

Calendar

Thursday, Jan. 15
THERE WILL BE NO PHYSICS AND DETECTOR SEMINAR THIS WEEK
THERE WILL BE NO THEORETICAL PHYSICS SEMINAR THIS WEEK
3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
4 p.m.

[Accelerator Physics and Technology Seminar](#) - One

West

Speaker: James Volk, Fermilab
Title: Ground Motion Studies at Fermilab

Friday, Jan. 16

3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
THERE WILL BE NO JOINT EXPERIMENTAL-THEORETICAL PHYSICS SEMINAR THIS WEEK
8 p.m.

[Lecture Series](#) - Auditorium

Tickets: \$5

Speaker: Dr. May Berenbaum, University of Illinois
Title: BSI: The Case of the Disappearing Bees

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

Weather

 Really cold
-5°/-19°

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

Current Security Status

[Secon Level 3](#)

[Wilson Hall Cafe](#)

Feature

Mush! Fermilab physicist races sled dogs



Fermilab physicist Jen Adelman-McCarthy's sled dogs pull her across the Main Ring on Wednesday, Jan. 14.

Jen Adelman-McCarthy likes to get dragged through the snow, and she's willing to let you watch.

During educational demonstrations in late January and February, the physicist, who specializes in data processing for CMS and astrophysics projects at Fermilab, will explain why lashing yourself to 55-pound dogs and whizzing past trees is fun.

"It's an adrenaline rush for everybody. Sometimes it's everything you can do to stay on the sled," she said of her dog sled racing hobby. "It's a break from everyday reality."

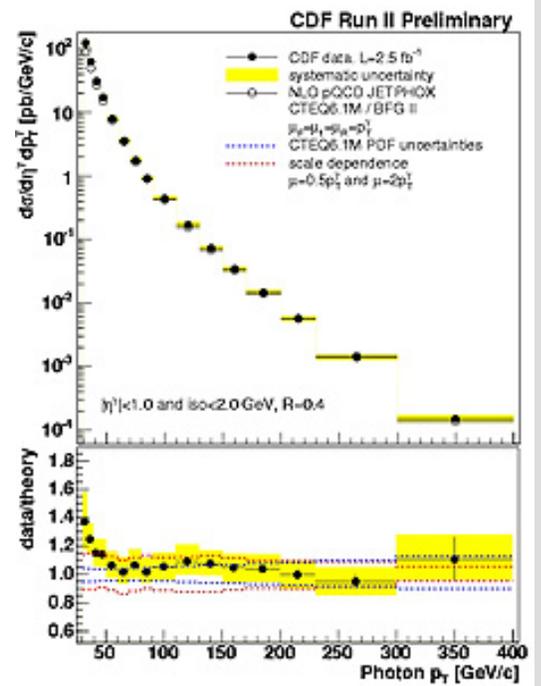
She took up the sport five years ago as a way to get her adopted, abused Siberian Husky, Behr, out from under the kitchen table and used to people. It worked better than she hoped. Behr now eagerly awaits public demonstrations where he can show off for "his fans" and sneak quick pets from watching children.

You can see him in action Feb. 12-16 at Chicago's [Snow Days in Grant Park](#) and Jan. 24-25 at [Morton Arboretum](#) in Lisle.

Adelman-McCarthy, along with the [Adopt-A-](#)

Fermilab Result of the Week

Light probes matter



The top plot shows the measured isolated prompt photon cross section as a function of transverse momentum of the photon. The bottom plot shows the data in comparison to the theoretical prediction. The fact that the ratio of data to theory is approximately one indicates that they agree.

Our understanding of light has advanced dramatically since the ancient Greeks proposed that it consisted of rays coming from the eyes. Since then, ideas about light have evolved considerably, converging in the 20th century to the theory of Quantum Electrodynamics (QED).

Today, physicists working at Fermilab on the CDF experiment study photon production to further their understanding of Quantum Chromodynamics (QCD). QCD is a theory that describes the interactions of quarks and gluons, which are bound together to form other particles, such as the protons used in collisions at the Tevatron. The production rate, or cross section, of high-energy photons can be used to measure the quark and gluon densities inside of the colliding protons. Another important reason to measure the photon cross section is that photons can resemble new physics signatures, such as supersymmetry, the Higgs boson or extra dimensions.

Thursday, Jan. 15

- Minnesota wild rice w/chicken
- Tuna melt on nine grain
- Italian meatloaf
- Chicken casserole
- Vegetarian salad wrap
- Assorted sliced pizza
- *Mandarin chicken

*Carb restricted alternative

[Wilson Hall Cafe menu](#)

Chez Leon

Thursday, Jan. 15

Dinner

- Chipotle shrimp w/ corn cakes
- Stuffed flank steak
- Lemon risotto
- Chocolate mousse pie

Wednesday, Jan. 21

Lunch

- Spiced cornish hens
- Broccoli & rice
- Berry tart

[Chez Leon menu](#)

Call x3524 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

[Husky foundation](#) and [Green Valley Dog Drivers](#), will demonstrate [race skills and equipment](#) as well as explain why they disagree with critics who call the sport harmful.

"There are thousands of years of breeding to make these dogs want to run and pull," she said. "Not letting them do what they are bred to do is more cruel." Nearly 90 percent of the dogs raced by Green Valley were adopted from homes that gave them up because of their boundless energy.

Recreational runs through Cook and DuPage county forest preserves, and occasionally Fermilab, give the dogs an outlet. Adelman-McCarthy uses the solitude to mentally work through computer code formatting problems.

Adelman-McCarthy and Behr focus on four-to-eight mile dog sled races and two-mile skijor races, where one dog pulls a cross-country skier. The duo averages 7 to 8.5 mph in those Midwestern events. They hope to build up to the mid-sized 25- to 55-mile races.

Professional teams can reach speeds of 30 mph in four-mile sprints and cover close to 100 miles a day in races such as the 1,000-plus mile [Alaskan Iditarod](#).

--Tona Kunz

Announcement

C2ST presents energy sustainability lecture Jan. 20

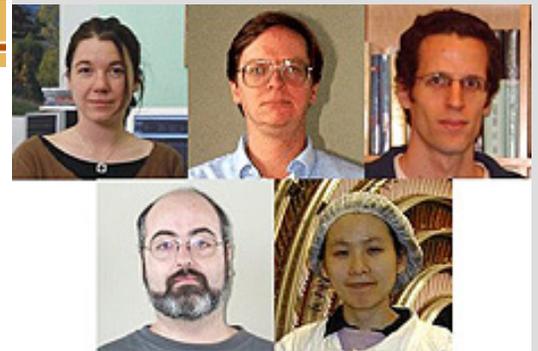
Exelon Chairman and CEO John Rowe will give a lecture on pursuing more sustainable energy on Jan. 20. Titled "How To Save the Planet and Keep the Lights ON," the lecture will include the five elements Rowe believes necessary for the next presidential administration's energy policy. He will discuss the role of science and technology in driving innovation to create new low-carbon energy solutions. Rowe will also explain Exelon's comprehensive plan to address climate change. Registration, with the lecture to follow, will take place at 5:30 p.m. at the Palmer House in the Hilton Adams Ballroom at 17 E. Monroe, Chicago. The program is free to C2ST members and teachers and students with an ID. Admission for all other audiences is \$15 on a first-come, first-serve basis. To RSVP, e-mail info@c2st.org or call (312) 503-0891. Visit www.c2st.org for more information.

The production of "prompt" photons (as opposed to those produced from the decay of other particles) at the Tevatron is an important probe of the properties of QCD. This is because photons are easy to identify, their energy is well measured, and the theoretical predictions involving the QED interaction of the photon are reliable. However, when looking at prompt photons, scientists are challenged by a large source of background events. Some particles (π^0 and η mesons) can decay into photons, but they are usually produced together with many other particles.

In order to manage these background events, physicists only select events where energy deposited around the photon candidate is small. In other words, they require that the photon is isolated in the detector. In addition, the isolation distribution is used to distinguish, on average, between prompt and decay photons. This provides a measurement of the purity of prompt photons in the data sample.

Using these methods, CDF physicists have recently made a measurement of the isolated prompt photon cross section using 2.5 inverse femtobarns of data. The results were compared with the theoretical predictions of perturbative QCD and the data agreed well with our current best understanding of QCD.

[Learn more](#)



Top: Carolina Deluca, IFAE-Barcelon; Raymond Culbertson, Fermilab; and Sebastian Grinstein, IFAE-Barcelona. Bottom: Mario Martinez-Perez, IFAE-Barcelona; and Shin-Shan Yu, Fermilab.

-- Craig Group

Accelerator Update

In the News

Physics lab aids bird conservation effort

From *symmetrybreaking*, Jan. 14, 2009

While experimenters at Fermilab track the flight of subatomic particles from collisions in three-story detectors along the Tevatron accelerator ring, nature lovers hover above them tracking the health of American bird populations.

Members of area Audubon societies, the Chicago Wilderness organization, and other bird enthusiasts migrated to the 6800-acre laboratory 40 miles outside of Chicago on Dec. 20 for the annual Christmas bird count.

Similar teams through North and South America conducted counts in December and January. About 50,000 volunteers at 2000 sites, including several in Illinois, make up the North American team. The count allows avian experts to get a record of bird migration and population trends that can help tell the health of a species and whether actions are needed to prevent a specific species from joining the endangered animals list.

The tradition started in December 1900, when Frank Chapman, an early member of the Audubon Society, challenged people to replace the bird hunting Christmas tradition with one of bird counting.

[Read more](#)

In the News

Do the maths

From *Times Online*, Jan. 14, 2009

Experts say we're getting worse at maths and science. But now we have shiny new labs and cutting-edge teaching methods, were we really better off in the past? John Cornwell joins two leading scientists at their former schools to find out

"Five out of six applicants I interviewed recently for Cambridge entrance for engineering couldn't do a simple maths calculation: two to the power of 10." The tense, fast-talking professor has been complaining like this since we left Cambridge for Birmingham. "That's why," he goes on, "students doing university science and engineering spend their first and even second

Jan. 12-14

- Two stores provided ~22.5 hours of luminosity
- TeV store 6718 lost to quench
- Diagnostics installed on KRF5
- Linac suffers from dump vacuum problems

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

Travel Update

[Changes in U.S. admission procedure](#)

Latest Announcements

[ACU bill pay demonstration Jan. 29](#)

[Have a safe day!](#)

[Register now for Fermilab Open House Jan. 17](#)

[Weekly Time Sheets are due on Friday](#)

[International Folk Dancing, Jan. 15 in Ramsey Auditorium](#)

[Outlook 2007 New Features classes scheduled Jan. 15 and Feb. 3](#)

[Barn Dance Jan. 18](#)

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

[Conflict Management & Negotiation Skills class being offered Feb.3](#)

[PowerPoint 2007: New Features class being offered Feb. 3](#)

[Facilitating Meetings That Work class being offered Feb. 4](#)

[Word 2007: New Features class being offered Feb. 4](#)

[Excel 2007: New Features class being offered Feb. 4](#)

[Interpersonal Communication Skills class being offered Feb. 5](#)

[Submit an announcement](#)

years catching up on the maths my generation did at school.”

[Read more](#)

[Additional Activities](#)