

## Calendar

### Mon., January 22

**2:30 p.m.** Particle

Astrophysics Seminar - Curia II  
 Speaker: F. Ferrer, Case  
 Western Reserve University  
 Title: Indirect Detection of Light  
 Neutralino Dark Matter

**3:30 p.m.** Director's Coffee  
 Break - 2nd floor crossover

**4:00 p.m.** All Experimenters'  
 Meeting - Curia II  
 Special Topics: Tevatron  
 Separator Spark History;  
 MI-8 Collimator Study

### Tue., January 23

**11:00 a.m.** Academic Lecture  
 Series - 1 West

Speaker: E. Lunghi, Fermilab  
 Title: Course 3, Part 1 - Flavor  
 Physics In and Beyond the  
 SM; CP Violation

**11:00 a.m.** Computing  
 Techniques Seminar - FCC1  
 Speaker: D. Evans, Fermilab  
 Title: CMS ProdAgent and  
 Production Infrastructure

**2:30 p.m.** Particle  
 Astrophysics Seminar - (NOTE  
 DATE) - Curia II

Speaker: J. Weller, University  
 College London  
 Title: Cosmology with Sunyaev-  
 Zel'dovich Galaxy Cluster  
 Counts

**3:30 p.m.** Director's Coffee  
 Break - 2nd floor crossover

**4:00 p.m.** Accelerator Physics  
 and Technology Seminar - 1  
 West

Speaker: Y. Sato, University of  
 Indiana

Title: Electron-Proton  
 Dynamics for Long Proton  
 Bunches in High Intensity  
 Proton Rings

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

## Weather

## Feature Story

### \$50,000 suitcases fly to CERN



Starting in spring, John Conway will make four more trips across the Atlantic. In all, he will hand-carry \$4 million worth of CMS half-disks to build the final version of the pixel tracker.

Last Wednesday, Fermilab physicists John Conway and Lalith Perera loaded a stash of expensive electronics into two boxy grey briefcases, crossed their fingers, and boarded a plane at O'Hare. They were bound for Switzerland with \$50,000 worth of equipment in carry-on luggage. "Had we dropped the cases, I think I would have not returned to Fermilab but just kept on going," joked Conway.

The men's briefcases held silicon plates with over 100,000 delicate electrical connections arranged in half-disks, destined to rest near the heart of the CMS detector. The disks will form a prototype for the pixel detector; tracking particles flying out at the shallowest angles, and sorting debris from proton-proton collisions during the LHC's pilot run in November.

But before any of that could start, Fermilab's CMS group had to think of a way to get the four pounds of \$50,000 electronics from Batavia to Geneva. The plan was to fly to Zurich and rent a car. But, of course, there was a snag: The complicated paperwork they had filled out only applied in Geneva--not Zurich. Instead of driving, they would need a last-minute connecting flight.

A security guard in Zurich agreed to watch the valuable cases at the airport while Conway and Perera took the rest of their bags through

## Safety Tip of the Week

### Age limits



"Old age ain't no place for sissies"  
 --Henry Louis Mencken (1880-1956)

As we age, it can be a challenge to monitor our changing abilities and redefine our work limits. Here are three areas where the impacts of advancing age can adversely affect your ability to work safely.

**Balance** - The body's balance organ becomes less sensitive and motions are less fluid. This can increase the risk of slips, trips and falls. Work processes should be modified to prevent slippery surfaces, elevation changes, awkward postures, and long reaches. Workers should engage in lower-body strength exercises, especially those that work on one leg at a time.

**Flexibility and strength** - Collagen breaks down with age, especially in the calves, hamstrings, lower back and front of shoulders. Muscle mass declines as well. These changes can contribute to strains and sprains, slips, trips and falls, and driving accidents (i.e., difficulty turning neck to see). Work processes should be modified to reduce required effort. Mechanical and powered devices should be provided for lifting and moving tasks. Workers should maintain proper posture, change position frequently, and participate in a stretching program.

**Attention and vision** - The ability to switch between tasks and multi-tasking declines.

**Snow Flurries 29°/18°**[Extended Forecast](#)[Weather at Fermilab](#)[Current Security Status](#)[Secon Level 3](#)[Wilson Hall Cafe](#)**Monday, January 22**[Wilson Hall Cafe Menu](#)[Chez Leon](#)**Wednesday, January 24  
Lunch**

Grilled Salmon Fillet with  
Scallion Sauce  
Winter Vegetable Medley  
Mocha Profiteroles

**Thursday, January 25  
Dinner**

Bacon Wrapped Sea Scallops  
Ancho Fired Pork Tenderloin  
Sweet Potato Stew  
Rum Raisin Soufflé

[Chez Leon Menu](#)

Call x4598 to make your  
reservation.

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the normal screening process. On the secure side, they opened the cases, carefully removed the delicate inner-boxes, and sent them through the x-ray machine. "They peppered us with questions like 'What the heck are these things?' and 'What is the experiment at CERN for?'" said Conway, who will make the trek four more times--each time with much more elaborate, final versions of the disks for insertion after the LHC's pilot run. "These gigantic and complicated detectors are going to operate soon, as will the accelerator," said Conway, "and the really cool thing is that we really do not know what lies ahead, or what discoveries we will make."

*--Siri Steiner*

You can read more about Conway's recent adventure [here](#).

### Special Announcement

## Tevatron keeps humming

For the fourth week in a row the Tevatron has set a record. On Thursday evening at 6:00 p. m., the Tevatron achieved a peak luminosity record of 277.6 E30. Congratulations.

### In the News

## Scientific American, January 19, 2007:

### The Triangular Universe: Instead of string theory, four-dimensional tetrahedrons

Imagine a landscape composed of microscopic triangular structures that constantly rearrange themselves into new patterns. Seen from afar, the landscape looks perfectly smooth, but up close it is a churning cauldron of strange geometries. This deceptively simple model is at the heart of a new theory called causal dynamical triangulation (CDT), which has emerged as a promising approach to solving the most vexing problem in physics--unifying the laws of gravity with those of quantum mechanics.

For more than 20 years, the leading contender in the quest for unification has been string theory, which posits that the fundamental particles and forces are actually minuscule strings of energy. But some scientists say this theory is misguided because it sets the strings against a fixed background; a better model, they argue, would generate not only particles and forces but also the spacetime they inhabit. In the 1980s and 1990s these researchers

Near vision diminishes, while the need for illumination increases. These changes can contribute to increased slips, trips and falls, driving accidents and strains and sprains. Work processes should include adequate illumination and contrasting colors. Clutter should also be minimized around control panels and computer screens.

### Safety Tip of the Week Archive

### Accelerator Update

#### January 17 - 19

- Three stores provided 39 hours and 6 minutes of luminosity
- NuMI LCW system leak not in NuMI tunnels
- TeV ramp lost due to lead flow - no quench
- Store 5189 set record with an initial luminosity of 277.57E30

[Read the Current Accelerator Update](#)[Read the Early Bird Report](#)[View the Tevatron Luminosity Charts](#)

### Announcements

#### Ask-a-Scientist

Fermilab's Ask-a-Scientist program is looking for volunteers to discuss once or twice a year physics with the public. The program takes place on the 15th floor of Wilson Hall on select Sunday afternoons. Contact Peter Garbincius ([garbincius@fnal.gov](mailto:garbincius@fnal.gov)) for more details; read more about the program [here](#).

#### URA Thesis Award

Fermilab and Universities Research Association are now accepting submissions for the tenth annual URA Thesis Award Competition. The award recognizes the most outstanding thesis related to work performed at Fermilab or in collaboration with Fermilab scientists and must have been completed in the 2006 calendar year. Nominations must be submitted to Richard Tesarek ([tesarek@fnal.gov](mailto:tesarek@fnal.gov)) by March 1, 2007 and should include a letter supporting the merits of the thesis being nominated. Selection will be made by the Thesis Awards Committee. Each thesis will be judged on clarity of presentation, originality and physics content. To qualify, the thesis must have been submitted as partial fulfillment of the Ph.D requirements, be written in English, and it must have been submitted in electronic form to the Fermilab Publications Office in accordance with Fermilab policy. The recipient of the award will receive a certificate of recognition and a check for \$3000.

[More Information](#)

developed loop quantum gravity, which describes space as a network of tiny volumes only  $10^{-33}$  centimeter across.

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