

Calendar

[Have a safe day!](#)

Tuesday, Nov. 17
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Accelerator Physics and Technology Seminar](#) - One West
Speaker: Bill Ng, Fermilab
Title: Coupling Impedances of Accelerator Rings (Part 3 of 4)

Wednesday, Nov. 18
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Fermilab Colloquium](#) - One West
Speaker: Hasan Padamsee, Cornell University
Title: Superconducting RF, the History, Challenges and Promise

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

Campaigns

[Take Five](#)

[Tune IT Up](#)

H1N1 Flu

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

Weather

 Chance of rain
47°/40°

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

Feature

Muon collider workshop accelerates experiment R&D



Fermilab theorist Joe Lykken gives an overview of a the physics potential for a muon collider at the Muon Collider Workshop, Nov. 10-12 at Fermilab.

Fermilab took the next step in ensuring that the high-energy physics community has choices for the path to discovery beyond the energy range of the Large Hadron Collider.

The laboratory hosted a three-day [workshop](#) last week as a precursor to a new [national muon collider R&D program](#).

Results from the LHC will help to determine which of the proposed machines — the International Linear Collider or either the muon collider or Compact Linear Collider— is the preferred choice for the world's next energy-frontier collider.

"There is no question there will be interesting physics even in the era of 20 years running of the LHC," said workshop co-chair Fermilab theorist Estia Eichten.

The workshop, which drew about 80 participants from outside Fermilab, consolidates and builds on a decade of research with the goal of producing a white paper in 18 months and an end-to-end feasibility study within five years.

"We are within reach of finding out whether a muon collider is an option," said Steve Geer of Fermilab's Accelerator R&D Department and newly appointed interim co-director of the national Muon Accelerator Program.

Director's Corner

Over the top



Director Pier Oddone speaks on Nov. 9 during the Project X workshop.

Last week activities at Fermilab were at a peak. Not only was the experimental program in full swing, but we had two important workshops, one on the experimental program of [Project X](#) and the other on the experimental reach of a possible [muon collider](#). To top it all we had the fall meeting of the Program Advisory Committee with one of its busiest agendas ever.

The first workshop dealt with the physics opportunities of Project X. We have analyzed two "initial configurations" for Project X, IC-1 and IC-2. The IC-1 uses a pulsed linac with millisecond-long pulses at 2.5 Hz - a linac that is very similar to the ILC. This linac would produce an 8 GeV proton beam to be injected into the existing Recycler, which in turn would feed the Main Injector.

The IC-2 replaces the pulsed linac with a continuous wave (CW) linac in the 2- to 3-GeV range followed by a rapid cycling booster (RCS) to create the 8 GeV beam for the Recycler. Currently IC-2 appears to offer a richer program of physics. It would be a unique facility with a continuous 2 MW proton beam at low energies for producing intense beams of muons and kaons, illuminate a high power target for electric dipole moment studies with rare ions, produce intense fast-spill proton beams at 8 GeV and would simultaneously feed all our neutrino programs. This workshop was only the start of more detailed studies of the various physics experiments that will influence the design of the accelerator.

Current Security Status

[Second Level 3](#)

Wilson Hall Cafe

Tuesday, Nov. 17

- Bagel sandwich
- Golden broccoli soup
- Southern-style fish sandwich
- Coconut-crust tilapia
- Burgundy beef tips
- La Grande sandwich
- Assorted slices of pizza
- Chicken fajitas

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, Nov. 18

Lunch

- Scallops with chipotle-orange sauce
- Yellow pepper rice
- Steamed broccoli
- Coconut cake with caramel sauce

Thursday, Nov. 19

Dinner

- Egg drop soup
- Asian braised beef short ribs
- Roasted new potatoes
- Sautéed spinach
- Lemon Napoleon

[Chez Leon Menu](#)

Call x3524 to make your reservation.

Archives

[Fermilab Today](#)

[Result of the Week](#)

[Safety Tip of the Week](#)

[CMS Result of the Month](#)

[User University Profiles](#)

[ILC NewsLine](#)

Workshop attendees are off to a quick start. Prior to the meeting they produced detector simulations of backgrounds. During the workshop they moved forward with planning for Project X, a possible high-energy proton source for the muon collider; worked with members of the fourth detector, a previous design option for the ILC; and proposed horizontal collaborative efforts with the ILC and CLIC.

Collaborators plan to explore further synergies with the ILC, CLIC and the LHC upgrade plans for lepton collider R&D, particularly for physics benchmarks and detector components.

Fermilab Deputy Director Young-Kee Kim praised the work done so far and asked for more international collaboration beyond the current U.S., European and Asian participation on this "exciting, challenging journey."

— *Tona Kunz*



The red lines portray a possible layout for a proposed muon collider on the Fermilab site.

In Brief

No-parking areas will save salt, labor and money



These lime-green cones will mark the special no-parking areas during the winter.

parking lots that will not receive snow removal service with lime-green, highly visible cones.

Every winter, FESS Roads and Grounds crews clear more than 85 parking lots across the Fermilab site.

In an effort to streamline parking lot plowing operations without jeopardizing safety, FESS Roads and Grounds, in cooperation with building managers, will again mark unneeded portions of

The second workshop restarted the studies stopped a decade ago to understand how to extract physics in a muon collider environment. Any machine that can reach the multi-TeV scale — be it with muons or electrons — will be enormously complex. CERN is exploring how to reach these energies with a 50 km electron-positron linear collider of innovative design. We are exploring a muon collider that might fit in the Fermilab site.

A muon collider could be a powerful tool if we can achieve high luminosity and deal with the background environment in the interaction regions. Muon decays lead to a large flux of electrons in the interaction region from which detectors must be shielded. The shielding to absorb these electrons creates small angle exclusion cones in the detector. This workshop was the beginning of an 18-month study of the physics issues for a 1.5 TeV and a 3 TeV muon collider. Together with the Neutrino Factory and Muon Collider Collaboration (NFMCC), the laboratory has proposed to establish the feasibility of muon accelerators in the next few years. Such a machine might just be what the doctor ordered if the LHC physics results point to the multi-TeV scale.

In the News

LHC to finally start next week, again

From *Wired*, Nov. 13, 2009

CERN is reporting that the Large Hadron Collider could circulate particle beams through both of its pipes in just over a week. If all goes well, the first collisions would begin soon after that.

The LHC has had a rough time since it first started up in September last year. Just a week after it started up, an electrical problem shut it down again. The first down-time estimate was a day or so, then it became months. And when the repair was just about finished, vacuum leaks in July set it back several more months. It has now been more than a year.

[Read more](#)

Accelerator Update

Info

Fermilab Today

is online at:

www.fnal.gov/today/

Send comments and

suggestions to:

today@fnal.gov

Visit the Fermilab

[home page](#)

Roads and Grounds staff will mark about 25 parking lots the week after Thanksgiving to concentrate vehicle parking and reduce the area that needs to be plowed this winter.

The cones will designate the areas as no-parking zones throughout the winter season. No vehicles may park in the marked zones. The cones will remain in place until the second half of March. Fermilab security personnel will monitor the no-parking areas.

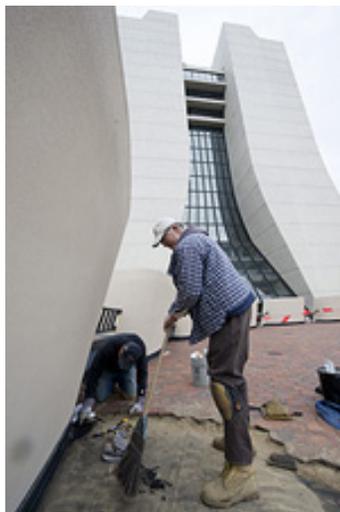
Establishing these no-service areas will allow for better and more frequent snow removal efforts in high-priority snow removal locations while still reducing overall cost. In addition, the use of less salt and less fuel will have a positive environmental effect.

If you have questions about parking during the winter season, please contact the building manager for your work area.

What's Happening Here?

Roof, drainage repairs begin at Ramsey Auditorium

Editor's note: *Today*, Fermilab Today launches a new department to keep you better informed about new and ongoing construction projects happening around the laboratory.



Contractors started repairs to the roof of Ramsey Auditorium on Friday. The work will fix the leaks in the roof and improve the drainage system. John Kent, Wilson Hall building manager, expects work to continue through the week. Areas of the patio outside the cafeteria will remain closed until the work is complete.

Nov. 13-16

- Four stores provided approximately 43.25 hours of luminosity
- CDF required access to repair equipment
- LRF5 filament repaired
- Recycler beam valve closure caused loss of stash

* The integrated luminosity for the period from Nov. 9 to Nov. 16 was 51.07 inverse picobarns.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

Latest Announcements

[Diabetes Awareness Lunch & Learn - Nov. 18](#)

[2010 entertainment discount book available online](#)

[Book Fair today and Nov. 18](#)

[Register for your TurkeyDate](#)

[Become the speaker and leader you want to be - Nov. 18](#)

[Free Webinar on the Roth IRA Conversions in 2010 - Nov. 18](#)

[International folk dancing Thursday evenings at Kuhn Village barn](#)

[Process Piping \(ASME B31.3\) class on Nov. 18, 19 and 20](#)

[Lederman Science Center holiday hours](#)

[Consider a car or van pool this winter](#)

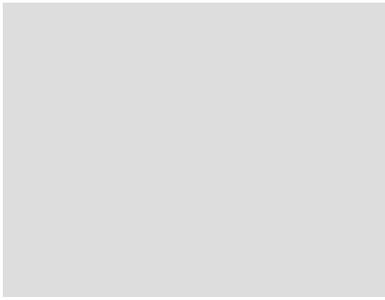
["The Night Before Christmas Carol" at Fermilab Arts Series - Dec. 5](#)

[Wilson Hall stocking stuffer holiday sale - Dec. 9-10](#)

[Fermilab Management Practices seminar - Feb. 11](#)

[Discount movie tickets available](#)

[Chicago Blackhawks discount tickets](#)



[Thai Village restaurant discount](#)

[Argentine Tango at Fermilab](#)

[Additional activities](#)

[Submit an announcement](#)