

Calendar

Tue., May 15
3:30 p.m.
 DIRECTOR'S COFFEE
 BREAK – 2nd Flr X-Over
4:00 p.m.
 Accelerator Physics and
 Technology Seminar
 - 1 West
 Speaker: Y. Kim, Duke
 University
 Title: Experimental
 Optimization of TTF2 RF
 Photoinjector and Bunch
 Compressors

Wed., May 16
11:00 a.m.
 Fermilab ILC R&D Meeting – 1
 West
12:00 p.m.
 Fermilab ILC Town Meeting –
 1 West
 Speaker: A. Para, Fermilab
 Title: The Calorimetry
 Challenge for ILC Detectors
3:30 p.m.
 DIRECTOR'S COFFEE
 BREAK – 2nd Flr X-Over
 Speakers: M. Ross and R.
 Kephart, Fermilab
 Title: On the Path to the ILC
 EDR
4:00 p.m.
 Fermilab Colloquium – 1 West
 Speaker: N. Finkelstein,
 University of Colorado
 Title: Educating Scientifically:
 Advances in Physics
 Education Research

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

Weather

 **Chance of
 thundershowers 75°/49°**

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

Current Security Status

Feature

Fermilab mentors offer IMSA students the finishing touch



IMSA students (left to right): Je-ok Choi (Fermilab mentors Young-Kee Kim and John Yoh), Anita Mehta (Niki Saoulidou), Jennifer Iglesias (Mark Fischler), Susan Dittmer (Jane Nachtman), Forrest landola (Mike Syphers), Angela Suh and Stephanie Bian (both mentored by Young-Kee Kim and John Yoh. Not pictured: Monica Bhattacharya (Gina Rameika), Birce Onal (Richard Schmitt), and Parker Schmitt (Niki Saoulidou).

On April 26, thirteen gifted high school students offered presentations to culminate their year-long research projects under the mentorship of Fermilab scientists. The students gave 15 minute talks and presented posters across disciplines at their school in Aurora. They were among 250 Illinois Mathematics and Science Academy students who participated in the IMSA mentorship program the past year.

IMSA has a long-established program of student mentorships at labs, museums, hospitals and other institutions throughout the Chicago area. Fermilab was one of the first organizations to participate in IMSA's mentorship program, which began in 1989.

"In the early years finding mentors was somewhat ad hoc, by word of mouth or through contacts that students made with Leon Lederman's help," said program facilitator Marge Bardeen, manager of the Fermilab Education Office. "Also, students introduced their mentors to other students at the end of the year."

Today, Fermilab and IMSA have support teams to match mentors with students. "It's a great opportunity. Students get real world experience with world-class scientists," said Judy Scheppler, IMSA coordinator of student

Director's Corner

Investigating the dark world

The dark world is doing well here at Fermilab. Last week, the Fermilab Center for Particle Astrophysics hosted a symposium on dark matter. The vibrancy of the community hunting for dark matter is palpable. Many



Pier Oddone

researchers across the world are drawn to the hunt and many of them were here to share their ideas and excitement. At Fermilab we participate in this search along two avenues in a broadly collaborative effort with the HEP community.

The first avenue is to attempt to detect particles in the halo of our galaxy using sophisticated detectors deep underground, and the second is by getting ready to produce dark matter particles with the LHC and detect them with the CMS detector. Either one of these avenues will pay off only if dark matter is made of massive relic particles left over from the Big Bang. Circumstantial evidence points strongly to the possible explanation of dark matter by the existence of WIMPS - a fortuitous acronym that describes a weakly interacting massive particle. Adding to our expectations, supersymmetric theories using totally independent reasons postulate the existence of these particles. And to top it all off, if these particles exist, they are likely to be produced at the LHC. Dark matter is surely around the corner!!

We have fewer prejudices about dark energy than about dark matter. While many clues point towards dark matter as being made of relic particles, we don't have a clue about what dark energy is. So we are left with studying the one effect that dark energy produces: the accelerating expansion of our present universe. We are only at the beginning of the quest to understand dark energy. The next step is to understand more precisely the rate of acceleration of the expansion, and how that rate might change over time.

At the beginning of this month a DOE and

[Secon Level 3](#)

Wilson Hall Cafe

Tuesday, May 15

- Creamy turkey vegetable
 - Chicken gyros
 - *Salisbury steaks w/ mushroom au jus
 - Chicken cacciatore
 - Italian panini w/ provolone
 - Assorted pizza slices
 - Super burrito
- *Carb Restricted Alternative

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, May 16

Lunch

- Grilled flank steak
- Jasmine rice
- Pea Pods & mushrooms
- Chocolate almond mousse

Thursday, May 17

Dinner

- Sautéed baby beets w/ haricots verts, lemon & feta
- Grilled lamb chops - New potatoes, cherry tomatoes & green beans w/ basil
- Apricot almond tart

[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

research and inquiries.

CDF scientist Jane Nachtman tutored IMSA student Susan Dittmer this past year, working together each Wednesday on CDF physics simulations. Nachtman taught her the particle physics, detector science and other physics concepts required in the project. Nachtman said the work was at the level of an undergraduate student, but with the independence of a graduate student.

Susan's IMSA report summarized her analysis of CDF dilepton events, looking for signs of new physics. "As a woman in physics," Nachtman said, "I think I should encourage other women to become physicists. Susan prepared her talk and poster completely on her own, and she did a great job."

--Kate Raiford

Photo of the Day



A young calf frolicks on Fermilab's buffalo farm during a warm spring day. The calf is one of nine born this spring. *Image courtesy of Linda Valerio, Accelerator Division.*

In the News

NSF review committee recommended proceeding with CD-1 approval of the Dark Energy Survey (DES), a broad collaboration in which Fermilab plays a leading part. The experiment will carry out a broad survey of the Southern sky using a modified telescope in Chile and a sophisticated CCD imager. The DES experiment will add to the knowledge of dark energy and will set the stage for even more ambitious projects in the next decade using satellites in space and larger telescopes on the ground.

In all of these projects, dark energy, dark matter and CMS, we benefit greatly from the extraordinary collaboration between DOE and NSF in support of the HEP community and the laboratory.

Accelerator Update

May 11 - 14

- Three stores provided 55 hours and 10 minutes of luminosity
- TeV conducts destructive end-of-store study
- Two transfers lost during stash
- ORBUMP power supply fails

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

May 16: Employee Health & Fitness Day On May 16, from 11:30 a.m. - 1:00 p.m., the Recreation Office will sponsor the National Employee Health & Fitness Day Event. Walk, run, or bike your way around the ring. This year's theme will be "Safety at Home." A table will be set up at A1 for participants to sign in and pick up their game ticket and a bottle of water. The largest percentage of participation from Divisions and Sections will win the traveling trophy. Rain date will be May 17.

Spring/summer muscle toning class

Get a head start in getting fit and have fun doing it by joining the muscle toning classes. Gain strength, lean body mass and increased muscle definition with the Recreation Facility strength training classes held on Tuesday and Thursday in the Recreation Facility from 5:30-6:30 p.m. Class is open to both male and female beginners or advanced students. The class schedule is: June 5 - June 28, 4 weeks at \$32.00 July 10 - August 2, 4 weeks at \$32.00 Registration deadline is the Friday prior to the start of the session. You must be a Recreation Member to participate. Registration Forms can be found in the Recreation office or

The New York Times

May 15, 2007

A Giant Takes On Physics' Biggest Questions

By DENNIS OVERBYE

300 FEET BELOW MEYRIN, Switzerland —
The first thing that gets you is the noise.

Physics, after all, is supposed to be a cerebral pursuit. But this cavern almost measureless to the eye, stuffed as it is with an Eiffel Tower's worth of metal, eight-story wheels of gold fan-shape boxes, thousands of miles of wire and fat ductlike coils, echoes with the shriek of power tools, the whine of pumps and cranes, beeps and clanks from wrenches, hammers, screwdrivers and the occasional falling bolt. It seems no place for the studious.

The physicists, wearing hardhats, kneepads and safety harnesses, are scrambling like Spiderman over this assembly, appropriately named Atlas, ducking under waterfalls of cables and tubes and crawling into hidden room-size cavities stuffed with electronics.

They are getting ready to see the universe born again.

[Read more](#)

on the [website](#).

Hatha yoga class

Learn the benefits of yoga. The next class will begin May 15 through July 10 (no class July 3) on Tuesdays from Noon to 1 p.m. in the Auditorium WHGF. This cost for this eight-week class is \$80.00. [Information and registration forms](#).

EAP Office closed May 18

The EAP office will be open Wednesday, May 16th and Thursday, May 17th and closed on Friday, May 18th. The EAP is available 24/7 by calling 800-843-1327.

[Upcoming Activities](#)