Calendar

Have a safe day!

Friday, Nov. 11
11 a.m.
Research Techniques Seminar - Curia II
Speaker: Richard Wigmans, Texas Tech University
Title: Dream – Towards High-Resolution Jet Spectroscopy
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
4 p.m.
Joint Experimental-Theoretical Physics Seminar - One West
Speaker: Teppei Katori, Massachusetts Institute of Technology
Title: Test of Lorentz and CPT Violation with MiniBooNE Excesses
8 p.m.
Fermilab Lecture Series - Ramsey Auditorium
Tickets: $7
Speaker: Dr. Bonnie Bassler, Princeton University
Title: How Bacteria Talk to Each Other

Monday, Nov. 14
THERE WILL BE NO PARTICLE ASTROPHYSICS SEMINAR TODAY
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
4 p.m.
All Experimenters' Meeting - Curia II
Special Topics: RE-990/Holometer Experiment Installation Progress; T-992 Diamond and 3-D Detector Tests at FTBF

Click here for NALCAL, a weekly calendar with links to additional information.

Upcoming conferences

Campaigns

Take Five

Weather

Cloudy
47°/33°

Extended Forecast
Weather at Fermilab

Current Security Status

Secon Level 3

Wilson Hall Cafe

Friday, Nov. 11

- Breakfast: Chorizo burrito
- Smart cuisine: Italian vegetable soup
- Chicken fajita sandwich
- Southern-fried chicken
- Smart cuisine: Mediterranean-baked tilapia
- Eggplant parmesan panini
- Assorted sliced pizza
- Assorted sub sandwiches

Wilson Hall Cafe Menu

Chez Leon

Friday, Nov. 11
Dinner
Closed

Wednesday, Nov. 16
Lunch
- Rouladen w/ buttered noodles
- Medley of peas & carrots
- German chocolate cake

Chez Leon Menu
Call x3524 to make your reservation.

Archives

Fermilab Today
Director's Corner
Result of the Week
Safety Tip of the Week
CMS Result of the Month
User University Profiles
ILC NewsLine

Info

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

Send comments and suggestions to:
today@fnal.gov

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In Memoriam

Norman Ramsey - Nov. 5


Norman Ramsey

One of the Fermilab founders and former URA president Norman Ramsey died on Nov. 5. He was 96 years old.

Ramsey's influence reached far into the scientific and political realms. He was a pioneer in magnetic resonance, a Harvard professor and an important participant in the development of radar and the atomic bomb in World War II. After the war, Ramsey chaired the President's Science Advisory Committee, which worked in tandem with the General Advisory Committee to the Atomic Energy Commission. In April of 1963, Ramsey put forth a report recommending the design and construction of a 200 BeV accelerator. Informally, the study became known as the Ramsey Report.

"Norman was the catalyst that enabled the creation and evolution of Fermilab from 1963 into the 1980s," Fermilab historian and archivist Adrienne Kolb said. "He assured Fermilab's continuity and had all the right answers to quiet any challenges, wherever they surfaced."

The Universities Research Association, Inc. (URA) was assembled in 1965 to manage the project that was known as the National Accelerator Laboratory (NAL). Ramsey became president of the URA in 1966. He took a sabbatical in 1973, but returned to the position in 1974. He remained president until 1981, taking another short break in 1979. The idea of a national laboratory managed by a consortium of universities, and not by a single institution, was revolutionary. Ramsey developed the concept through his work on the Ramsey Report and followed through with the creation of NAL.

Read more

—Ashley WennersHerron

Special Announcement

Veterans day luncheon

At 11:30 a.m. today, all veterans are invited to a luncheon at Kuhn Barn. The East High J.R.O.T.C. will present colors, and Lt. Rich Allen will be the guest speaker. Tickets are $8.

Feature

Nominations now accepted for director's volunteer award


In 2010, Mike Cooke received the Director's Award from Pier Oddone and a hug from his toddler son.

Each year, more than 200 employees, users and contractors go above and beyond their everyday duties to further outreach and education at the laboratory.

These volunteers are role models and mentors for teachers and students, answer tough questions about Fermilab and its science, maintain Lederman Science Center exhibits, visit area classrooms and more.

Once a year at a reception, the laboratory recognizes the efforts of an especially dedicated volunteer. Please let the Education Office know when you're impressed by a colleague's contribution.

Nominate a Fermilab staff member, user or contractor candidate for the director's volunteer award. The Education Office will take nominations until Nov. 28. This year's reception will take place on Dec. 7.

Learn more

In the News

Pristine relics of the Big Bang spotted

From *PhysicsWorld.com*, Nov. 10, 2011

For the first time, astronomers have discovered two distant clouds of gas that seem to be pure relics from the Big Bang. Neither cloud contains any detectable elements forged by stars; instead, each consists only of the light elements that arose in the Big Bang some 14 billion years ago. Furthermore, the relatively high abundance of deuterium seen in one of the clouds agrees with predictions of Big Bang theory.

Just after the Big Bang, nuclear reactions created the three lightest elements – hydrogen, helium, and a tiny bit of lithium. Stars then converted some of this material into the heavy elements such as carbon and oxygen that pepper the cosmos today.

But no-one has ever seen a star or gas cloud made solely of these three Big Bang elements.

Read more

From ILC NewsLine

Is the Higgs enough?

The Large Hadron Collider at CERN is running extremely well and its two general-purpose detectors ATLAS and CMS are collecting data at a much faster pace than expected. The LHC successfully concluded its 2011 proton run an the end of last month.

The ILC physics community is preparing for the results expected to emerge from the LHC, and there were many discussions about LHC results at the linear collider workshop held in Granada in September. In the ILC physics session on the first day of the workshop, Keisuke Fujii, associate professor at KEK, made a presentation entitled "Is Higgs enough? Or do we need something clearly beyond the Standard Model?"

"My answer to the question is: it is surely enough and we definitely need the ILC," said Fujii.

Why would it be enough?

Read more

—Rika Takahashi

CMS Result

Weinberg's angle

The original physics idea behind today's measurement came when a physicist was driving a car like this one. So much for the claim that physicists aren't cool...

One bright day in 1967, future Nobelist Steven Weinberg was driving to work in his brand new, bright red Camaro convertible when he had an epiphany. He understood the mechanism that broke the symmetry between the weak nuclear force, which is responsible for some forms of radioactivity, and the electromagnetic force, which holds atoms together, explains light, magnets, lightning and static cling.

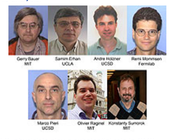
His 1967 paper describing this insight also included some ideas that had been proposed in an earlier paper by Sheldon Glashow. One such idea was weak neutral currents. A neutral current occurs when an incoming particle shoots a neutral particle at another incoming particle, causing both of them to scatter. A weak neutral current is when this scattering is caused by the weak nuclear force. Energy is exchanged, but the electrical charge isn't. Neutral currents were discovered in 1973 by the Gargamelle collaboration at CERN. Later experiments isolated this neutral particle involved in the weak force. It is called the Z boson and was discovered in 1983 at CERN. For his contributions to electroweak unification, Weinberg was awarded the 1979 Nobel Prize, along with Sheldon Glashow and Abdus Salam.

The Weinberg angle, which is recently more often called the weak mixing angle, is a mathematical component of the theory integrating the weak and electromagnetic forces. Essentially, it connects the photon (electromagnetism) and the Z boson (the weak force). While the weak mixing angle has been measured before, it is important to study it again at the LHC to verify there are no surprises. CMS scientists looked at events in which a muon and antimuon were created. This required a quark from one beam to annihilate with an antiquark from the other, creating a photon or Z boson. This particle then decayed into the muon/antimuon pair. This is the first study of this kind using muons at a hadron collider.

To measure the weak mixing angle, CMS scientists determined the orientation of the outgoing muon as compared to the direction of the incoming quark. However, unlike the Tevatron, in which one of the beams consisted of antiprotons, the LHC collides beams of protons. Thus, it is not possible to know which proton contained the quark and which the antiquark. CMS scientists used their knowledge of how the quarks share the parent proton's momentum to determine which proton was most likely to have carried the quark. Using this methodology, they were able to measure the weak mixing angle to a precision of one percent and found it was in good agreement with expectations. The impressive precision of these Standard Model measurements can only increase our confidence when we encounter something unexpected.

—Don Lincoln


Nhan Tran and Andrei Gritsan from The Johns Hopkins University made important contributions to this analysis.



U.S. physicists play a substantial role in CMS central data acquisition.

Announcements

Latest Announcements

FCC main parking lot closure

Fermilab Lecture Series presents "How Bacteria Talk to Each Other" - today

Two complimentary movie tickets for gym membership renewals - today

Abri Credit Union closed - today

Dance performance: The Matter of Origins - through Nov. 13

Barn dance party - Nov. 13

English country dancing - Nov. 13

Muscle toning class - Nov. 15

PBS NOVA series "The Fabric of the Cosmos" - Nov. 16 and 23

Ringling Bros. and Barnum & Bailey® discount - Nov. 16-27

NALWO - Cooking demonstration - Nov. 17

Joint Speaker Series - Nov. 17

New play about Edwin Hubble, Einstein and the expanding universe - 12 & 19

Fermilab Arts Series: An Evening with Paula Cole - Nov. 19

Deadline for the University of Chicago Tuition Remission Program - Nov. 22

School's Day Out Camp - Nov. 21 and 22

Muscle toning class - Nov. 15

NALWO - Winter Holiday Tea - Dec. 5

Behavioral interviewing course - Dec. 7

Fermilab Arts Series: Second City's Dysfunctional Holiday Revue - Dec. 10

Excel Power user/Macros course - Dec. 14

Roadway construction safety update

Annual enrollment

Atrium work updates

Chicago Blackhawks vs. Predators discount

Winter basketball league

Indoor soccer

International Folk Dancing Thursday evenings in Kuhn Barn

Sam's Club announces membership offer for employees

Scottish country dancing meets Tuesday evenings in Kuhn Village Barn

Submit an announcement

Classifieds
Find new classified ads on *Fermilab Today*.