

Fermilab Today

Calendar

Thursday, July 13

2:00 p.m. ILC Detector R&D Meeting - Hornet's Nest (WH-8X)

Speaker: W. Cooper, Fermilab

Title: ILC Vertex Detector Mechanics

2:30 p.m. Theoretical Physics Seminar - Curia II

Speaker: H. Boos, Universität Siegen

Title: Inclusive Semileptonic B Decays in Soft-Collinear Effective Theory

3:30 p.m. DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

4:00 p.m. Accelerator Physics and Technology Seminar - Curia II

Speaker: D. McGinnis, Fermilab

Title: Introduction to Radio Frequency Fundamentals for Particle Accelerators – Part III

Friday, July 14

3:30 p.m. DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

4:00 p.m. Joint Experimental Theoretical Physics Seminar - Curia II (note location)

Speaker: P. Mackenzie, Fermilab

Title: Quark Masses, Coupling Constants, and the CKM Matrix from Lattice QCD

8:00 p.m. Fermilab International Film Society presents *A Face in the Crowd* in the Auditorium

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

Weather



Areas of Fog 89°/67°

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

Thursday, July 13

-Southwestern Chicken Tortilla

-Philly Style Cheese Steak

Freeland wins scholarship to balance career, family



The scholarship, a one-year award of up to \$45,000 which can be used toward dependent care, salary, travel, equipment, and tuition and fees, will allow Freeland to focus full-time on research.

Elizabeth Freeland, a visitor in the Fermilab Theoretical Physics Department, has been awarded the 2006 M. Hildred Blewett Scholarship for Women in Physics, by the American Physical Society's Committee on the Status of Women in Physics. Freeland, working on lattice gauge theory, is an Adjunct Assistant Professor at the School of the Art Institute of Chicago and the mother of two young children. The Blewett Scholarship specifically addresses the challenge of balancing career and family for women physicists.

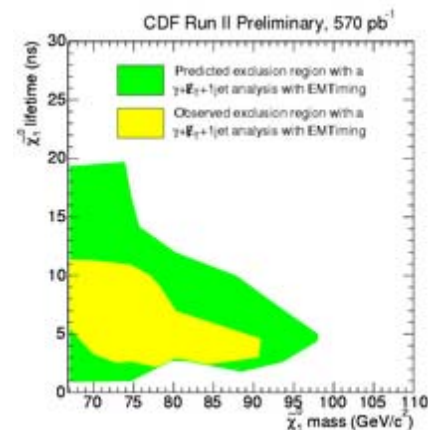
The award originates in a bequest from M. Hildred Blewett, a particle accelerator physicist who died in 2004. Ms. Blewett recognized the many obstacles faced by women who have interrupted their research careers for family reasons. [Freeland](#) has relocated twice to follow her husband's physics research, while raising two children, teaching part-time, and re-training from her original focus in condensed matter physics. She received her PhD from Johns Hopkins in 1996.

"It's very exciting for me to have received the Blewett scholarship," Freeland says. "The funds will be very useful during this last year that my family has a child in full-time daycare. I'm glad that Dr. Blewett

Thursday, July 13, 2006

Fermilab Result of the Week

Looking for Delayed Photons



With the newly installed EMTiming system at CDF it is now possible to look for photons that arrive even a few nanoseconds late into the detector. This allows physicists to search for an exotic long-lived, heavy particle called a "neutralino," which may explain dark matter and unite gravity with the other forces. There is no evidence for this process with the current data set, so limits are set on the neutralino production. The plot shows the excluded region as a function of the neutralino mass and lifetimes. The green area is the expected limit while the yellow area corresponds to the actual exclusion region with the observed data.

Many of the great discoveries in particle physics have come from new devices that give experimenters a new window to unsearched regions. In 2005, the CDF experiment installed the EMTiming system, which measures the precise time when energy from photons is deposited in the electromagnetic (EM) calorimeter. Now for the first time at the Tevatron, scientists have sensitivity to neutral heavy particles that have long lifetimes and travel significant distances in the detector before decaying to a photon and something else. This permits physicists to identify "delayed photons," photons which arrive a few nanoseconds (a billionth of a second) later than expected from Standard Model interactions.

Such particles are predicted by various theories beyond the Standard Model, in particular by Gauge Mediated Supersymmetry Breaking (GMSB) models that unify gravity with the electromagnetic,

- Chicken Pot Pie
- Tomato Basil Chicken Parmesan
- Southwestern Turkey Wrap
- Assorted Slice Pizza
- Marinated Grilled Chicken Cesar Salads

[Wilson Hall Cafe Menu](#)

Chez Leon

Thursday, July 13

Dinner

BOOKED

Wednesday, July 19

Lunch

- Marinated Flank Steak w/Mushrooms and Pea Pods
- Jasmine Rice
- Lemon Cheesecake

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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saw the need for such a scholarship and hope that the physics community as a whole will continue to progress in its ability to understand and welcome people with non-traditional career paths."

The scholarship, a one-year award of up to \$45,000 which can be used toward dependent care, salary, travel, equipment, and tuition and fees, will allow Freeland to focus full-time on research. "I'm really looking forward to this next year," she says. "Working with the people at Fermilab and especially the theoretical physics department and the lattice QCD collaboration is enjoyable and a great experience."

--Mike Perricone

You can read more about Elizabeth Freeland in the [March issue](#) of *symmetry* magazine. Details on the Blewett Scholarship can be found [here](#).

Chase the Moon on July 29



About 500 people will ride in this year's event. (Click on image for larger version.)

Join Fox Valley's late-night bike ride on Saturday, July 29, and travel at your own pace under the full moon. Participants will get to ride on typically limited access roads at Fermilab, and enjoy a healthy breakfast afterwards. The ride starts at Marmion Academy (at Farnsworth and Butterfield) at 12:00 a.m., and continues to Fermilab via Kirk Road, which will be converted to a luminary riding path for the event. Pre-ride festivities start at 9:00 p.m. Click [here](#) for more information.

In Memoriam

weak, and strong forces. In GMSB, a new particle called a "neutralino" decays into a photon and a "gravitino", which escapes detection. Observation of such events would not only be the first evidence of gravitationally interacting particles, but would also provide a strong clue in understanding the mysterious dark matter that dominates the universe.

The CDF experiment has recently completed its first search for delayed photons using the first year of data with the new EMTiming system. While the current data is consistent with the Standard Model expectations, limits on the neutralino mass and life time (see figure) are already among the worlds most sensitive. According to Tevatron luminosity projections, the next couple of years will be exciting as the analysis increases its chance for discovery. News of late-arriving photons, as a hallmark of new physics, may in fact come sooner rather than later.



From left: Peter Wagner of Texas A&M Univ.; David Toback of Texas A&M Univ.; Vyacheslav Krutelyov of UC Santa Barbara; Max Goncharov of Texas A&M Univ.; and Eunsin Lee of Texas A&M Univ.

[Result of the Week Archive](#)

Accelerator Update

July 10 -12

- Two stores provided 33 hours and 4 minutes of luminosity
 - NuMI still off
 - Accumulator has quadrupole problem
 - Store 4821 aborted
 - D0 might require 2 shift access
- Thursday

[Read the Current Accelerator Update](#)

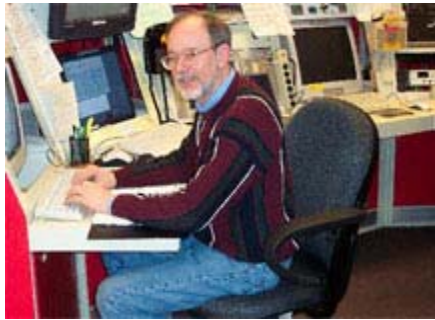
[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

We've got answers!

Have you ever struggled navigating the online Fermilab Personnel Policies? Have you thought "why isn't it easier to find



Richard P. Smith

Fermilab employee Rich Smith died Tuesday, July 11, after two and a half years of a courageous struggle with cancer. He has worked at Fermilab since 1983. All who worked with Rich appreciated his understanding of physics and engineering and his sense of responsibility to others and to the laboratory's physics goals. His friendship, dedication and ability to solve problems will be missed. Visitation will take place today, July 13, from 5:00 p.m. to 9:00 p.m. and a funeral will be held Friday at 10:30 a.m. at the Beidelman-Kunsch Funeral Home at 24021 W. Royal Worlington Drive (Route 59) in Naperville. There will also be a memorial service on Friday, July 14, at 7:00 p.m. at the Beidelman-Kunsch Funeral Home at 516 S. Washington Street in Naperville.

In the News

***The New Scientist,* July 11, 2006:**

Earliest black holes bent the laws of physics

Black holes in the early universe may have circumvented a law of physics to grow rapidly to colossal size. The finding could solve a longstanding puzzle over why such massive objects appeared so soon after the universe began.

The new analysis, by Marta Volonteri and Martin Rees, both at the University of Cambridge, UK, ties up all the important factors involved in the growth of a black hole and concludes rapid growth is possible. This might be because the black hole "swallows" the radiation generated as the hole gobbles up the matter around it, preventing a destructive explosion.

[Read More](#)

what I am looking for?" In pursuit of continuous improvement, Employee Relations developed an online [Human Resources Answer Book](#) located on the [Employee Relations homepage](#). The purpose is to guide you through various HR topics utilizing process maps with links to forms, policies, and definitions. The Answer Book is a "living document" which will change in accordance with best HR practices, applicable regulations or policy changes. If you find additional HR processes that you would like to see mapped out or have suggestions for improvements to the website, please fill out the feedback survey located on the Answer Book website.

New issue of *symmetry* online

You can check out the latest issue of *symmetry* magazine [here](#).

The Midsummer Theatre Troupe - Much Ado About Nothing

The Midsummer Theatre Troupe will give free performances of Shakespeare's 'Much Ado About Nothing' in Central Park in downtown Naperville on Friday, July 14, at 7 p.m. (bench seating is available at Central Park); at Knoch Knolls in Naperville on Friday, July 28, at 7 p.m. (bring chairs); Island Park in Geneva on Saturday, July 15, at 6:30 p.m. (bring chairs); and Peg Bond Center Stage in Batavia on Sunday, July 23, at 6 p.m. (bring chairs). For \$10.00, you can watch the production at Cantigny Memorial Park in Wheaton on Sunday, July 16. (bring chairs. For ticket information, call 630-260-8164) and Walter Payton's Roundhouse in Aurora on July 18, July 25 and August 1.

[Upcoming Activities](#)