Layoff Information

New information on Fermilab layoffs, including an up-to-date Q&A section, appears on the layoff Web pages.

Furlough Information

Information on the furloughs at Fermilab, which stopped May 31, 2008, is available on the furlough Web pages.

Calendar

Tuesday, June 17
12 p.m.
Summer Lecture Seminar - Curia II (NOTE LOCATION)
Speaker: H. Prosper, Florida State University
Title: The Standard Model and Beyond
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
4 p.m.
Accelerator Physics and Technology Seminar - One West
Speaker: A. Hahn, Fermilab

Title: Statistical Data Analysis (Part I)

Wednesday, June 18
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
4 p.m.
Fermilab Colloquium - One West
Speaker: F. Danuso, University of Udine
Title: Knowledge Integration to Make Decisions About Complex Systems: Sustainability of Energy Production from Agriculture

Click here for NALCAL, a weekly calendar with links to additional information.

Weather

Feature

Lessons learned: Accelerator scientists offer experience

A damaged power switching transistor. The damage was induced by wayward background charged particles from the accelerator beam in the CDF collision hall.

Building the LHC - the world's newest particle accelerator of an unprecedented scale --wasn't easy. Turning it on won't be either.

"The LHC is the largest, most energetic and most complex collider and cryogenic machine and will no doubt be difficult to commission and optimize," said CERN scientist Helmut Burkhardt.

To help commission and operate the LHC detectors as smoothly as possible, CERN scientists sought advice from accelerator scientists around the world. A workshop in early April brought together machine and experiments experts from the Tevatron at Fermilab, RHIC at BNL and HERA at DESY to share their experiences. Experts from those laboratories offered advice.

Fermilab scientists Rick Tesarek and Nikolai Mokhov, who work on background origins and solutions in the Tevatron, gave measurements, methods and techniques used in the Tevatron to reduce background events.

"We understand places where one can lose control and also what level of control you have to maintain," Tesarek added.

Scientists estimate that during the early years while the LHC ramps up its luminosity, particles that stray from the beam (called machine-induced backgrounds) could cause large-scale problems. To understand and prevent potential problems, CERN scientists looked to scientists elsewhere to learn what they can expect, including the level of background events that can occur, what the events can do to the accelerator and

Director's Corner

Education

Pier Oddone and Leon Lederman at the University of Chicago Convocation Saturday.

Last Saturday at the University of Chicago Convocation, Leon Lederman received the William Benton Medal. The medal is given by the University to individuals who have rendered distinguished public service in the field of education "not only to teachers but also ... everyone who contributes in a systematic way to shaping minds and disseminating knowledge."

Leon continues to shape minds and disseminate knowledge to a broad audience. He helped build a strong tradition for education at all levels at Fermilab; he is a founder of the Illinois Academy for Mathematics and Science and continues to lecture there; he founded the Teachers Academy for Mathematics and Science aimed at training 20,000 primary school teachers in Chicago; and most recently served as co-chair of the Commission on 21st Century Education in Science, Technology, Engineering and Mathematics for the NSF. A couple of weeks ago at the New York Science Festival, Leon had a table on 34th Street with a view of the Empire State Building enticing passerby to "ask the laureate" any question. This was only his latest of innumerable contributions to educate the public.

We at Fermilab continue a strong tradition of education initiated by Leon and still thriving today under the direction of Marge Bardeen and her education group. These educational activities are beyond the creation of the many physics Ph.Ds (more than 100 last year) coming out of the research programs we and our partner

Wilson Hall Cafe

Tuesday, June 17
- Tomato bisque
- Lemon pepper club
- Beef w/peppers
- Lasagna Florentine
- Grilled chicken Caesar wrap
- Assorted slice pizza
- Rio Grande taco salad

Wilson Hall Cafe Menu

Chez Leon

Wednesday, June 18
Lunch
- Assortment of quiches
- Salad of field greens with raspberry vinaigrette
- Apple walnut cake w/ cream Chantilly

Thursday, June 19
Dinner
- Melon & prosciutto
- Grilled duck breast w/ Zinfandel fig sauce
- Wild rice w/ pecans and currants
- Sautéed green beans
- Lemon Napoleons

Chez Leon Menu
Call x4598 to make your reservation.

Archives

Fermilab Today

Result of the Week

Safety Tip of the Week

ILC NewsLine

Info

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

Send comments and suggestions to:
today@fnal.gov

---

detectors and how backgrounds can interfere with legitimate signals.

"We want to transfer as much knowledge as possible to those commissioning," Mokhov said.

Considered the world's leading background expert, Mokhov has helped calculate CERN's risk for background events, and was instrumental in developing the collimators now installed close to the detectors. Collimators absorb wayward or halo particles, preventing them from interacting with other objects.

Although advice continues, Burkhardt said that LHC scientists have learned a lot from their accelerator colleagues. One lesson learned confirmed the need to have a close and continuous collaboration to optimize running conditions that can help to prevent damage and danger to machines and detectors.

-- Rhianna Wisniewski

In the News

Chillin' out at the LHC

From *The Great Beyond, a nature.com blog*, June 13, 2008

The summer may be getting warm, but the Large Hadron Collider is cooling down.

The world's largest particle accelerator at CERN near Geneva, Switzerland, is entering the final testing phase of its superconducting magnets, which will be used to steer protons around the ring and smash them into each other at energies of up to 7TeV. In order to work, the magnets must be chilled to 1.9 Kelvin, and that requires a huge network of vacuum pumps, cryostats and electrical feedthroughs, all of which need to be made air-tight.

Read more and view the accompanying graphic

In the News

Nobel prize physicist in the making

From *Times Online*, June 14, 2008

Peter Higgs on the verge of scientific superstardom

The visit was kept secret. So when scientists and technicians working in the vast research tunnel buried deep underground in Geneva saw an elderly man with a shock of white hair and large, thick spectacles being led on a guided tour, they thought little of it. Only later, when a rumour began to sweep round the European Organisation for Nuclear

---

universities carry out at the laboratory. The education program at Fermilab touches many young students both directly and through their teachers.

This column is too short to describe its many wonderful programs , but we can look at some of the numbers. The statistics are remarkable. Just this last month we had 602 students from seven schools participate in field trips at Fermilab on various subjects including the prairie. We had 550 casual visitors to the Lederman Education Center, gave 11 tours of the laboratory to schools that brought 374 students and 11 teachers, 11 additional tours with 210 others participating, we had 68 participants in "Ask a Scientist" and 50 participants in "Getting to know Fermilab". We made classroom presentations to 1,690 students with the Mr. Freeze cryogenics demonstration, 80 students saw the Light and Color demonstration and other presentations were given to 50 students. We continue with our many activities that enrich science education such as Saturday Morning Physics, the Teacher Resource Center, QuarkNet, and the internships associated with Workforce Development Programs. All this level of activity in one month was even before the summer arrived in full force. There are now 27 events planned for the next month.

Over the whole of 2007, our education programs touched 30,000 students and 2,400 teachers, an important contribution to science education nationally. Education is one of our most important and enduring products, one that we are fortunate to be able to provide thanks to the efforts of our education group and the many Fermilab volunteers.

Announcement

WH Taxi service moved to building West side

A crew will power spray the east side of Wilson Hall today to remove loose concrete. Taxi service will pickup and dropoff at Wilson Hall's west side entrance until repairs end in August.

Accelerator Update

June 13-16
- Four stores provided ~46 hours and 34 minutes of luminosity
- High temperatures cause problems
- Nitrogen Dewar at A0 develops leak
- Sunday morning lightning strikes cause store 6221 to quench
- Lightning strikes trip off many devices

Read the Current Accelerator Update
Read the Early Bird Report
View the Tevatron Luminosity Charts

Research (Cern) facility did they realise his significance. Peter Higgs, now 79 but still sprightly, is the reason they are working on what is the largest, most expensive physics experiment ever conceived.

By the time Higgs reached the canteen during his visit last April, the word was out about his presence. Professors with PhDs and a lifetime's work in particle physics, hard-bitten laboratory technicians, and fresh-faced recent graduates clamoured round him. Some sought his autograph, others just wanted to meet him, to be in his company. A shy, modest man, he found the attention overwhelming. Not for the first time in his life, he might have reflected on how one idea he had 44 years ago, one moment of grasped insight, has come to define him.

Read more