

## Calendar

[Have a safe day!](#)

Friday, July 23

3:30 p.m.

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

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

Speaker: Rex Tayloe, Indiana  
University

Title: Neutrino-Nucleon  
Quasielastic Scattering in  
MiniBooNE

Monday, July 26

2:30 p.m.

[Particle Astrophysics Seminar](#)  
(NOTE LOCATION) - One  
West

Speaker: Bernard Carr, Queen  
Mary University of London  
Title: Primordial Black Holes as  
a Probe of Dark Matter, Dark  
Energy and Dark Dimensions  
3:30 p.m.

DIRECTOR'S COFFEE  
BREAK - 2nd Flr X-Over  
THERE WILL BE NO ALL  
EXPERIMENTERS' MEETING  
THIS WEEK

4 p.m.

[Special Joint Experimental-  
Theoretical Physics Seminar](#)

(NOTE DATE) - One West  
Speaker: Wade Fisher,  
Michigan State University  
Title: Results of the Tevatron Higgs  
Combination

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

[Upcoming conferences](#)

[Campaigns](#)

## Recreation Feature of the Month

### Classes, events and discounts for August

**RECREATION CLASSES**

**Kyuki-Do**  
Mondays and Wednesdays August 9 - September 15  
Recreation Facility, 3:30 - 4:30 p.m.  
\$10/person

**Bod Squad Muscle Toning**  
Tuesdays and Thursdays September 2 - October 28  
Recreation Facility, 5:30 - 6:30 p.m.  
\$7/person

Register in the Recreation Office WH15W or call x2548

**WELLNESS**

**Lunch & Learn: Power of Preventive Health Care**  
Continuing on health techniques to help prevent, delay or modify certain conditions and diseases including age-appropriate screenings and vaccinations, and topics such as nutrition, stress, heart health and smoking cessation. Hosted by Blue Cross/Blue Shield.

Wednesday, August 18  
Room: Hall, Curia II, Room - 1100 p.m.  
RSVP to Jeanne Koester by 8/11

**Qi Gong, Mindfulness & Tai Chi Easy**  
Friday, Ramse Auditorium, Noon-12:45pm

**EMPLOYEE CLUBS AND LEAGUE FAIR**

Did you know that Fermilab has over 25 employee clubs and athletic leagues available for you to participate in? Come and see what we have to offer! Entertainment, Demonstrations, Flight Simulations! There's something for everyone!

Wednesday, August 11  
Room: Hall Atrium, 11:30 a.m. - 1:30 p.m.

**EMPLOYEE DISCOUNTS**

**Movie Tickets**  
AMC: Tuesdays \$7.00, \$9.50  
Cineplex: Tuesdays \$7.50

**Go Flyin' Great America**  
Discount tickets available online  
<http://www.greatamerica.com>

**Spring House Waterpark - Parkville**  
Online tickets at <http://www.springhousewaterpark.com>  
Adults and children 4ft and over \$29.99 (regularly \$39.99). Enter code: [www.fermilab.gov](http://www.fermilab.gov)

Fermilab ENERGY

Fitness classes  
starting soon:

- **Kyuki-Do: 5-6 p.m.**  
Mondays and  
Wednesdays from Aug. 9  
– Sept. 15 in the  
Recreation Facility. Cost:  
\$55 per person.

- **Bod Squad Muscle  
Toning: 5:30-6:30 p.m.**  
Tuesdays and Thursdays  
from Sept. 2-Oct. 28 in  
the Recreation Facility.  
Cost: \$77 per person.

Register in the  
Recreation Office,  
WH15W, or call x2548.

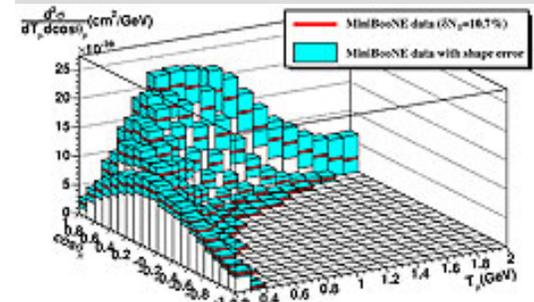
This month, the  
Benefits/Recreation Department  
will also sponsor the following wellness  
events:

- **Lunch & Learn: "Power of Preventive  
Health Care":** noon-1 p.m. on Wednesday,  
Aug. 18, in Curia II in Wilson Hall. Learn  
health care techniques to help prevent or  
modify certain conditions and diseases,  
including age-appropriate screenings and  
vaccinations and topics including: nutrition,  
fitness, heart health and smoking cessation.  
Hosted by Blue Cross/Blue Shield. RSVP to  
Jeanne Koester, x2548, by Aug. 11.
- **Qi Gong, Mindfulness & Tai Chi Easy** will  
take place from noon-12:45 p.m. on Fridays  
in Ramsey Auditorium.  
Free.

**Employee League and Club Fair:**  
11:30 a.m. – 1 p.m. on Wednesday,  
Aug. 11, in the Wilson Hall atrium  
Fermilab has more than 25 employee clubs  
and athletic leagues available for you to  
participate in. Come see what we have to  
offer. This entertaining event will feature  
demonstrations and flight simulations.

## Special Result of the Week

### MiniBooNE uses neutrinos to shed light on nuclear physics



[Double differential cross section for muon neutrino  
CCQE scattering on carbon as recently reported  
by MiniBooNE. This measurement is the first of its  
kind for this process.](#)

Most of the time, MiniBooNE studies the  
phenomenon of neutrino oscillations, how  
neutrinos change from one type into another  
over a distance. But recently, MiniBooNE took  
a more careful look at neutrino scattering, the  
way that this normally invisible particle shows  
itself by interacting with visible matter. Looking  
closer at how neutrinos interact can help  
physicists better understand this ghostly  
particle.

Measuring a cross section for neutrino  
interactions can be a difficult task. Neutrino  
cross sections are very small, and measuring  
them requires knowing precisely how many  
neutrinos are hitting a detector within a given  
period of time. Physicists typically don't know  
exactly how many neutrinos are produced in  
an accelerator beam. This uncertainty isn't a  
problem for neutrino oscillation searches  
because of what they are measuring. The  
procedures these oscillation experiments use,  
however, can sweep some interesting physics  
under the rug.

To take a closer look at neutrino scattering,  
MiniBooNE first worked to reduce this large  
neutrino production uncertainty, which is  
typically 30 percent or more, with the help of  
the HARP experiment at CERN. HARP  
replicated the MiniBooNE beam and  
measured the rate of pions produced on the  
MiniBooNE target, which in turn allowed  
scientists to predict neutrino production in the  
Fermilab Booster neutrino beam to within a 9  
percent error margin. This allows MiniBooNE  
physicists to directly measure the interaction

[Take Five](#)[Tune IT Up](#)[H1N1 Flu](#)

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

[Weather](#)

Chance of thunderstorms  
91°/73°

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

[Current Security Status](#)[Secur Level 3](#)[Wilson Hall Cafe](#)

Friday, June 25

- Breakfast: Chorizo burrito
- Old fashioned ham & bean soup
- Philly-style chicken
- Chicken pot pie
- Smart cuisine: Baked fish over rice
- Roasted veggie & provolone panini
- Assorted sliced pizza
- Baked potatoes

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Wednesday, July 28

- Lunch
- Beef kabobs
  - Rice pilaf
  - Blackberry parfait

[Chez Leon Menu](#)

Call x3524 to make your reservation.

[Archives](#)

## EMPLOYEE DISCOUNTS

- Movie tickets  
AMC Tickets: \$7-8  
Goodrich Tickets: \$7
- Six Flags Great America  
Discount tickets available [online](#)
- Raging Waves Waterpark - Yorkville  
Online tickets at <http://tickets.ragingwaves.com>.  
Cost for adults and children 48"and taller: \$20.99 (regularly \$26.99). Enter store name/promotion code: Fermilab

[In Brief](#)**Update on E-Verify efforts**

Since May 2010, the HR Services Department has worked to ensure that Fermilab complies with a [new requirement](#) in FRA's contract with the Department of Energy. Fermilab is now required to participate in E-Verify, an electronic system operated by the Department of Homeland Security that enables employers to verify identity and work authorization. Fermilab must enter data for more than 1,600 employees hired on or after Nov. 7, 1986, and before June 1, 2009.

As part of this task, HR Services representatives have been auditing all existing I-9 employment eligibility verification forms for employees and submitting relevant data to E-Verify. On July 16, HR Services employees made the 1,000th E-Verify submission, which means the laboratory has completed approximately 70 percent of the submissions.

In most cases, representatives did not need to contact employees. HR Services representatives used previously supplied I-9 forms and documents to facilitate data submission to the E-Verify system. In a very small percentage of cases, [representatives contacted employees](#) to complete a new I-9 form. This usually occurred because of changes to the employee's name, changes in document acceptability or because of the E-Verify system's limitations. The very small number of cases that required contact, however, created some confusion.

"Employees have called Fermilab HR to ask why they are being targeted," said Borys Jurkiw, HR Services Department manager. "They say that none of their coworkers received an e-mail about E-Verify, so they

cross sections for neutrino processes.

The new result, recently reported in [Physical Review D](#), is an absolute measurement of the double differential cross section, the number of events physicists see as a function of muon energy and angle for neutrino charged-current quasi-elastic (CCQE) scattering. This process occurs when a neutrino strikes a neutron in a carbon nucleus and creates a muon and proton.

[Read more](#)

[In the News](#)**New galaxy maps to help find dark energy proof?**

From *National Geographic News*, July 21, 2010

A newly developed technique could one day help astronomers use giant sound waves to test theories of [dark energy](#), the mysterious force thought to be causing the universe to fly apart faster over time.

Called intensity mapping, the technique looks for unique radio emissions of hydrogen gas in galaxies and galaxy clusters to map the large-scale structure of the universe. Hydrogen is the lightest and most abundant element in the universe, and it tends to cluster around galaxies because of their strong gravitational pull.

[Read more](#)

[Announcements](#)**Latest Announcements**

[English country dancing, Sunday, July 25](#)

[NIM and Physics Reports now completely online at Fermilab](#)

[Regal Movie Theater discount tickets available](#)

[Artist reception - Saturday, July 24, from 5-7 p.m.](#)

[Sons of the Never Wrong - July 24, 8 p.m](#)

[Time to complete accomplishment](#)

[Fermilab Today](#)[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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wonder why they did. The reason is that for almost all employees we had the required information on hand.”

Employees can check the [Question and Answer page](#) for information about the E-Verify process and I-9 audit. If you have additional questions or concerns about E-Verify, please e-mail [everify@fnal.gov](mailto:everify@fnal.gov).

“Thanks to the cooperation and understanding of our employees, we’re in a very good position to be in full compliance with our contractual obligations by the end of the summer,” Jurkiw said.

[reports](#)[Habitat Restoration at Fermilab](#)[Applications for URA Visiting Scholars Awards due Aug. 20](#)[Take 5 Challenge Quiz](#)[Last week's walking program drawing winner](#)[Argentine Tango through July 28](#)[Club & League Fair - Aug. 11](#)[Grounding and Shielding of Electronic Systems course - Aug. 12 and 13](#)[Free piano concert featuring Sandor Feher in Auditorium at noon - Aug. 12](#)[Claudia Schmidt - Singer/Songwriter - Fermilab Arts Series - Aug. 14](#)[Gizmo Guys in Fermilab Arts Series - Sept. 25](#)[Pre-K & Youth swim lesson session 4 deadline](#)[Submit an announcement](#)

Classifieds

Find new [classified ads](#) on *Fermilab Today*.