

Calendar

Wednesday, Dec 3
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Fermilab Colloquium](#) - One
West
Speaker: Bruce Winstein,
University of Chicago
Title: CMB Polarization, the
QUIET Experiment, and an
Inside View of Gravity Wave
Searches in the CMB

Thursday, Dec. 4
1 p.m.
Physics and Detector Seminar
- West Wing, WH-10NW
Speaker: Jeff Gronberg,
Lawrence Livermore National
Laboratory
Title: Gamma-Gamma Physics
and Detectors at the ILC
2:30 p.m.

[Theoretical Physics Seminar](#) -
Curia II
Speaker: Henrik Johansson,
University of California, Los
Angeles
Title: Superfiniteness of N=8
Supergravity at Three Loops
and Beyond
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-over

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

Weather



Rain/Snow
34°/14°

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

Current Security
Status

Feature

Jean Slaughter wins Director's
Volunteer Award

Retired physicist Jean Slaughter accepts the
Director's Volunteer Award from Fermilab Director
Pier Oddone during a ceremony on Nov. 25.

Fermilab Director Pier Oddone awarded
retired Fermilab physicist Jean Slaughter the
2008 Director's Volunteer Award for her efforts
as a mentor, classroom presenter and trainer
of teachers and volunteers.

Suzanne Weber and Peter Garbincius also
received certificates of appreciation as finalists
for the award.

The award is given annually to an employee,
user, graduate student, retiree or guest
scientist who has significantly contributed to
the Education Office's volunteer efforts.

Engineering physicist Sharon Lackey, who
chaired the selection panel, said Slaughter
was an obvious choice. "It's the number of
people Jean's affected and the variety of ways
she has volunteered over the years," Lackey
said.

Slaughter has mentored students and interns
at Fermilab since she arrived as a post-doc in
1973. She was one of the first volunteers in
the Fermilab Education Office's classroom
presentation program, which started in 2005.
She has assisted since 2006 with QuarkNet, a
program that connects high school students,
teachers and physicists.

One reason she started volunteering was to
encourage students, especially girls, to
consider going into physics. "It's important that
they can see that physicists are regular people

From the CMS Center

No quiet time for CMS

*Lothar Bauerdick, head of the CMS Center at
Fermilab, wrote this week's column.*

"Why do you have to go to
CERN when the LHC is
broken?" my little daughter
asked disappointedly in
November when I left for
the second time within a
month to help with data-
taking shifts at CERN.
Yes, the Large Hadron
Collider is down, but work
on the CMS experiment continues
unswervingly, making good use of the
additional time available for commissioning the
detector.



Lothar Bauerdick

Less than two weeks after the spectacularly
successful LHC startup on Sept. 10, many of
us felt what LHC project leader Lyn Evans
called "a kick in the teeth." On Sept. 19, the
CMS collaboration's hopes for first proton-
proton collisions this year disappeared when a
deluge of liquid helium poured into the LHC
tunnel due to a the quench of a
superconducting electrical connection,
resulting in an electric arc that burned a hole
into a cryostat.

While LHC experts are repairing the machine,
CMS is far from sitting back and just waiting.
During the last month, CMS performed an
extensive cosmic-ray run, collecting about 300
million cosmic-muon events, most of them with
the full CMS magnetic field turned on. Taking
data at rates of 300 events per second and
running the experiment 24/7 for several weeks
was comparable to what will occur when
taking data with the LHC collider. CMS
exercised all its data-taking systems:
acquisition, prompt event reconstruction,
calibration and data distribution to computing
centers around the world.

Since then CMS has shut down the detector
for maintenance and repair work. We also will
take this opportunity to install the last missing
subcomponent, the pre-shower detector.

The first re-processing of our cosmic-muon
data is going on, orchestrated by the data
operations teams at Fermilab and CERN. We
are using an updated software version that

[Secon Level 3](#)[Wilson Hall Cafe](#)

Wednesday, Dec. 3

- Beef barley
- Cowboy burger
- Smart cuisine: caribbean grill salmon
- Liver w/onions
- Beef & cheddar panini w/ sauteed onions
- Assorted sliced pizza
- Cavatappi pasta w/Italian sausage & tomato ragu

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

Wednesdsay, Dec. 3

Lunch

- Rouladen
- Buttered dill egg noodles
- Glazed baby carrots
- German chocolate cake

Thursday, Dec. 4

Dinner

- Coquilles Saint Jacques
- Duck breast
- Nutted wild rice
- Julienne of peppers
- Apple walnut cake w/ calvados cream

[Chez Leon Menu](#)

Call x3524 to make your reservation.

[Archives](#)[Fermilab Today](#)[Result of the Week](#)[Safety Tip of the Week](#)[ILC NewsLine](#)[Info](#)

so they can imagine being a physicist or a scientist themselves," she said.

Slaughter has worked on CDF and a number of other experiments. Although she retired last summer, she still volunteers and is working on the Dark Energy Survey.

In FY2008, through programs including classroom presentations, QuarkNet and the Ask-a-Physicist program, 205 Fermilab volunteers have interacted with about 30,000 students and 2,000 teachers from the surrounding communities.

"Fermilab is an important presence in the educational picture of this region," Oddone said. "That job couldn't be done without an immense number of volunteers."

At the Nov. 25 award ceremony, Oddone presented Slaughter with a plaque and a \$1,000 prize, made possible by an anonymous donor.

-- *Kathryn Grim*

[In the News](#)**Particle physics: Mass by numbers**

From *Nature*, Nov. 27, 2008

A highly precise calculation of the masses of strongly interacting particles, based on fundamental theory, is testament to the age-old verity that physical reality embodies simple mathematical laws.

In a milestone paper, Dürr et al. report a first-principles calculation of the masses of strongly interacting particles (hadrons, such as the proton), starting from the basic equations for their constituent particles (quarks and gluons), and including carefully documented estimates of all sources of error. Their results, published in *Science*, highlight a remarkable correspondence between the ideal mathematics of symmetry and the observed reality of the physical world.

Quantum chromodynamics (QCD), the theory of the so-called strong force or strong interaction, postulates elegant equations for quarks and gluons. Those equations embody enormous symmetry, which largely dictates their form. A dramatic reflection of this conceptual rigour is that the equations contain very few freely disposable parameters — just a mass for each 'flavour' of quark (u, d, s, c, b,

implements our lessons learned. The results we've obtained allow us to understand detector alignment and efficiencies, particle tracking and calorimetry performance and reliability of all CMS systems.

This also is a time to plan for the discoveries to come. The Fermilab LHC Physics Center has just started a visiting theorist program. Matt Strassler, of Rutgers University, is the first theorist in residence. For a week, he'll give lectures and seminars and offer "office hours" to answer questions by LHC experimentalists.

As you can tell, it's not a quiet time for CMS.

[Safety Update](#)**ES&H weekly report, Dec. 2**

This week's safety report, compiled by the Fermilab ES&H section, includes no injuries. We have now worked 28 days since the last recordable injury. Find the full report [here](#).

[Safety report archive](#)[Announcements](#)

[Have a safe day!](#)

[Annual Enrollment through Dec. 10](#)

[Annual enrollment carrier meetings Dec. 4, 9](#)

[Fidelity representative at Fermilab Dec. 3](#)

[Education Office Holiday Sale, Dec. 3 & 4](#)

[International Folk Dancing, Dec. 4](#)

[NALWO - Winter Holiday Tea, Dec. 5](#)

[Fermilab Film - "My Left Foot" Dec. 5 at 8 p.m.](#)

[Carols for Dancing - A Renaissance Christmas at Fermilab, Dec. 6](#)

[English Country Dancing, Dec. 7](#)

[FileMaker Pro 8.0 - Dec. 10](#)

[NALWO - Christkindlmarket Chicago, Dec. 13](#)

[Barn Dance Dec. 14](#)

Fermilab Today
is online at:
www.fnal.gov/today/

Send comments and
suggestions to:
today@fnal.gov

t) and an overall coupling constant. This makes QCD, in principle, an extremely powerful predictive framework. In fact, it's even tighter than this accounting suggests: for many purposes one can ignore the heavy quarks (c, b, t) and absorb the coupling constant into an overall scaling factor.

[Read more](#)

[Fermilab Blood Drive Dec. 16, 17](#)

[The University of Chicago Tuition Remission Program deadline Dec. 17](#)

[Find carpool partners with PACE](#)

[Python Programming - Jan. 6 - 8](#)

[Intermediate / Advanced Python Programming - Jan. 27 - 29](#)

[Additional Activities](#)

[Submit an announcement](#)