

## Furlough Information

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

## Layoff Information

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

## Calendar

### Thursday, April 17

THERE WILL BE NO PHYSICS AND DETECTOR SEMINAR THIS WEEK  
**2:30 p.m.**

#### [Theoretical Physics Seminar](#) -

Curia II

Speaker: S. Chang, New York University

Title: When Worlds Collide: The Cosmological Observables of Pre-Inflationary Bubble Collisions  
**3:30 p.m.**

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

### Friday, April 18

**11:30 a.m.**

Traffic Safety Brown Bag Seminar - One West

Speaker: E. Barsotti, League of Illinois Bicyclists

Title: Bicycle Commuting – and Sharing the Road Tips for Both Cyclists and Motorists  
**3:30 p.m.**

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

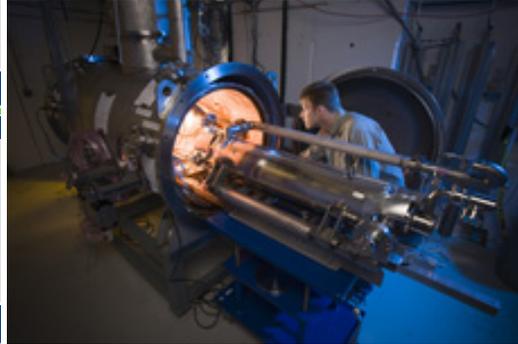
**4 p.m.**

[Joint Experimental-Theoretical Physics Seminar](#) - One West

Speaker: U. Heintz, Boston University

## Feature

### Fermilab reaches milestone with successful cavity test



Andy Hocker inserts a dressed 3.9 GHz cavity into the Horizontal Test Stand. The cavity, created at Fermilab, was successfully tested last week.

A successful test of a dressed 3.9 GHz superconducting radiofrequency cavity last week put Fermilab among an elite group that can produce cutting-edge, high-powered accelerator components.

Fermilab employees need to test three more cavities before they can assemble a cryomodule for shipment to DESY for use in the laboratory's free-electron laser accelerator.

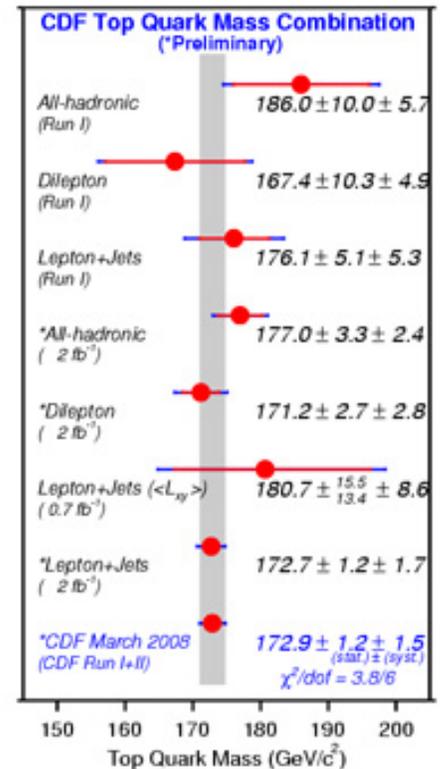
The collaboration with DESY marks Fermilab's first foray into production of these types of cavities, which store radio-frequency energy to power particles passing through the cryomodule. The technology supports the next generation of accelerators for HEP and other industries.

"Designs were tweaked. It is a learning process, but we're finally over the learning curve," said Andy Hocker, co-leader of the Horizontal Test Stand. "We can produce these and build up a nice niche market."

A team of Fermilab scientists, led by Elvin Harms and Helen Edwards, worked for several years to build and test the 3.9 GHz cavities. Initial testing of the cavities involves dipping them in liquid helium and supplying a low-power RF source. Cavities that reach the needed accelerating field get sealed into a helium vessel and outfitted, or dressed, with auxiliary components necessary for high-power operation in an accelerator. These components include input couplers to feed RF

## Fermilab Result of the Week

### Top-notch Tevatron precision



This plot shows the seven top mass measurements at CDF included in the mass combination, as well as the final combined CDF result.

Just 13 years ago, scientists at CDF and DZero announced the discovery of the top quark. At that time, the measurement of its mass at CDF was 176 GeV/c<sup>2</sup> with a relative uncertainty of about 7.3 percent. The most recent measurements of the top quark mass from CDF use 30 times as much data and significantly more sophisticated algorithms to extract as much information as possible from candidate top quark events. The most recent result from CDF combines measurements from many decay channels resulting in a top mass of 172.9 GeV/c<sup>2</sup> with a relative uncertainty of 1.1 percent. This corresponds to almost a factor of seven improvement on the total uncertainty, better than what one would expect from the added statistical power of more data.

A precision measurement of the top quark mass is important because it relates to the mass of the last remaining missing piece of the Standard Model, the theorized Higgs

Title: Precision Top Measurements from DZero  
**8 p.m.**

[Fermilab International Film Society](#) - Auditorium

Tickets: Adults \$5

Title: [Baisers volés \(Stolen Kisses\)](#)

**Saturday, April 19  
 8 p.m.**

[Fermilab Arts Series](#) -

Auditorium

Tickets: \$29/\$15

Barrage: High Strung

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

## Weather



Cloudy 69°/49°

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secon Level 3](#)

## Wilson Hall Cafe

**Thursday, April 17**

- Southwestern chicken tortilla
- Philly style cheese steak
- \*Garlic herb roasted pork
- Smart cuisine: Southwestern grilled chicken
- Southwestern turkey wrap
- Assorted pizza slices
- \*Marinated grilled chicken
- Caesar salads

**\*Carb restricted alternative**

[Wilson Hall Cafe menu](#)

## Chez Leon

power into the cavity and tuners to adjust the cavity's resonant frequency.

On Friday, the first dressed cavity was cooled to 1.8 Kelvin in Fermilab's Horizontal Test Stand and reached an accelerating field of 24 MV/m, well beyond the planned operating point of 14 MV/m.

Although scientists will use these cavities in DESY's free-electron laser, cavity technology has wider applications. "A lot of what we've learned along the way is applicable to building Project X-style or ILC-style cavities," Hocker said.

-- *Rhianna Wisniewski*

## Milestone

## Hans Jensen wraps up Fermilab career



Hans Jensen

"Send me a postcard, drop me a line... When I'm 64." -- *The Beatles*

Once music beckoned Hans Jensen to party, now it rallies for retirement.

"For someone of The Beatles' generation, the age of 64, which I'm

approaching, makes you think," Jensen said. Think of traveling, connecting with family and reading science papers put aside while building detectors for the world's highest-energy colliders, Jensen said. So he will shift from cutting-edge research to other activities on April 30.

But, he'll keep a computer at Fermilab for occasional work on CMS's start up and follow CDF's final foray into Higgs boson territory.

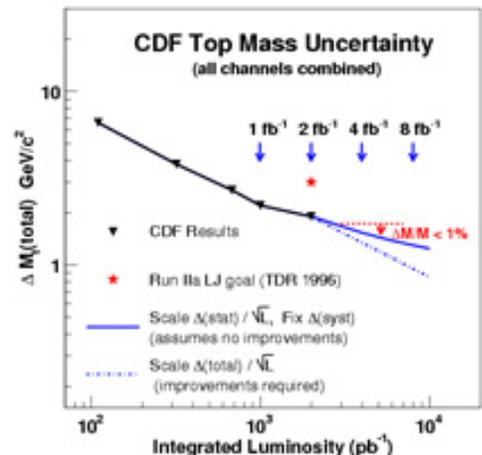
"It's obvious that it is going to be a very exciting time," Jensen said. "I'm very curious about what breaks the electroweak symmetry, and I'll miss everything about Fermilab, so I don't want to sever all ties."

Jensen left CERN for Fermilab in 1979, attracted by the potential of the Tevatron. He helped design CDF, led the team assembling the central calorimeters and stayed with the experiment through its discovery of the top quark, a career highlight. Growing with the experiment allowed Jensen to participate in most aspects of the collaboration, building friendships and memories in the process.

boson. If and when scientists observe the Higgs boson, precise knowledge of the mass of the top quark will help test whether it is consistent with the Standard Model Higgs. If not, we would need new physics, such as supersymmetry, to make the picture consistent.

The CDF combination uses three Run I results and four new Run II results. The Run II analyses extract the top quark mass from the data using different types of top events or different measurement techniques. Increasing luminosities will continue to shrink statistical uncertainties and refinements to the analyses, and improved understanding of the detector may push down systematic uncertainties even further. New techniques sensitive to different types of detector calibrations and systematic uncertainties are emerging. The current Tevatron combined top quark mass measurement has an uncertainty of less than 1 percent, a truly top-notch benchmark for the Tevatron.

[Learn more](#)



This plot shows the trend in the total uncertainty on the top mass measurement at CDF as the integrated luminosity increases.

## Result of the Week Archive

## Accelerator Update

Bruce Worthel, author of Accelerator Update, is on furlough. Accelerator Update will resume next week.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

**Thursday, April 17****Dinner**

- Chicken coconut soup
- Shrimp curry
- Jasmine rice
- Cucumber, pepper, tomato & onion
- Hazelnut cake w/espresso ice cream

**Wednesday, April 23****Lunch**

- Chipotle shrimp on corn cakes
- Tropical fruit platter

[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/](http://www.fnal.gov/today/)

Send comments and suggestions to:

[today@fnal.gov](mailto:today@fnal.gov)

In 2005, he moved to CMS to serve as assistant project leader in assembling the detector's tracker outer barrel. Now, he helps man the LHC Remote Operations Center and act as an LHC Physics Center liaison.

"He was really wonderful to work with," said Lenny Spiegel, USCMS tracker project leader at Fermilab. "He is very calm and analytic. He has a good way of dealing with people - he comes across as a very senior scientist with old-fashioned manners. People were eager to work with him."

A luncheon for Hans will take place April 23 at Chez Leon. Registration required by April 18 through Carrie Farver x 8529 or [cfarver@fnal.gov](mailto:cfarver@fnal.gov).

-- Tona Kunz

**In the News****Reading tea leaves: Outlook for additional science funding**

From *AIP FYI*, April 16, 2008

Assessing the possibility of whether additional funding might be provided this year for the Department of Energy's Office of Science, National Science Foundation, and the National Institute of Standards and Technology's research programs is somewhat like reading tea leaves. A careful reading of statements made on Capitol Hill and by Bush Administration officials reveals that the possibility of such funding exists; determining the probability of that funding actually being provided is nearly impossible.

Of everything that has been said during the last few days, the most significant words were those of House Speaker Nancy Pelosi (D-CA) at a press conference last week. Speaker Pelosi was discussing a successful House vote to slow consideration of the Columbia Free Trade Agreement, described in one publication as perhaps the President's top legislative priority for the rest of his term. Pelosi said "the House took action today to reassert its authority to put, as a first priority for our country, addressing the economic insecurity of America's working families. We must focus first on the issue of jobs here at home."

[Read more](#)

**Announcements****[Have a safe day!](#)****Brown Bag Seminar - Sharing the Road**

A Brown Bag Seminar titled "Bicycle Commuting and Sharing the Road: Tips for both Cyclists and Motorists," will take place 11:30 a.m.-12:15 p.m. Friday, April 18, in One West. Ed Barsotti, executive director for the League of Illinois Bicyclists, will present information for cyclists and motorists about sharing the road and new laws for 2008. A discussion will focus on bicycle commuting and issues related to Fermilab employees. Barsotti will provide maps and safety information. A door-prize drawing will also take place.

**Deadline for 2008 Tollestrup Award nominations extended to Friday**

The Tollestrup Award Committee will accept nominations for the 2008 Tollestrup Award for postdoctoral research until Friday, April 18. The original date was publicized as April 15, but the e-mail address to submit materials was incorrect. Submit nominations and materials to [usersoffice@fnal.gov](mailto:usersoffice@fnal.gov).

**Blood drive April 22, 23**

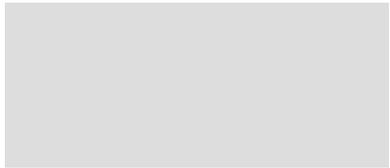
Mark your calendars. Heartland Blood Centers will conduct a Fermilab Blood Drive on April 22 and 23 from 8 a.m to 2 p.m. in the Wilson Hall Ground Floor NE Training Room. Schedule appointments on the [Web](#) or call Diana at x3771 or Margie at x5680. More information available [here](#).

**Computer programming course April 24**

"C++ Templates and Template Metaprogramming," the third course in the current series of "Selected Topics in Computer Programming," will occur on Thursday, April 24. Aimed at programmers with C++ experience, it will deal in depth with issues related to function and class templates in modern C++ programs. Attendees will learn techniques of template-based programming and metaprogramming, as well as related new techniques from the next C++ standard. Participants will receive TRAIN credit for the free course. Course registration is now open. Future courses will occur at two-week intervals.

**International Folk Dancing April 17**

International Folk Dancing returns to Kuhn Barn this week, Thursday, April 17. Dancing begins at 7:30 p.m. with teaching and children's dances followed by request dancing. Newcomers are welcome. and you do not



need to come with a partner. Information at (630) 584-0825 or (630) 840-8194 or [folkdance@fnal.gov](mailto:folkdance@fnal.gov).

**[Additional Activities](#)**