

Calendar

[Have a safe day!](#)

Thursday, Oct. 22

11:30 a.m. to 1:30 p.m.

ES&H Fair - WH atrium

2 p.m.

[Computing Techniques](#)

[Seminar](#) - FCC2A/2B

Speaker: Andy Terrel,

University of Chicago

Title: Mathematical Interfaces

of Automated Scientific

Computing

2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: Uli Baur, SUNY

Buffalo

Title: Measuring the Higgs

Boson Self-Coupling at High

Energy e+e- Colliders

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](#) - Curia II

Speaker: Kenneth Long,

Imperial College London

Title: The Neutrino Factory:

Sensitivity for the Next Decade

Friday, Oct. 23

10:30 a.m.

[Research Techniques Seminar](#)

- One East

Speaker: Alexander Gektin,

Institute for Scintillation

Materials, Kharkov

Title: New Generation of HEP

Scintillator: Search and

Development Criteria

2 p.m.

[Computing Techniques](#)

[Seminar](#) - Curia II

Speaker: Sebastian Lopienski,

CERN

Title: Developing Secure

University Profile

Indiana University South Bend



Front row, from left: Joshua Behnke; Phil Mark, applied math; Andrea Vollrath, local science teacher. Rear row, from left: Andrea Palenchar, physics major; Edward Behnke, engineer and physics bachelor of science; Ilan Levine, professor. Not pictured: Brendan Sweeney, physics major.

NAME:

[Indiana University South Bend](#)

HOME TOWN:

South Bend, Indiana

MASCOT:

The Titans



Indiana University South Bend's mascot, The Titans

SCHOOL COLORS:

Cream and Crimson

PARTICLE PHYSICS COLLABORATIONS:

COUPP, PICASSO

EXPERIMENTS AT FERMILAB:

COUPP

SCIENTISTS AND STUDENTS AT FERMILAB:

7

COLLABORATING AT FERMILAB SINCE:

2004

MAJOR CONTRIBUTIONS:

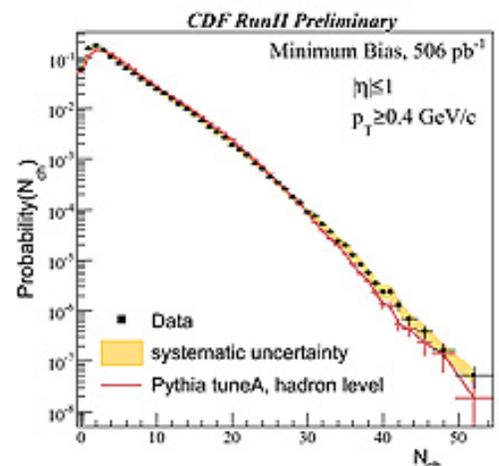
Acoustic sensor and preamp R&D and production. Encapsulation of various detector components for deployment in bubble chamber. Radon emanation and diffusion measurements.

PARTICLE PHYSICS RESEARCH FOCUS:

Search for WIMP dark matter (COUPP and PICASSO experiments).

Fermilab Result of the Week

Sorting out the soft mess



The multiplicity distribution in minimally biased data compared to the prediction of simulation.

In a proton-antiproton collider, like the Tevatron, the properties of hard head-on collisions of two partons - quarks and gluons that make up the protons - can be calculated using the theory of Quantum Chromo Dynamics (QCD). But the majority of the collisions at the Tevatron are softer and produce less energetic particles. In these cases, scientists cannot perform QCD calculations because they are too complex.

A model of these soft events requires a complex cocktail of many different physical effects that cannot be described independently. In the most recent models, the best results come from a single proton-antiproton collision that contains multiple parton-parton interactions and includes correlations between the final state particles that originate from these different collisions. In other words, data seems to confirm that there are multiple interactions and that a connection exists between the different partonic collisions because the partons come from the same proton and antiproton.

To study these softer processes and understand how they relate to the harder ones, scientists at CDF collect an unbiased sample of events that contain all types of interactions sampled according to their natural production rate. The goal is to make a set of measurements that experimentally describe this sample. One such measurement is the distribution of the multiplicity of charged particles that are produced by the collisions. It

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

[Joint Experimental-Theoretical
Physics Seminar](#) - One West
Speaker: Fabrizio Margaroli,
Purdue University
Title: MET + b-Jets: From
Single Top Observation to
Limits on Higgs at CDF

Saturday, Oct. 24
8 p.m.

[Fermilab Arts Series](#) - Ramsey
Auditorium
Hot Buttered Rum
Tickets: \$25/\$13
NOTE: 7 p.m. - special talk in
One West about their
alternative fuel tour van.

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

Campaigns

[Take Five](#)

[Tune IT Up](#)

Weather

 **Rain**
54°/48°

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

Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

WHAT SETS PARTICLE PHYSICS AT INDIANA UNIVERSITY SOUTH BEND APART?

All of the best work is done by undergraduate students. We designed and built the sensors used to do the first-ever acoustic particle identification, distinguishing neutrons from alphas.

FUNDING AGENCY:

National Science Foundation

FAVORITE NATIONAL LABORATORY:

Fermilab



INDIANA UNIVERSITY
SOUTH BEND

View all [University profiles](#)

Special Announcement

ES&H fair during lunch hours today in Wilson Hall atrium



A display of prizes from the summer ES&H fair.

Environmental Safety and Health staff will raffle prizes and hand out freebies such as hand sanitizer, ice scrapers, granola bars and water bottles at the lunchtime ES&H Fair in the Wilson Hall atrium.

The event will take place between 11:30 a.m. and 1:30 p.m. at 15 tables set up in the atrium.

The goal of Thursday's fair is to disperse information to employees and users about how to stay healthy and safe, with an emphasis on information about the H1N1 flu and winter safety. The fire department will offer winter tips and the ES&H staff will give out information about how to reduce greenhouse gases. ES&H Director Nancy Grossman will give out advice at the Take Five

represents the probability that an event ends up producing a certain number of final state particles.

The recent measurement from CDF has the highest precision over the largest multiplicity range ever studied. Together with previous measurements, it will contribute to phenomenological models and be useful for extrapolations to LHC energies. Additionally, the measurement will help scientists make more precise estimates of the soft backgrounds in many higher energy physics studies that they can't calculate directly using QCD.

— Edited by Craig Group



The CDF scientists who made this measurement, from the left: Niccolo Moggi, Manuel Mussini, Franco Rimondi, all from the University and INFN, Bologna.

Special Announcement

Annual enrollment for health benefits ends tomorrow

The Open Enrollment period for employees to make changes to their medical and dental plans and to enroll in the Flexible Spending Accounts for 2010 ends this Friday, Oct. 23. Enrollment forms, resource sessions information and detailed plan information is available on the Fermilab Benefits [Web site](#) and at the Benefits Office on the 15th floor of Wilson Hall. Please note that you need to re-enroll if you have a Flexible Spending Account and want to maintain it in 2010.

Photo of the Day

Service Awards - 20 years



Thursday, Oct. 22

- Apple sticks
- Minnesota wild rice with chicken
- Tuna melt on nine grain bread
- Italian meatloaf
- Chicken casserole
- Buffalo crispy chicken wrap
- Assorted slices of pizza
- Mandarin chicken

[Wilson Hall Cafe Menu](#)

Chez Leon

Thursday, Oct. 22

Closed

Wednesday, Oct. 28

Lunch

- Flank steak with shitake mushroom sauce
- Ginger scallion rice
- Coconut custard

[Chez Leon Menu](#)

Call x3524 to make your reservation.

Archives

[Fermilab Today](#)

[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

Visit the Fermilab [home page](#)

table.

The event is a follow-up to June's inaugural [ES&H Fair](#), which emphasized summer safety and health tips, such as how to avoid sunburn and lightning strikes. ES&H's Minnie Koch said they hope to continue hosting two annual fairs, one for the warm weather and another for the cold weather.

Koch said they will have the raffle drawings in the afternoon and contact winners by phone.

Special Announcement

Extreme Beam lecture series 4 p.m. Thursday in Curia II

The next lecture of the Extreme Beam lecture series will take place at 4 p.m. Thursday in Curia II. Kenneth Long, from the physics department of Imperial College London, will give a talk titled "The Neutrino Factory: Sensitivity for the Next Decade." A reception will follow.

The lecture series, which will feature talks at Fermilab throughout 2009, will give in-depth information about the science of 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.

In the News

So close, yet so far

From *American Physical Review*, Oct. 16, 2009

Observations of cosmic microwaves from 380,000 years after the big bang have been essential to modern cosmology, but cosmic neutrinos should carry information on the state of the universe when it was less than a second old. In the 23 October Physical Review Letters, a team points out a curious and hitherto ignored fact about these relic neutrinos: because of their masses, they travel more slowly than light does and actually originate from a much nearer region of the universe than the cosmic microwaves. Although detecting cosmic neutrinos is still a long way off (if it's possible at all), the work clarifies the type of information that, in theory at least, could be gleaned from relic neutrinos.

[Read more](#)

Thirteen Fermilab employees received service awards last week for 20 years of service. Front row, from left: Glenn Waver, Bob Woods, Bob Johnson, Selcuk Cihangir, Ken Fidler, Kermit Carlson. Back row, from left: Lenny Spiegel, Don Arnold, Michael Matulik, Gary Lorenz, Joyce Serritella, Lori Limberg and Denton Morris. On the right, Bruce Chrisman from the Directorate presented the award.

Accelerator Update

Oct. 19-21

- Three stores provided approximately 37 hours of luminosity
- TeV power supply (D0Q2) leak repaired
- Linac front end replaced

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

Latest Announcements

[Badminton League open house - Oct. 28](#)

[Annual Enrollment ends tomorrow](#)

[Children's Halloween party tomorrow](#)

[Buttered Rum performs Saturday at Fermilab Arts Series](#)

[Director's Award nominations accepted until Oct. 26](#)

[Conflict Management and Negotiation Skills - Oct. 28, Nov. 11](#)

[Overcome Your Fear of Public Speaking - Oct 29](#)

[Facilitating Meetings That Work - Nov. 4](#)

[Fred Garbo Inflatable Theatre at Fermilab Arts Series - Nov. 7](#)

[Process Piping \(ASME B31.3\) class offered in October and November](#)

["The Night Before Christmas Carol" at Fermilab Arts Series - Dec. 5](#)

[Additional Activities](#)

[Submit an announcement](#)

