

Calendar

[Have a safe day!](#)

**Thursday, May 21
11 a.m.**

[Computing Techniques Seminar](#) - FCC1

Speaker: Pete Becker
Title: Writing Fast, Robust Multi-Threaded Applications with C++0x
THERE WILL BE NO THEORETICAL PHYSICS SEMINAR TODAY

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

[Accelerator Physics and Technology Seminar](#) - One West

Speaker: Max Zolotarev, Lawrence Berkeley National Laboratory
Title: Radiation and Acceleration Tutorial

Friday, May 22

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

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

Speaker: Eva Halkiadakis, Rutgers University
Title: Direct Measurement of the W Production Charge Asymmetry at CDF

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

Weather

 **Sunny**
83°/55°

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

Current Security Status

[Secou Level 3](#)

University Profile

Editor's note: This is the first of an ongoing series of profiles spotlighting the critical role of universities in particle physics research.



University of Rochester students Jaewon Park, Aaron Mislivec, Jesse Chvojka and Jerney Wolcott sit in the MINERvA control room.

NAME: University of Rochester

HOME TOWN: Rochester, New York

MASCOT: Yellow jacket

SCHOOL COLORS: Blue and yellow

PARTICLE PHYSICS COLLABORATIONS: MINERvA, CDF, DZero, Compact Muon Solenoid, Large Hadron Collider and LPC.

EXPERIMENTS AT FERMILAB: In addition to MINERvA, CDF and DZero, in the past, the University of Rochester has been involved in E706, NuTeV, CCFR and the development of the AZero photoinjector.

SCIENTISTS AND STUDENTS AT FERMILAB: 6 faculty, 11 postdocs and senior scientists and 10 graduate students.

COLLABORATING AT FERMILAB SINCE: 1972

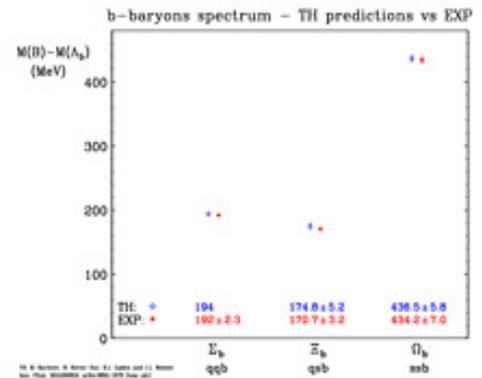
MAJOR CONTRIBUTIONS: The proposal and development of detector technology and construction for parts of MINERvA, the construction of calorimeters for CDF and CMS, the construction of an outer silicon tracker for CMS, development of the DZero fiber tracker.

PARTICLE PHYSICS RESEARCH FOCUS: Neutrinos, dark matter, electroweak



Fermilab Result of the Week

CDF observes Ω_b^- , baryon



The predictions of theory are in very good agreement with the mass measurements of the three baryon states shown in the figure. Plot courtesy of Karliner, Keren-Zur, Lipkin and Rosner.

Measurements of particles containing bottom quarks (also known as b quarks) are an exciting and active area of research at the Tevatron. An analysis of data from the CDF experiment based on 4.2 fb⁻¹ of integrated luminosity has produced new measurements of the masses and lifetimes of the most recently observed baryons containing the b quark, the Ξ_b^- (Cascade-sub-b) and Ω_b^- (Omega-sub-b). These exceedingly rare phenomena are only accessible because of the continuing success of the Tevatron.

Baryons are particles formed of three quarks. The most common examples are the proton and neutron. The Tevatron is unique in its ability to produce baryons containing the b quark. The large data samples now available to the Tevatron collider experiments enable the study of these rare particles. The Ξ_b^- and Ω_b^- have only been observed at the Tevatron – the Ξ_b^- in 2007 and the Ω_b^- by the DZero experiment in 2008.

CDF now reports its own observation of 16 Ω_b^- candidates, along with a new measurement for the particle's mass of 6054.4 ± 6.8 (stat.) ± 0.9 (syst.) GeV/c². The mass of the Ξ_b^- is also updated from its 2007 value. The lifetime of both particles is also measured, a first for the Ω_b^- , and the most precise single

Wilson Hall Cafe

Thursday, May 21

- Southwestern chicken tortilla
- Philly-style cheese steak
- *Garlic herb roasted pork
- Smart Cuisine: Mardi Gras jambalaya
- *Southwestern turkey wrap
- Assorted sliced pizza
- *Marinated grilled chicken Caesar salads

*Carb restricted alternative

[Wilson Hall Cafe menu](#)

Chez Leon

Thursday, May 21 Dinner

- Radicchio & endive salad w/ roasted pears and gorgonzola
- Peppercorn crusted filet mignon w/ port jus
- Creamy parmesan orzo
- Chive green beans
- Fudgy soufflé cake with a warm turtle sauce

Wednesday, May 27 Lunch

- BBQ ribs
- Baked beans
- Cole slaw
- Black bottom banana cream pie

[Chez Leon menu](#)

Call x3524 to make your reservation.

Archives

[Fermilab Today](#)

[Result of the Week](#)

[Safety Tip of the Week](#)

[ILC NewsLine](#)

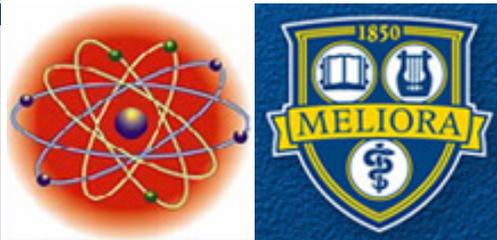
Info

interactions, quarks, gravitational wave detection and non-linear quantum electrodynamics.

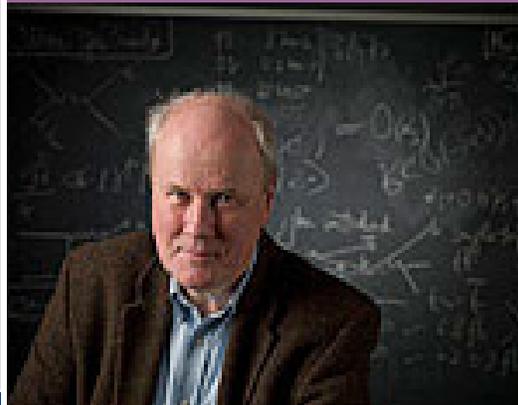
WHAT SETS [PARTICLE PHYSICS AT THE UNIVERSITY OF ROCHESTER](#) APART?: The University of Rochester is one of the smallest major research Universities in the country but has four theoretical and 10 experimental faculty focused on particle physics. "We are the mouse that roars."

FUNDING AGENCY: National Science Foundation and the Department of Energy

FAVORITE NATIONAL LABORATORY: Fermilab



Feature



Fermilab's Keith Ellis joins the ranks of science greats

Fermilab theorist Keith Ellis' work on the strong interaction paved the way to the discovery of the top quark, earning him recognition as one of the great thinkers in science.

The United Kingdom's National Academy of Science elected [Ellis and 43 other leading thinkers](#) in the fields of science, engineering and medicine to the Fellowship of the Royal Society.

Membership is given to those who have made exceptional contributions to society. With induction to the fellowship, announced May 15, Ellis joins the company of science greats

measurement yet obtained for the Ω_{b^-} .

What is perhaps most interesting about this result is that CDF finds the Ω_{b^-} at a very different mass value than the one that was previously observed by DZero. The two experimental results appear to be inconsistent with each other, leaving scientists from both experiments wondering whether they are measuring the same particle. Furthermore, neither experiment observes a mass peak at the other experiment's measured value.

The CDF result agrees with theoretical expectation both in the measured production rate and in the mass value, thus passing the "duck test". Still, it will take further investigation to solve this puzzle.

--Edited by Craig Group



Pat Lukens, of Fermilab, is the CDF scientist responsible for this exciting new result.

Accelerator Update

May 18-20

- Three stores provided ~18.75 hours of luminosity
- Quadrupole magnet replaced at MI-42
- D0 required 8-hour access for necessary repairs
- TeV quench during shot setup

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Special announcement

Fermilab Today
is online at:
www.fnal.gov/today/

Send comments and
suggestions to:
today@fnal.gov

Visit the Fermilab
[home page](#)

Isaac Newton, Charles Darwin and Stephen Hawking.

[The Royal Society](#) was founded in 1660 as an independent academy to promote the natural and applied sciences.

"Our new Fellows are at the cutting edge of science worldwide," said Martin Rees, president of the Royal Society, in a press release. "Their achievements represent the vast contribution science makes to society. They join an outstanding group of over 1,400 Fellows and Foreign Members of the Royal Society, and all rank among the international leaders in their field."

Ellis earned acclaim for his seminal contributions to the theory of strong interactions, quantum chromodynamics.

"He performed many of the key calculations that led to the acceptance of QCD as the correct theory," according to the Royal Society Web site. "These include the first quantitatively reliable predictions of fundamental processes observed in electron-positron and proton-(anti)-proton colliders. These results were essential for the analysis of the properties of gluons and the discovery of the top quark. Since then he has developed general techniques for precision calculation of all strong interaction processes -- an invaluable tool for theorists and experimentalists alike."

Joining Ellis in the society is Professor John P. Holdren, assistant to president for science and technology and director of the Office of Science and Technology Policy. He is one of eight new foreign members elected. Holdren was chosen for his contributions to the understanding of energy technology and the links between populations, resources and environment.

Photo of the Day

Celebrating National Employee Health & Fitness Day

Volunteer cleanup today

The second scheduled volunteer cleanup is today. A bus will transport volunteers at 11:45 a.m. from Wilson Hall ground floor east side. The cleanup area has not been determined yet. Lunch will be at the Education Center picnic area.

Announcements

Latest Announcements

[Film Society looking for new members](#)

[Users Office closed May 22 and 27](#)

[Accelerated C++ Short Course: registration open - June 8](#)

[Jobs at Fermilab: Employee profiles updated](#)

[Python training June 17-19](#)

[Intermediate/Advanced Python Programming July 22-24](#)

[Concerned about H1N1? Ask a question](#)

["Angels & Demons" Lecture Night: The Science Revealed" - May 21](#)

[Deadline for The University of Chicago Tuition Remission Program - May 22](#)

[NALWO - Brown Bag Lunch - Chinese Pottery - May 26](#)

[Are you Fit to a T? May 27 event](#)

[Nanotechnology Lecture: Crafting of Self-Assembling Materials for Medicine & Energy - Fermilab Arts Series](#)

[Science Adventures for children](#)

[Discounted Rates at Grand Geneva Resort, Lake Geneva, WI](#)

[Summer co-ed volleyball league June 1](#)

[Registration for Users' Meeting is open](#)

[Conflict Management and Negotiation Skills class - June 3 and 10](#)

[Discount tickets to "1964" ...Beatles tribute - June 6](#)



Fermilab employees celebrate National Employee Health & Fitness Day on Wednesday. People walked, ran or biked around the Main Ring. The event is sponsored by the Recreation Department and the Wellness Committee.

[Susan Werner - singer/songwriter performs at Arts Series](#)

[SciTech summer camps](#)

[Additional Activities](#)

[Submit an announcement](#)