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Furlough Information

New furlough information, including an [up-to-date](#) Q&A section, appears on the [furlough Web pages](#) daily.

Calendar

Monday, Feb. 25
2:30 p.m.

[Theoretical Astrophysics Seminar](#) - Curia II

Speaker: Mark Vagins
University of California, Irvine
Title: GADZOOKS! A Potential Super-Kamiokande Upgrade
3:30 p.m.

DIRECTOR'S COFFEE
BREAK -- 2nd Flr X-Over
4:00 p.m.

All Experimenters' Meeting --
Curia II

Tuesday, Feb. 26
2:30 p.m.

[Special Theoretical Physics Seminar](#) - Curia II

Speaker: G. Gabadadze,
University of Minnesota
Title: Infinite Volume Extra
Dimensions
3:30 p.m.

DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
THERE WILL BE NO
ACCELERATOR PHYSICS
AND TECHNOLOGY
SEMINAR TODAY

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

Weather



Rain/Snow
37°/24°

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

Current Security Status

Fermilab Press Release

Crystal bells stay silent in CDMS dark matter search



Inspired by his brother Erik's research on dark matter, musician Karl Ramberg built a musical model of the CDMS detector, in collaboration with CDMS scientists. [Click on the image to watch the five-minute video on YouTube.](#)

Scientists of the Cryogenic Dark Matter Search experiment today announced that they have regained the lead in the worldwide race to find the particles that make up dark matter. The CDMS experiment, conducted a half-mile underground in a mine in Soudan, Minn., again sets the world's best constraints on the properties of dark matter candidates.

"With our new result we are leapfrogging the competition," said Blas Cabrera of Stanford University, co-spokesperson of the CDMS experiment, for which Fermilab hosts the project management. "We have achieved the world's most stringent limits on how often dark matter particles interact with ordinary matter and how heavy they are, in particular in the theoretically favored mass range of more than 40 times the proton mass. Our experiment is now sensitive enough to hear WIMPs even if they ring the 'bells' of our crystal germanium detector only twice a year. So far, we have heard nothing."

WIMPs, or weakly interacting massive particles, are leading candidates for the building blocks of dark matter, which accounts for 85 percent of the entire mass of the universe. Hundreds of billions of WIMPs may have passed through your body as you read these sentences.

"We were disappointed about not seeing

Safety Tip of the Week

Tips from Minnesota colleagues

Most of us at Fermilab have grown tired of repeated snow storms and cold blasts. How do our colleagues from Minnesota stand it? This week, we talked with three Fermilab folks with ties to the state that houses the coldest town in the continental United States. They offer a few tips and observations. They also remind you to look past the cold and enjoy the pristine beauty and invigorating outdoor opportunities afforded by a frigid wasteland.

Alec Habig, teaches at UM-Duluth and works on the NOvA and MINOS experiments. He notes that traffic works better in Minnesota where drivers try to keep a consistent speed compatible with other vehicles. Around here people drive too fast in snow, risking sliding off the road; or drive too slow, risking a rear-end collision.



Minnesotans also take greater pains to limit the amount of ice and snow they track into buildings that can ultimately create indoor slip hazards. Habig explains that they tend to perform the "Minnesota stomp" or remove their footwear at the door, often using a boot tray to hold melting snow.

Dennie Parzyck, Fermilab DOE site office representative, went to college in Winona and will retire to Minnesota in the near future. Parzyck notes that vehicles often get stranded during Minnesota's winters.



He recommends preparing for the worst. When traveling, pack a survival kit that includes a shovel, blanket, food, water, etc. Check ahead for road conditions and allow extra time.

Jen Adelman-McCarthy, grew up in Minnesota and works in Computing

[Secon Level 3](#)[Wilson Hall Cafe](#)**Monday, Feb. 25**

- not available

[Wilson Hall Cafe Menu](#)[Chez Leon](#)**Wednesday, Feb. 27****Lunch**

- Wild mushroom strudel
- Salad of field greens w/ tomatoes, cucumbers & onion
- Cold lemon soufflé

Thursday, Feb. 28**Dinner**

- Sancocho w/pastetobos
- Roast suckling pigs
- Chayote guisado
- Rice & pigeon peas
- Flan & tropical fruit

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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today@fnal.gov

WIMPs this time. But the absence of background in our sample shows the power of our detectors as we enter into very interesting territory," said CDMS co-spokesperson Bernard Sadoulet, of the University of California, Berkeley.

If they exist, WIMPs might interact with ordinary matter at rates similar to those of low-energy neutrinos, elusive subatomic particles discovered in 1956. But to account for all the dark matter in the universe and the gravitational pull it produces, WIMPs must have masses about a billion times larger than those of neutrinos. The CDMS collaboration found that if WIMPs have 100 times the mass of protons (about 100 GeV/c²) they collide with one kilogram of germanium less than a few times per year; otherwise, the CDMS experiment would have detected them.

"The nature of dark matter is one of the mysteries in particle physics and cosmology," said Dr. Dennis Kovar, Acting Associate Director for High Energy Physics in the U.S. Department of Energy's Office of Science. "Congratulations to the CDMS collaboration for improved sensitivity and a new limit in the search for dark matter."

The CDMS experiment is located in the Soudan Underground Laboratory, shielded from cosmic rays and other particles that could mimic the signals expected from dark matter particles. Scientists operate the ultrasensitive CDMS detectors under clean-room conditions at a temperature of about 40 millikelvin, close to absolute zero. Physicists expect that WIMPs, if they exist, travel right through ordinary matter, rarely leaving a trace. If WIMPs crossed the CDMS detector, occasionally one of the WIMPs would hit a germanium nucleus. Like a hammer hitting a bell, the collision would create vibrations of the detector's crystal grid, which scientists could detect. Not having observed such signals, the CDMS experiment set limits on the properties of WIMPs.

"Observations made with telescopes have repeatedly shown that dark matter exists. It is the stuff that holds together all cosmic structures, including our own Milky Way. The observation of WIMPs would finally reveal the underlying nature of this dark matter, which plays such a crucial role in the formation of galaxies and the evolution of our universe," said Joseph Dehmer, director of the Division of Physics for the National Science Foundation.

Division's Experimental Astrophysics Group. She loves outdoor winter activities and has advice about dressing properly for cold weather. Adelman advises layering up so you can adjust the amount of insulation depending on conditions and activity level. The layer in contact with your skin should contain a wicking material like polypropylene or fleece. You should wear wind-and waterproof mittens with fleece on the inside. Lately, she has been wearing ice cleats that strap over footwear to assure good traction on icy surfaces.

[Safety Tip of the Week Archive](#)[Announcements](#)[Have a safe day!](#)**Brown Bag Seminar on diabetes**

The Wellness Works committee presents a Brown Bag Seminar on diabetes from noon to 1 p.m. Wednesday, Feb. 27, in One West. Betul Hatipoglu, assistant professor of medicine at the University of Illinois Medical Center at Chicago will speak on the latest advances in diabetes. Hatipoglu also serves as the medical director of the Pancreas and Islet Transplantation Program at the university.

FermiGrid classes starting Feb. 26

FermiGrid 201:Scripting and Running Grid Jobs course serves as an introductory course for grid computing.

[For more information or to enroll](#)

FermiGrid 202:Grid Storage Access course includes lab time.

[For more information or to enroll](#)

FermiGrid 101 "Brown Bag" seminar to be held on Thursday, March 6, from noon to 1 p.m. in Curia II.

[For more information](#)

Children's Summer Day Camp registration due

Registration forms for the onsite day camp for children of Fermilab employees are due by 5 p.m. Feb. 28. The camp for ages 7 through 12 consists of three separate three-week sessions: session I: June 16 - July 3, session II: July 7- July 25, session III: July 28 - August 15. The camp, held in the lower level of the

[Read more](#)**In the News****Zimmer, other leaders advocate for basic science research funding****From *The University of Chicago Chronicle*, Feb. 21, 2008**

President Zimmer and a coalition of nearly a dozen industry and university leaders visited Capitol Hill on Tuesday, Feb. 12 to advocate funding increases for basic science research, including the National Laboratory System.

On the coalition's agenda was both a \$500 million supplemental appropriation in FY2008 for the DOE Office of Science and the National Science Foundation, and for a larger FY2009 budget for the agencies.

The coalition represented the Association of American Universities and the National Association of State Universities and Land-Grant Colleges.

[Read more](#)**In the News****Vector inflation points the way****From *PhysicsWorld.com*, Feb. 20, 2008**

You've got to love physics humour. To mark Valentine's day last week, Fermilab's in-house magazine ran a spoof personal ad that stated: "mature paradigm with firm observational support seeks a fundamental theory in which to be embedded". It was referring to inflation — a period of exponential expansion thought to have taken place 10–35 s after the big bang, which, although able to account for the large-scale appearance of the universe, lacks a firm theoretical footing.

By chance, that same day three theorists posted a paper on the arXiv preprint server that could help remedy this situation.

[Read more](#)

Kuhn Barn in the village, runs from 7:30 a.m. to 5:30 p.m. You may choose any or all of the sessions. The fee for each day camp session is \$295 per camper. A \$125 deposit per session per camper must accompany the registration form. Registrations will be accepted at the Recreation Office, M.S. 126. Applications go into a lottery held on Feb. 29. An information booklet and registration form can be found on the Recreation Website.

Employee art show - applications due Feb. 25

"Hidden Talents: Fermilab Employee Art Show" will be on display, March 19 - May 14, 2008. Intent applications are due Feb. 25, and forms are available in the Art Gallery on the stand near Curia II or on the [Web](#).

Adobe Acrobat 7.0 Professional: Advanced - Feb. 28, 2008

Learn to convert technical documents to PDF files, enhance and control PDF content accessibility, customize PDF documents for interactive use only and prepare PDFs for commercial printing. [Learn more and enroll](#)

Kyuki-Do class begins Feb. 25

Kyuki-Do, a martial art similar to Taekwondo, leads to a practical method of self-defense. It teaches balance, power and grace. Classes are held for six weeks on Monday and Wednesday from 5-6 p.m. at the Recreation Facility. You must register through the Recreation Office and have a Recreation Facility membership.

Applications due for 2008 CERN-Fermilab Hadron Collider school

Applications for the 2008 CERN-Fermilab Hadron Collider Physics Summer School are due Feb. 29. The school takes place August 12-22, 2008, at Fermilab, and focuses on training advanced graduate students and young postdocs. Both theorists and experimentalists should apply. The list of lectures and lecturers has been posted at the [school Web site](#). For more information, visit: <http://hcpss.fnal.gov/hcpss08/>.

[Additional Activities](#)