. 16

- Breakfast: Croissant sandwich
- Golden broccoli soup
- Fish & chips
- Coconut crusted tilapia
- Burgundy beef tips
- La grande sandwich
- Assorted sliced pizza
- Chicken fajitas

[Wilson Hall Cafe Menu](#)

### Chez Leon

Wednesday, Nov. 17

Lunch

- Chicken breast stuffed w/ sundried tomatoes & goat cheese w/ shallot thyme sauce
- Orzo
- Sauteed spinach
- Italian cream cake

Thursday, Nov. 18

Dinner

- Mushroom duxelle
- Duck breast w/ blackberry sauce
- Brussels sprouts
- Panna cotta w/ cranberry wine sauce

[Chez Leon Menu](#)

Call x3524 to make your reservation.

### Archives

[Fermilab Today](#)

[Director's Corner](#)

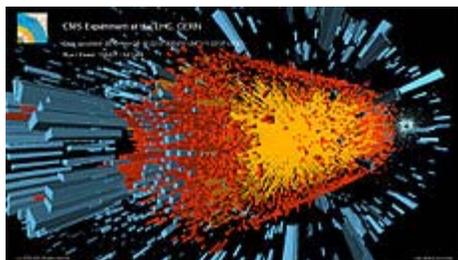
[Result of the Week](#)

[Safety Tip of the Week](#)

[CMS Result of the Month](#)

[User University Profiles](#)

[ILC NewsLine](#)



A lead-ion collision as recorded by the CMS detector at the LHC. Credit: CERN

The LHC has been smashing lead ions since Sunday, and physicists from the ALICE, ATLAS and CMS experiments are working around the clock to analyze the aftermath of these heavy-ion collisions at record energies and temperatures.\* Last week we walked you through the process of creating, accelerating and colliding lead ions. Now we'll talk about the big question: Why spend one month each year colliding heavy ions in the LHC?

The building blocks and mini "big bangs"

To understand why physicists around the world study heavy-ion collisions, we need to review some basic particle physics and discuss what happens when two nuclei collide at ultra-high energies.

First, the basics. Everything you see around you is composed of atoms, which are themselves composed of protons and neutrons bound together in an atomic nucleus, surrounded by a cloud of electrons. Electrons are one of the basic building blocks of matter, but protons and neutrons are not—they are in turn composed of elementary particles called quarks.

The strong force binds quarks inside composite particles, such as protons, via other elementary particles called gluons. Thus lead nuclei, which are made up of protons and neutrons, are really composed of many quarks and gluons.

When two lead nuclei slam into each other at high enough energies, they form a fireball of hot, dense matter. The temperatures created in the fireball are so great that they 'melt' the protons and neutrons. The result is a state of matter called the quark gluon plasma, in which quarks and gluons roam freely. The QGP exists for only an instant before the fireball expands and cools to the point where quarks and gluons once again form composite particles.

[Read more](#)

from a public discussion prior to approval by the DOE and notification of Congress meant that the discussions leading to the offer were limited to senior laboratory management and division and section leaders. To explain the program, we now have an extensive [website](#) with Q&A about the offer; more information is in the individual packages sent to those receiving the offer. Moreover, you should feel free to send a question to [wdrs\\_questions@fnal.gov](mailto:wdrs_questions@fnal.gov) or ask questions of your group and division leaders whether you have received the offer or not.

We will accept up to 90 volunteers, but a lower number, closer to half, is expected at this time. Taking this step will help the laboratory stay financially healthy and meet its goals

### Special Announcement

#### Help track greenhouse gas emissions - take a survey

Fermilab wants to learn more about employees' commuting practices. By taking a [commuting and travel survey](#), you can help the ES&H Section better estimate the greenhouse gas emissions from employees commuting to work or travelling on business.

Learn more in the [Nov. 8 issue](#) of *Fermilab Today*.

### Accelerator Update

Nov. 12-15

- Three stores provided ~26.25 hours of luminosity
- CDF accesses to repair broken detector wire
- Most of the complex also accessed to repair equipment
- NuMI stuck LCW valve repaired
- TeV quenched during turn-on

\*The integrated luminosity for the period of 11/8/10 to 11/15/10 was 49.02 inverse picobarns. NuMI reported receiving  $7.18\text{E}^{18}$  protons on target during this same period.

Info	In the News	
<p><i>Fermilab Today</i> is online at: <a href="http://www.fnal.gov/today/">www.fnal.gov/today/</a></p> <p>Send comments and suggestions to: <a href="mailto:today@fnal.gov">today@fnal.gov</a></p> <p>Visit the Fermilab <a href="#">home page</a></p> <p><a href="#">Unsubscribe</a> from <i>Fermilab Today</i></p>	<h2>Navy's super-laser hunts for cosmic energy secret</h2> <p>From <i>Wired's Danger Room</i> blog, Nov. 15, 2010</p> <p>The Navy has lots of plans for the "Holy Grail" of energy weapons, from burning enemy missiles out of the sky to helping aim a ship's traditional guns. But the Navy has a more expansive use in mind for its Free Electron Laser: find the basic power source of the universe.</p> <p>Oliver K. Baker is a 51 year-old Yale particle physicist. Every few months, he leaves tweedy New Haven for the Jefferson Lab in Newport News, Virginia, where he powers up the Navy's Free Electron Laser, a laser the size of a schoolbus that uses supercharged electron streams to generate photons in one of a multitude of wavelengths. He fires the resultant beam of light into a tube containing a vacuum — all in the hope of finding trace elements of so-called "dark energy," the stuff God uses to heat His celestial home. (Well, maybe, kinda sorta.) Far off as Baker's research may be from hitting paydirt, the Office of Naval Research, which runs a \$163 million project to turn the laser into a death ray, writes the checks that make it possible.</p> <p>Dark energy is purely theoretical, for the time being: no one's actually discovered it. But physicists figure that since the universe is accelerating as it expands outward from its Big Bang origins, <i>something</i> must be powering that expansion. Finding the cosmic energy source is a proposition that intrigues the Navy, considering how epochal its discovery and harnessing would be for humanity.</p> <p><a href="#">Read more</a></p>	<p> <a href="#">Read the Current Accelerator Update</a>  <a href="#">Read the Early Bird Report</a>  <a href="#">View the Tevatron Luminosity Charts</a> </p> <h3>Announcements</h3> <div style="border: 1px solid #ccc; padding: 10px;"> <p>WDRS announcement</p> <p> <a href="#">Voluntary separation offer information</a> </p> </div> <p> <a href="#">School's Out day camp - Nov. 22-23</a> </p> <p> <a href="#">Help Fermilab track greenhouse gas emissions - take a survey</a> </p> <p> <a href="#">Fermilab Winter Volleyball League</a> </p> <p> <a href="#">Turkey date for Thanksgiving dinner</a> </p> <p> <a href="#">Free CERN LHC book</a> </p> <p> <a href="#">Tango at Fermilab through Dec. 1</a> </p> <p> <a href="#">Nov. 22 deadline for The University of Chicago Tuition Remission program</a> </p> <p> <a href="#">Pedestrian Safety Awareness for Families</a> </p> <p> <a href="#">Pedestrian Safety at Crosswalks</a> </p> <p> <a href="#">Book Fair - Nov. 17 &amp; 18</a> </p> <p> <a href="#">BULLYING: It's everyone's problem - Nov. 18</a> </p> <p> <a href="#">Toastmasters - Nov. 18</a> </p> <p> <a href="#">Accelerate to a Healthy Lifestyle program through Dec. 31</a> </p> <hr/> <p> <a href="#">Submit an announcement</a> </p>
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