

## Calendar

Wednesday, March 11

3:30 p.m.

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

4 p.m.

[Fermilab Colloquium](#) - One

West

Speaker: R. Sekhar Chivukula,  
Michigan State University  
Title: The Symmetries of QCD

Thursday, March 12

THERE WILL BE NO  
PHYSICS AND DETECTOR  
SEMINAR THIS WEEK

2:30 m.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: Roni Harnik, Stanford  
University

Title: Astrophysical Probes of  
Unification

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.

## Weather



Sunny  
29°/13°

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

## Current Security Status

[Secon Level 3](#)

## Wilson Hall Cafe

## Special Result of the Week

### Single and loving it!



Left to right: Cecilia Gerber, of the University of Illinois at Chicago, presented the DZero result and Rainer Wallny, of UCLA, showed CDF's result

*Single physicist searching for single red, blue or green, top quark for fun and possible long term relationship. Must like high speeds and live life fast. I'll be waiting for you in the control room of a large Fermilab particle detector.*

Fourteen years ago this month, the DZero and CDF experiments jointly announced the discovery of top quarks. In those observations, top quarks were always produced [in pairs](#). A quark and antiquark from the proton and antiprotons in the beam annihilated into a gluon that then became a top quark and an antimatter top quark. By capturing just a couple of dozen collisions in which these quarks were made, scientists were able to definitively say top quarks existed.

Pairs of top quarks are relatively easy to see since they have a distinct signature, but it has long been assumed that it is also possible to create collisions producing a single top quark. As an [example](#), in these types of collisions, a quark and antimatter quark from the beams combine and create the weak-force carrying W boson. This W boson then decays into a top quark and a bottom antimatter quark. Because the W boson only has half the mass of a top quark, this kind of event could not occur without the principles of quantum mechanics. The W boson in these events briefly has about double the regular mass, allowing the reaction to proceed.

Physicists have been combing the data from

## Director's Corner

### Padova



[Pier Oddone](#) under the sculpture of the first female laureate from a public university, Elena Lucrezia Conaro Piscopia who graduated in 1678.

Yesterday I visited the University of Padova to discuss potential future collaborations with the leadership of the Istituto Nazionale di Fisica Nucleare (INFN). Professor Roberto Petronzio, President of INFN, and his colleagues were very welcoming. Fermilab has had a hugely valuable collaboration with Italian groups supported by INFN over many years. We both are interested now in extending our collaboration to future projects. An area where we have a commonality of interests and where we could develop an important collaboration is in the development of liquid argon time projection chambers for the study of neutrino interactions.

Italian groups under the direction of Carlo Rubbia have pioneered liquid argon TPCs and are ready to fill a 600-ton detector, ICARUS, deep underground in the Gran Sasso laboratory. Later this year they should be in a position to detect neutrinos from the CERN

## Wednesday, March 11

- Smart cuisine: Cajun style lentil soup
- Cajun chicken ranch
- Smart cuisine: Tilapia w/ jalapeno lime sauce
- Chicken parmesan
- Smoked turkey panini pesto mayo
- Assorted sliced pizza
- Chicken Alfredo fettucine

### [Wilson Hall Cafe Menu](#)

#### Chez Leon

## Wednesday, March 11 Lunch

- Chicken breast stuffed w/ sundried tomatoes & goat cheese with a shallot thyme sauce
- Orzo
- Carmel apple shortcake

## Thursday, March 12 Dinner

- Field greens w/ cranberries, blue cheese and walnuts
- Citrus glazed mahi mahi
- Cashew basmati rice
- Sautéed pea pod & water chestnuts
- Lemon meringue ice cream pie in toasted pecan crust

### [Chez Leon menu](#)

Call x3524 to make your reservation.

#### Archives

### [Fermilab Today](#)

### [Result of the Week](#)

### [Safety Tip of the Week](#)

### [ILC NewsLine](#)

#### Info

billions of collisions for years, looking for events in which single top quarks have been made. Even though the Tevatron produces about the same amount of top quark pairs as single tops, these events are trickier to isolate. The false positive rate is much higher. It's much harder to mistakenly find two top quarks than just one.

However DZero and CDF jointly presented yesterday to a packed house at Fermilab their newest results: a discovery of the single top quark. A celebration in the Fermilab User's Center followed the presentation. Yet another piece of the Standard Model puzzle has clicked neatly into place.

*Single and loving it ...*

-- Don Lincoln and Craig Group



The evidence for the single top quark production was shown at Fermilab at a special seminar to a standing-room only crowd.

#### In the News

## Congress Sends \$410 Billion Spending Bill to Obama for Signing

From *Bloomberg*, March 11, 2009

The U.S. Congress gave final approval to a \$410 billion bill that will boost domestic spending, loosen the trade embargo on Cuba and fund thousands of congressional pet projects known as earmarks.

The Senate, after a delay last week that highlighted Democrats' tenuous grip on the chamber, approved the so-called omnibus bill on a voice vote yesterday. Moments earlier, the bill cleared a key procedural vote, 62 to 35. The legislation, which the House passed Feb. 25, heads to President Barack Obama for his signature into law.

Democrats said the bill would provide needed funding increases for federal agencies that

beam. In addition, they are proposing to build multi-kiloton liquid argon detectors for future long base line experiments. At Fermilab we have an R&D program towards the development of the technology. We are ready to use a small detector, ArgoNeut, in the NUMI hall; we are developing MicroBooNE to determine the nature of the excess events at low energies observed by MiniBooNE and at the same time learn how to scale detectors to large masses; and, we will be designing very large multi-kiloton detectors for future long-baseline neutrino experiments such as DUSEL. Clearly there is much to gain in moving forward in collaboration. Several models are possible, and we will explore them over the next several months.

Discussing science in Padova is special for physicist like myself coming from a relatively young American physics tradition. The university was founded in 1222. Galileo by his own account spent his best 18 years here from 1592 to 1610. Today some 65,000 students attend the University of Padova. Graduating ceremonies were taking place in Padova when we visited, and we saw more female than male graduates going through centuries-old graduating rituals.

This year we celebrate the Year of Astronomy, the 400th anniversary of Galileo's astronomical discoveries while in Padova. In celebration the university and the city of Padova have created a great exhibit on Galileo's achievements and subsequent developments in science up to the LHC. The exhibit includes some original texts from the XVII century and very early telescopes and microscopes. The university has many centuries of contributions to science. In one room the pictures of distinguished foreign faculty going back centuries adorns the wall — no visa problems then. In 1678 the university graduated the first woman from any public university in the world. It graduated the second woman 200 years later and appointed its first female professor to a faculty chair only in the 1960s. The latter, Professor Milla Baldo Ceolin, is our lively host at the Neutrino Telescope Conference taking place in Venice during this week.

#### Safety Update

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)

saw too many lean years during former  
President George W. Bush's administration.

"The agencies of our government have been  
so under-funded and under-resourced during  
the Bush years that these agencies need this  
money so they can function properly," said  
Senate Majority Leader Harry Reid, a Nevada  
Democrat.

[Read more](#)

### Special Announcement

## Indian Association of Fermilab presents Dandia/Garba dance event March 27



The Indian Association of Fermilab, Drishiti,  
will host a celebration in honor of the Indian  
Holi festival with dancing done in two styles:  
Dandia and Garba. The open celebration  
takes place from 4 to 6:30 p.m. on Friday,  
March 28, in Kuhn Barn in the Fermilab  
Village.

These dances feature circular movements  
timed to the clapping of hands or jingling of  
sticks along with the sounds of various  
musical instruments.

Garba, a popular folk dance, is a unique group  
dance where people dressed in colorful  
dresses move gracefully in a circle. Dandia, a  
light-spirited dance, is performed with  
decorated bamboo sticks called dandies held  
in the hands. Drishiti will provide Dandia sticks  
for the dance, and will offer free lessons for  
newcomers.

View a demonstration of Dandia [here](#).

A potluck dinner will follow the dance. Please  
bring your favorite dish to share. Tickets are  
\$5 per person, and reservations are required.  
Please RSVP by March 16 to [Fermilab.  
Drishti@gmail.com](mailto:Fermilab.Drishti@gmail.com).

## ES&H weekly report, March 9

This week's safety report, compiled by the  
Fermilab ES&H section, lists no injuries  
reported. We have now worked 6 days since  
the last recordable injury. Find the full report  
[here](#).

[Safety report archive](#)

### Announcements

#### Latest Announcements

[Dandia/Garba dance evening on March 28](#)

[WDRS researches Transit Benefit  
Program](#)

[Coed softball season begins May 13](#)

[Harlem Globetrotter employee discount](#)

[Have a safe day!](#)

[Free Step Aerobics class in March](#)

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

[Discount tickets to "Dora the Explorer  
Live"- March 26-29](#)

[Blackberry Oaks Golf League](#)

[Sustainable Energy Club](#)

[New electronic org chart](#)

[Muscle Toning classes](#)

[Kyuki Do classes March 30](#)

[Barnstromers Delta Dart night March 11](#)

[Fermilab Arts Series presents Solas March  
14](#)

[Barn Dance March 15](#)

[Altium Designer Lunch and Learn Seminar  
March 17](#)

[Excel 2007 Pivot Tables class March 18](#)

[PowerPoint 2007: Intro class March 19](#)

[Bulgarian Dance Workshop March 19](#)

[URA visiting Scholars applications due](#)

[March 20](#)

[NALWO Adler Planetarium Trip March 21](#)

[Child Care program March 24](#)

[Publisher 2007: Intro class April 1](#)

[Conflict Management & Negotiation Skills class April 1](#)

[English Country Dancing April 5](#)

[Outlook 2007 New Features class April 8](#)

[SciTech Summer Camps](#)

[Phillips Park Golf League](#)

[Additional Activities](#)

---

[Submit an announcement](#)