Fermilab Today

Thursday, April 16, 2009

Calendar

Thursday, April 16
12 p.m.
Special Seminar - One West
Speaker: James Carpenter, James Carpenter Design Associates Inc.
Title: Constructing the Ephemeral
THERE WILL BE NO PHYSICS AND DETECTOR SEMINAR THIS WEEK
2:30 p.m.
Theoretical Physics Seminar - Curia II
Speaker: Tuhin Roy, University of Oregon
Title: Surprises in Low Energy Supersymmetry
2:30 p.m.
Computing Techniques Seminar - One West
Speaker: Craig Williams, CIO, Naperville School District 203
Title: Experiences with Computing - Sharepoint, Voice Over IP, Student Curricula Accomplishment DB, Networks
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY
4 p.m.
Extreme Beam - Physics at the Intensity Frontier Lecture Series - One West
Speaker: Patrick Huber, Virginia Tech
Title: Neutrino Phenomenology: NOvA and Beyond

Friday, April 17
3:30 p.m.
DIRECTOR'S COFFEE BREAK (NOTE TIME) - 2nd Flr X-Over
THERE WILL BE NO JOINT EXPERIMENTAL-THEORETICAL PHYSICS SEMINAR THIS WEEK

Feature

Bison, birds and bugs, oh my!

Kaitlyn Jeanette Padbury, the 7-year-old granddaughter of CD's Randolph Herber, uses a magnifying class to examine a private collection of fossils on loan from a docent during the 2008 Family Outdoor Activity Fair. This year's event will take place on April 26.

Parents looking for a way to get their children outdoors for hands-on activities can bring them to Fermilab's Family Fun Fair from 1-4 p. m. on Sunday, April 26.

"Science doesn't have to just happen in a lab," said Gail Poisson, Fermilab docent and event co-organizer. "We want to show parents and their children that science is everywhere."

More than 300 people attended last year's fair. This year's fair will have more to offer, with at least 13 different activities for children ages 5-12. Older children can make their own sun dial while younger children can identify animal tracks. Everyone can enjoy a presentation of live birds of prey.

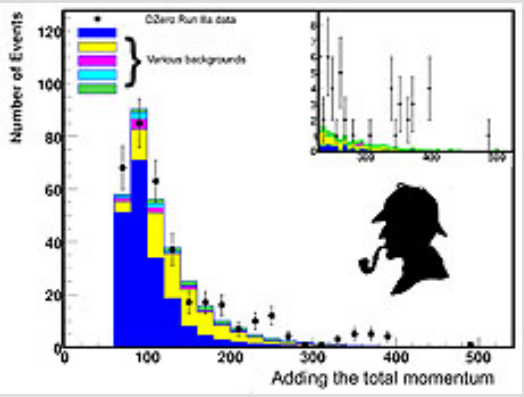
Children can explore the wildlife living in ponds and on logs and can visit the bison pen to check for new calves.

This is the second year for the fair, which began as a way to help parents get their children excited about science. The event is funded by the Supporting Parents in Advocacy, Reform and Knowledge in Science program.

"We want parents to have fun with their kids,"

Fermilab Result of the Week

Searching for the unexpected



This plot shows the largest discrepancy between data and theoretical predictions. The inset plot is a close up of the larger one. This particular plot adds the transverse momentum of an electron and muon with opposite electrical charge and "missing transverse momentum" that usually indicates a neutrino. The colored areas are the predictions, while the points are the measurements. The discrepancy is most likely due to an inadequate modeling of how muons are measured and is not a discovery.

Sherlock Holmes solved crimes by looking for the thing out of place: a smudge of dust on a finely pressed suit; cuts on the side of a leather loafer. A case could change, depending on what he saw that was unexpected.

In the very finest Sherlockian tradition, DZero scientists have been carefully studying data, looking for something unexpected. At first, you might wonder why this is newsworthy. After all, that's what scientists do, right? However, most searches for new physical phenomena start out with scientists looking to see if a particular theoretical prediction is true. To do this, particle physicists carefully study the prediction and decide how to best record data in which that process occurred. We then discard the data that were caused by other physical processes. This strategy allows us to precisely study a particular theoretical prediction.

A problem can arise if there is some new physical process present in the data but the theory explaining it hasn't been invented yet. What then? In order to make sure that we do not miss something that is there, we can employ a different technique called a model independent search, or MIS. In this case, we

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

Weather

Sunny
65°/40°

Extended Forecast
Weather at Fermilab

Current Security Status

Secon Level 3

Wilson Hall Cafe

Thursday, April 16
- Tomato Florentine
- *Pork BBQ sandwich
- Pasta primavera
- Smart cuisine: chicken Marsala
- Smoked turkey melt
- Assorted sliced pizza
- SW chicken salad w/roasted corn salsa

**Carb restricted alternative*

Wilson Hall Cafe menu

Chez Leon

Thursday, April 16
Dinner
- Stuffed portobello mushroom
- Ancho fired pork tenderloin
- Pasta primavera
- Strawberry shortcake

Wednesday, April 21
Lunch
- Assortment of quiches
- Cucumber salad
- Fresh fruit plate

Chez Leon menu
Call x3524 to make your reservation.

Archives

Poisson said. “This is a way for parents to break down barriers to science with their children.”

The event is free and open to the public, but registration is required.

Learn more (pdf)

-- Tia Jones

Special Announcement

Extreme Beam lecture today at 4 p.m. in One West

The third lecture in the Extreme Beam lecture series will take place Thursday, April 16, in One West.

The third lecture of the Extreme Beam series will take place at 4 p.m. today in One West. Patrick Huber, from the Virginia Tech University Department of Physics, will give a talk titled “Neutrino Phenomenology: NOvA and Beyond.” A reception will follow.

The lecture series, which will feature talks at Fermilab throughout 2009, will give in-depth information about the science and accelerator and detector technologies that will create a world-leading physics program at the Intensity Frontier.

Visit the Extreme Beam Web site for more information.

Special Announcement

simply make many data plots and compare them with Standard Model predictions. Plots in which the data and Standard Model predictions disagree could be the sign of something unexpected.

Using two programs, called Vista (pioneered by CDF) and Sleuth (pioneered by DZero), we made plots using very violent collisions, the collisions where new phenomena are most likely to be found. We tested this approach by comparing our data to a theory from which top quarks were removed, essentially rediscovering the top quark. We were happy to see that this technique did indeed find top quarks.

We repeated this process for nearly 10,000 data plots, comparing each of them to the full Standard Model. Almost all plots agreed with theory. The few that disagreed were more closely inspected. It became clear that the discrepancy stemmed from having an imperfect simulation of the DZero detector. (Scientists knew about this issue.)

So, no hint of new physics was found. But this study makes us much more confident that it’s not just because we’re looking in the wrong place.

This team was responsible for this interesting analysis.

Info

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

Send comments and suggestions to:
today@fnal.gov

Toastmasters coming to Fermilab

Do you want to practice and improve your communication skills? We are looking for people interested in starting a Toastmasters Club here at Fermilab. Toastmasters are a non-profit organization that has been around for more than 84 years and offers a proven and enjoyable way to hone communication and leadership skills. People who would like to learn more about the club should send an e-mail to Jeanne Koester, jkoester@fnal.gov. A Toastmasters demonstration meeting will be scheduled for later this year.

Feature

Chic Gamine performs at Fermilab Saturday, April 18

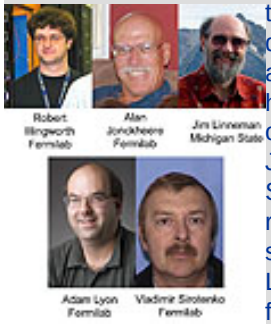
Chic Gamine will perform at Fermilab on Saturday, April 18.

For 90 minutes on Saturday, the soulful grooves and rich vocal acrobatics of Chic Gamine will fill Ramsey Auditorium.

The four female singers, who use their voices to sound like multiple musical instruments will take the stage at 8 p.m. on Saturday, April 18.

Ariane Jean, Andrina Turenne, Alexa Dirks and Annick Bemault, along with drummer and percussionist Alexandre Sacha Daoud, started the group in 2007. Their influences include Latin, French Canadian, Doo Wop and African music.

Chic Gamine has performed all over North America including at the California World Fest, the Winnepeg Folk Festival and the Strawberry Festival. They have opened for Smokey Robinson at the Festival at Sandpoint, Idaho. Recently, the Montreal-based group won the Juno Award for Best/ Traditional Album for their self-titled debut record.



The computing support team is crucial for smooth data analysis. Adam Lyon and Robert Illingworth handle day-to-day operations. Alan Jonckheere and Vladimir Sirotenko compile the reconstruction and simulation programs. Jim Linnemann is responsible for the experiment data bases.

Accelerator Update

April 13-15
- Three stores provided ~41.75 hours of luminosity
- LRF3 LCW leak fixed
- Accumulator bend bus power supply repaired
- Pbar Debuncher and Accumulator energy mismatch corrected

Read the Current Accelerator Update
Read the Early Bird Report
View the Tevatron Luminosity Charts

Announcements

Have a safe day!

April is National Humor Month...click on the link for the joke of the day

Free 30-minute ab workout

Chic Gamine at Fermilab April 18

Fermilab club & league fair

Blackberry Oaks Golf League

Got golf? Join the Fermilab Golf League

Muscle toning classes

Barn dance April 19

Artist Within - employee art show '09

Fermilab blood drive April 21 and 22

MathWorks Seminar - April 21

NALWO - Mexican cuisine cooking demonstration

Word 2007: Styles and Templates class offered April 23

For information or reservations call (630) 840-ARTS (x2787) weekdays from 9 a.m. to 4 p.m. Visit the Web site for more information.

In the News

String theory: A beginner's guide

From ***New Scientist***, April 15, 2009

String theory is one of the most famous ideas in modern physics, but it is also one of the most confusing.

At its heart is the idea that the fundamental particles we observe are not point-like dots, but rather tiny strings that are so small that our best instruments cannot tell that they are not points.

It also predicts that there are extra dimensions to space beyond the obvious length, breadth and depth, but we do not experience them because they are bunched up in tiny spaces.

While these notions are deeply strange, the key issue for string theorists has actually been the difficulty of testing their ideas.

Read more

Lederman Science Center to host outdoor fair - April 26

Greek folk dance workshop - April 30

NALWO - spring tea - May 1

Rapid hardware prototyping and industrial control application development seminar May 13

Coed softball season begins May 13

Conflict Management and Negotiation Skills class June 3 and 10

Discount tickets to "1964"...Beatles tribute - June 6

SciTech summer camps

Additional Activities

Submit an announcement