

## Calendar

### Thursday, July 24

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

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

### Friday, July 25

**3 p.m. (NOTE TIME)**  
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over  
**3:30 p.m.**

[Joint Experimental-Theoretical Physics Seminar](#) (NOTE TIME & LOCATION) - Auditorium  
Speakers: C. Hays, University of Oxford and A. Juste, Fermilab

Title: New Results for ICHEP from CDF and DZero

**8 p.m.**  
[Fermilab International Film Society](#) - Auditorium

Tickets: Adults \$5  
Title: [Bacheha-Ye-Aseman](#) (Children of Heaven)

### Saturday, July 26

**8 p.m.**  
[Fermilab Arts Series](#) - Auditorium  
Tickets: \$20/\$10  
Title: [Wilderness Plots](#) (Prairie Tour begins at 6 p.m.)

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

## Weather

## Feature

### Montgomery leaves Fermilab for director post at JLab



Hugh Montgomery, outside the New Muon Lab earlier this year.

In early mornings, late evenings and, often Sundays, you could find Hugh Montgomery working at Fermilab.

"He was happy to do it," said Peter Garbincius, who saw Mont work until 2 a.m. for nearly a three-month stretch trying to fix a radiation shielding issue.

Fermilab's associate director of research loves work almost as much as soccer. Almost. The former college player made sure meetings didn't conflict with Manchester United games.

Mont said he'll continue cheering for his team from Thomas Jefferson National Accelerator Facility where he starts as director in September, a challenge he embraces.

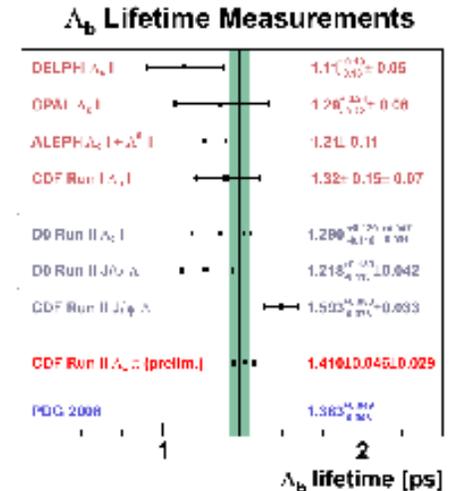
He leaves behind almost 25 years of work at Fermilab where he was simply one of the team in the lab's soccer league, but a leader in nearly every other position he held. He joined the laboratory in 1983 in the Research Services Department where he worked on the support of several experiments including CDF and directly on the E665 muon scattering experiment.

He moved to head of the Computer Department for three years before spending two years on E665. Then, Peter Garbincius recruited him to serve as deputy in the Research Division.

"I asked for Mont because he took a scientist's

## Fermilab Result of the Week

### $\Lambda_b$ lifetime dilemma settled in a tie-breaker



The new  $\Lambda_b$  lifetime measurement from world's largest  $\Lambda_b$  sample is compared with the current world average and all the measurements contributing to it.

Measurements of B-hadron lifetimes are important probes for understanding Quantum Chromodynamics, the theory of the strongest force of nature. In particular, they test the validity of a viewpoint, found in the Heavy Quark Effective Theory. This theory treats the heavy b-quark and the light quark partners that make up B-hadrons similarly to the heavy nucleus and the light electron that make up a hydrogen atom. The lifetimes of B mesons (B<sup>+</sup>, B<sup>0</sup> and now B<sub>s</sub>, which each contain a b-quark and a light quark) are precisely measured and in good agreement with HQET predictions. But a precise determination of  $\Lambda_b$  baryon (a bound state of a b-, a u- and a d-quark) lifetime has remained elusive due to lack of experimental statistics. Also, its HQET prediction is different from that of the B mesons, making it very interesting from a theoretical standpoint.

The  $\Lambda_b$  lifetime puzzle surfaced in the early '90s when the experimental world average, including measurements from both LEP and the Tevatron, was more than two standard deviations below the theoretical prediction. By 2004, the inclusion of higher-order effects

 **Sunny**  
81°/64°

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

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

**Thursday, July 24**

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

[Wilson Hall Cafe menu](#)

[Chez Leon](#)

**Thursday, July 24**

**Dinner**

- Pasta w/roasted summer vegetables
- Grilled swordfish
- Sauteed green beans
- Peach melba

**Wednesday, July 23**

**Lunch**

- Pecan crusted chicken salad
- Carrot cake

[Chez Leon menu](#)

Call x4598 to make your reservation.

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[Result of the Week](#)

[Safety Tip of the Week](#)

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approach as opposed to a bureaucrat's approach to problems," said Garbincius, then Research Division head. "He knows how to relate to people. People respect him and follow his leadership."

[Read more](#)

-- *Tona Kunz*

**Feature**

## Performance recognition awards go to employees



[Exceptional Performance Recognition Award recipients](#)

Fermilab recognized a group of dedicated employees for their outstanding contributions with Exceptional Performance Recognition Awards. The employees were nominated by their divisions and sections. Fermilab Director Pier Oddone handed out the awards at a reception on the 15th floor of Wilson Hall June 26.

"While everybody is doing their job in a great way to make this organization work as well as it does, there are people who go beyond that and put in extra effort, and those are the people who we recognize today," Oddone said during the event.

See all award recipients [here](#).

**In the News**

lowered the theory prediction and significantly reduced the difference with respect to the experimental measurements. In 2006, CDF's measurement in  $\Lambda_b$  to  $J/\psi \Lambda$  decay mode stirred the controversy all over again -- the measurement was as precise as the world average, but higher by 2.5 sigma.

CDF physicists have just completed a new  $\Lambda_b$  lifetime measurement using about 3,000 fully reconstructed  $\Lambda_c \pi$  decays, based on 1 inverse femtobarn of data. These events were collected using CDF's displaced track triggers, which, by construction, severely distorted the lifetime distribution. The current measurement employs a novel Monte Carlo-based technique to extract the lifetime in the presence of such bias.

This new tie-breaker lifetime result falls between the old measurements and the CDF result from 2006. It is in agreement with both with a factor of two smaller errors. It also agrees with the latest theory predictions, confirming the HQET view of the decays of beautiful baryons.

[Read more](#)



Left to right: CDF physicists Reid Mumford, Petar Maksimovic and Satyajit Behari, all from Johns Hopkins University, untangled the lifetime information from a trigger-biased data sample. Not pictured: Michael Schmidt, University of Chicago; Mat Martin, Johns Hopkins University; Dmitri Litvintsev, Fermilab; and Jen Pursley, University of Wisconsin

**Accelerator Update**

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)

## Physicists brace themselves for LHC 'data avalanche'

From *Nature news*, July 22, 2008

*Particle collider will produce 700 megabytes of data every second.*

As physicists prepare to inject the first stream of particles into the Large Hadron Collider (LHC) in August, they are bracing themselves for a 'data avalanche' from the multi-billion-dollar particle accelerator.

Speaking at the Euroscience Open Forum conference in Barcelona, Spain, on 20 July, the LHC team from CERN, the European particle-physics centre near Geneva, Switzerland, revealed some of the mind-bogglingly large numbers involved.

The LHC will slam together bunches of protons moving at close to the speed of light, producing around 600 million collisions per second. It will take hundreds of thousands of computer processors to analyse the collisions, and these will pour out 700 megabytes of data a second. Were a year's worth of data from the LHC to be burned onto CDs, they would form a stack 20 kilometres high, the team says.

The first element of the LHC system consists of radiation-toughened custom electronics sitting next to the detector. These sift through every item of collision data, using algorithms written by hundreds of physicists from across the world, to pick out just a few hundred collision events worth studying in more detail.

[Read more](#)

### July 21-23

- One store provided ~27 hours and 2 minutes
- TeV experts hunt for illusive ground fault
- Stack lost due to broken A:LQ 480-volt breaker

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

### Announcements

[Have a safe day!](#)

### Fidelity representative at Fermilab July 30

Fidelity representative, Jim Stair, will conduct individual counseling sessions at Fermilab on Wednesday, July 30. Sessions will take place in the Aquarium conference room located on the 15th floor of Wilson Hall. Call Fidelity at 1-800-642-7131 or visit the Fidelity [Web site](#) to make appointments.

### Free osteoporosis screening Aug. 8

Wellness Works and Delnor-Community Hospital will host an osteoporosis screening between 7:30 and 11 a.m. on Aug. 8 in the Emergency Operating Center on the ground floor of Wilson Hall. Only Fermilab employees who have not participated in a previous screening are eligible. The free heel scan is an ultrasound test that measures the bone density in the heel. Participants will need to remove their sock and the shoe from one foot. (Ladies, please do NOT wear panty hose.) Participants with heel/ankle fractures or surgery to both feet are excluded from this screening. Sign up instructions are on the [ES&H homepage](#).

[Additional Activities](#)