

Calendar

Friday, May 19

12:30 pm - 3:30 pm Mini Workshop on "Interdisciplinary" Approach to Constraint Low-Energy SUSY Models - Racetrack (WH7X)

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Joint Experimental Theoretical Physics Seminar - 1 West

Speaker: M. Carena, Fermilab

Title: Probing Supersymmetry Through Higgs, Flavor Violation and Dark Matter Searches

Monday, May 22

2:30 p.m. Particle Astrophysics Seminar - Curia II

Speaker: D. Wittman, University of California, Davis

Title: DLS

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. All Experimenters' Meeting - Curia II

Special Topics: High Pressure MuCool RF Cavities in B Field; Zebra Mussel Abatement

For links to events, click [here](#).

Weather



Occasional Rain **65°/45°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

Peeling off atoms? Getting particles for the accelerator

Sometimes our neighbors write to us with questions about physics. Roger Dixon, AD head, responded to this question posed by an 11-year-old boy.



A particle begins its journey through the Tevatron in the Cockcroft Walton tower.

Q: I was wondering if you could explain to me about how you let only one atom in the accelerator, if everything is made out of atoms?

A: Let me give you the simple answer first, and then I will explain. We do not let only one atom at a time into the accelerator. Instead we have more than 10 trillion protons and close to a trillion antiprotons in the Tevatron accelerator at once.

We get our protons from a bottle of hydrogen gas. Hydrogen is the simplest kind of atom. It has one proton and one electron.

We let some of the gas into the first accelerator in our accelerator chain.

Not very long after that we take away the electrons so that



Roger Dixon

ILC NewsLine

Brian Greene Gives Congress a Tour of the Quantum Universe



Quantum Universe Meets Hollywood: Actor Alan Alda (left), a science supporter and host of the PBS series "Scientific American Frontiers," chats with Brian Greene (center) and Representative Judy Biggert (right) at the R&D Caucus on 9 May in Washington D. C.

Have you ever tossed a ball at a wall, playing a game of one-man catch? As you tossed that ball again and again and again, have you ever thought about the chance that it could go right through the wall? According to quantum mechanics, this is a real possibility. "It's a small probability, but it is there," said renowned physicist and author Brian Greene, who addressed the Congressional Research and Development Caucus Advisory Committee in Washington, D.C. last week.

"The ideas of modern physics are so strange that they sometimes seem to not have any relevance to real science," he said. "What's stunning is that there is a chance that we might be able to test these ideas within the next five to six years."

[Secon Level 3](#)**Wilson Hall Cafe****Friday, May 19**

- New England Clam Chowder
- Western BBQ Burger
- Tilapia with Tortilla Crust
- Swedish Meatballs
- Bistro Chicken & Provolone Panini
- Assorted Personal Size Pizzas
- Carved Top Round of Beef

The Wilson Hall Cafe accepts Visa, Master Card, Discover and American Express.

[Upcoming Menu](#)**Chez Leon****Wednesday, May 24****Dessert Lunch**

- Cold Fruit Soup
- Assortment of Desserts
- Cold Lime Soufflé

Thursday, May 25**Dinner**

CLOSED

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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we are left with only the protons. Since the protons have an electrical charge, we can accelerate them.

It turns out that we accelerate a lot of them all at once to collide with antiprotons that we make by diverting some of the protons onto a target. When we crash the protons into the target antiprotons come streaming out of it, and we make them into a beam. The antiprotons are created in the target following the rules of Einstein's equation [energy equals mass times energy squared].

[read more](#)

If you are a Fermilab physicist who is willing to answer occasional questions from the public, please let us know. You can reach us at today@fnal.gov.

Letter to the Sun-Times Editor from Pier Oddone

On Sunday, *Chicago Sun-Times* printed a letter from Pier Oddone responding to a May 10 article titled "Not a particle of sense in losing scientific edge." The original article argued that the ILC will be an important asset for the country and the community. "An international linear collider at Fermilab would bring more scientists from around the world to our region," it states. You can [read Oddone's letter here](#). The article, reprinted in the *Courier News* under a different title, can be found [here](#).

In the News

Beginning with Sir Isaac Newton's laws of gravity and leading up to the modern-day string theory, Greene told the story of Einstein's quest to find a "unified theory" of the universe: a single, all-encompassing framework for explaining the cosmos. "How did the universe begin?" Greene asked. "We can make use of the laws that we know to determine what happened to a fraction of a second after it started. A main goal of the unified theory is to discover what happened in the beginning of the universe."

[Read More](#)

—Elizabeth Clements

Announcements**Users' Meeting at Fermilab, May 31-June 1**

The 2006 Users' meeting will include talks by Norm Augustine, author of *Rising Above the Gathering Storm*, Harold Shapiro, EPP2010 Chair, Judy Biggert, Illinois Congresswoman and Robin Staffin, Director of DOE's Office of High Energy Physics, among others. A complete schedule and registration can be found [here](#).

Monthly Leave Sheets are due today

Monthly leave sheets are due in Payroll by 10am today.

Batavia Road closure extended

The Batavia Road entrance will remain closed until Friday, May 26. The original re-opening date of May 22 was extended at the request of Warrenville to accommodate continuing road work on Batavia Road from our east entrance to Route 59. Updates will appear in Fermilab Today. For more information, contact Tom Prosapio at prosapio@fnal.

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

Send comments and suggestions to today@fnal.gov

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From *FYI: The AIP Bulletin of Science Policy News*, May 17, 2006:

A Path Forward: "Charting the Course for Elementary Particle Physics"

"Elementary particle physics is poised to make potentially transformative discoveries," a National Research Council committee concludes. "If the United States commits to a strategic vision such as the one the committee has laid out, the nation can continue to occupy a position of leadership in this vibrant and exciting field of science. Such an aspiration is worthy of a great nation wishing to remain on the scientific and technological frontiers. It will inspire future generations, repay the necessary investments many times over, and provide a fuller understanding of our place in the cosmos."

An important report has been released by the Committee on Elementary Particle Physics in the 21st Century of the NRC's Board on Physics and Astronomy. Entitled "Revealing the Hidden Nature of Space and Time, Charting the Course for Elementary Particle Physics," this 128-page report outlines a strategy for the United States to sustain its leadership in particle physics. The Committee was chaired by Harold T. Shapiro, President Emeritus of Princeton University.

[Read More](#)

[gov](#)

Power Outage

On Saturday, May 20, there will be a major power outage in Wilson Hall. As a result, Wilson Hall and Ramsey Auditorium will be closed from 7:00 a.m. to 5:00 p.m. If you must enter Wilson Hall or the Auditorium during this time, you will be asked to sign in at the security desk in the Wilson Hall atrium. Please note: emergency exit stairwells, elevators and exit signs will not illuminate during this time. Avoid using the elevator and use the North open stairwells in case of emergency.

Volunteer cleanup cancelled

The [volunteer cleanup](#) scheduled for tomorrow, May 20 has been cancelled. Updates will appear in Fermilab Today.

Fermilab Association of Rocketry: Rescheduled

There will be a launch Saturday, May 20th from 10am to 3pm at the south-east corner of Batavia and Eola roads. More information can be found [here](#).

Save the date

The Fermi Singers will perform June 2 at noon in the Ramesy Auditorium.

New [classified ads](#) have been posted on Fermilab Today.

[Upcoming Activities](#)