

Calendar

[Have a safe day!](#)

Thursday, May 28
2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: Susan Gardner,
University of Kentucky
Title: Dark Matter and the
Transient Sky

3:30 p.m.

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

[Extreme Beam](#) - Physics at the
Intensity Frontier Lecture

Series - One West

Speaker: Janet Conrad,
Massachusetts Institute of
Technology

Title: Neutrinos: To the
Terascale and Beyond!

THERE WILL BE NO
ACCELERATOR AND
PHYSICS TECHNOLOGY
SEMINAR TODAY

Friday, May 29

3:30 p.m.

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

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

Speaker: Bruce Schumm,
University of California, Santa
Cruz

Title: B Factory Measurements
of the $b \rightarrow s(d) g$ Radiative
Penguin Transition Rates

8 p.m.

Fermilab Lecture Series -
Auditorium

Speaker: Dr. Samuel Stupp,
Northwestern University
Title: Nanotechnology: The
Crafting of Self-Assembling
Materials for Medicine and
Energy
Tickets: \$5

[Click here](#) for NALCAL,
a weekly calendar with

University Profile

Baylor University



Baylor University graduate students Karen Bland, Martin Frank and Ben Wu work on an experiment.

NAME: Baylor
University

HOME TOWN: Waco,
Texas

MASCOT: Bear

SCHOOL COLORS: Green and gold

PARTICLE PHYSICS COLLABORATIONS:
CDF

EXPERIMENTS AT FERMILAB: CDF

SCIENTISTS AND STUDENTS AT
FERMILAB: Two faculty, one postdoc and four
graduate students

COLLABORATING AT FERMILAB SINCE:
2005

MAJOR CONTRIBUTIONS: Installing,
commissioning, and maintaining the Run 2B
Level 1 Tracking Trigger (XFT)

PARTICLE PHYSICS RESEARCH FOCUS:
Higgs boson, QCD, searches for new
phenomena

WHAT SETS PARTICLE PHYSICS AT
BAYLOR UNIVERSITY APART? Baylor's
experimental HEP group is relatively young,
yet quickly growing. The group was formed in
2003 when Dr. Jay Dittmann, a Fermilab
Lederman Fellow, was hired at Baylor.

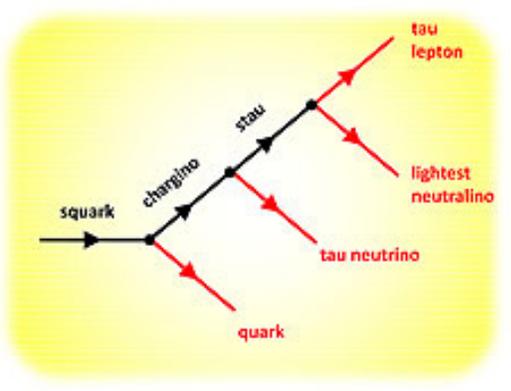
FUNDING AGENCY: Department of Energy

FAVORITE NATIONAL LABORATORY:



Fermilab Result of the Week

Trying to expand the "zoo"



In this analysis, a squark decays in a complicated chain of events, resulting in a quark, a tau neutrino, the lightest neutralino and a tau lepton. Both the neutrino and the neutralino escape, unobserved by the detector. If supersymmetry turns out to be true, the lightest neutralino is a leading dark matter candidate.

The vast numbers of subatomic particles that physicists discovered over the past century are sometimes called the particle zoo. Physicists organized these particles into classes of particles with similar properties. One set of categories includes quarks, which are bound inside protons, and leptons, which include the electron. Another broad way that particles are split is into two categories, called fermions and bosons. Without getting too technical, the difference between these two classes of particles is their subatomic spin. The most familiar fermion is the electron, while the familiar boson is the photon. This particular fermion/boson difference plays a huge role in the different behavior of light and ordinary matter.

One of the most popular theories for physical phenomena beyond what we currently know incorporates a principle called supersymmetry. Supersymmetry is a theoretical idea that states that for every fermion we have observed, there is another, yet-undiscovered, boson (and vice versa.) This theory effectively doubles the number of expected particles.

Theory suggests that the most copiously-produced supersymmetric particles at the Tevatron would be the so-called squarks and gluinos. These particles are the supersymmetric analogues of the quarks and gluons found inside the protons and

links to additional information.

[Weather](#)

 Cloudy
68°/51°

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

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

Thursday, May 28
- Santa Fe black bean
- Steak tacos
- Chicken Wellington
- Chimichangas
- Baked ham & Swiss on a ciabatta roll
- Assorted sliced pizza
- Crispy fried chicken ranch salad

[Wilson Hall Cafe menu](#)

[Chez Leon](#)

Thursday, May 28
- Closed

[Chez Leon menu](#)

Call x3524 to make your reservation.

[Archives](#)

[Fermilab Today](#)

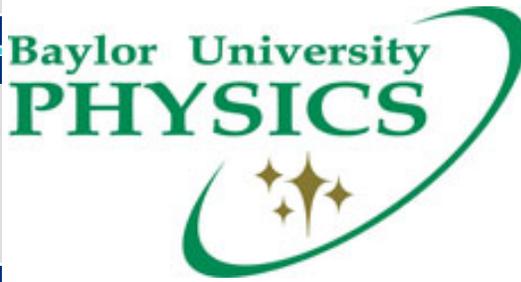
[Result of the Week](#)

[Safety Tip of the Week](#)

[ILC NewsLine](#)

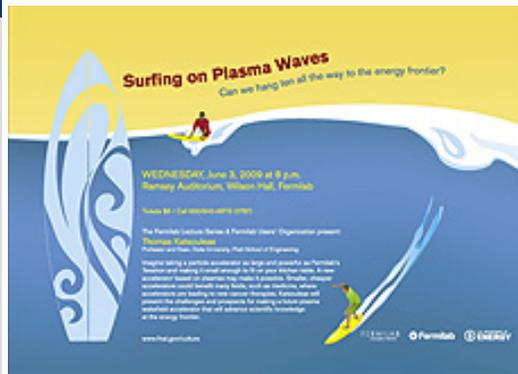
[Info](#)

Fermilab



Feature

Results, future plans at Users' Meeting



Tom Katsouleas, professor and dean, at Duke University's Pratt School of Engineering, will give a public lecture on Wednesday, June 3, titled "Surfing on Plasma Waves: Can We Hang 10 All the Way to the Energy Frontier?"

This year's annual Users' Meeting will feature recent experiment results, the laboratory's future plans and physics updates from Washington D.C. and around the world. The meeting, which will take place Wednesday, June 3, and Thursday, June 4, will provide Fermilab employees and users a chance to learn more about global physics projects and plans for experiments at Fermilab.

All Fermilab employees are invited to attend.

This year's highlights include lectures by: Department of Energy's Mike Procaro, National Science Foundation's Jim Reidy, HEPAP's Mel Shochet, CERN's Sergio Bertolucci, KEK's Koichiro Nishikawa, and Fermilab's Director Pier Oddone. A poster session and banquet will take place on Wednesday, June 3.

A [public lecture](#) will take place at at 8 p.m. Wednesday, June 3, in Ramsey Auditorium given by Tom Katsouleas, dean of engineering at Duke University. He will discuss next-generation particle acceleration using plasma

antiprotons that make up the beams. The theory then predicts that these supersymmetric particles will dominantly decay back into quarks and gluons.

While such a decay chain is the most common chain predicted, it is possible for squarks to also decay into leptons. In this [analysis](#), DZero physicists searched for squarks decaying not into the familiar electrons, but the electron's heavier cousin, the tau lepton. Identifying tau leptons in a detector is much more difficult than the debris associated with quarks and gluons. The events of interest are very complicated, containing the signature of at least two quarks, one tau lepton and missing energy.

This analysis is the first to search for squarks using tau leptons at the Fermilab Tevatron and plays an important role in the ongoing search for supersymmetry. If it is found, the zoo will get much bigger.

-- Don Lincoln



Catherine Biscarat
IPN, Lyon
France

Patrice Verdier
IPN, Lyon
France

[These analyzers played a crucial role in this analysis.](#)



Gérald Grenier
IPNL
Université Lyon 1
France

Ann Heinson
U. of California,
Riverside

Modern particle physics experiments depend on simulating particle collisions and the detector's response to them. This simulation uses what we call "Monte Carlo" techniques. Gerald Grenier and Ann Heinson lead DZero's Monte Carlo event-generator effort.

Accelerator Update

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

Send comments and
suggestions to:
today@fnal.gov

Visit the Fermilab
[home page](#)

waves in energy-frontier machines and the technology's industrial applications.

Registration for the meeting is free. Tickets for the public lecture are \$5 and are available on a first-come, first-served basis. The Festa will follow the lecture in Kuhn Barn and feature a TESLA coil demonstration.

An Outreach Workshop will take place in conjunction with the Users' Meeting on June 4 and 5. It will feature panel discussions, a special outreach colloquium by Michael Turner and the traveling show "[Wonders of Physics](#)".

[Learn more](#)

Special Announcement

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



The sixth lecture of the Extreme Beam series will take place at 4 p.m. today in One West. Janet Conrad, from MIT's department of physics, will give a talk titled "Neutrinos: To the Terascale and Beyond!"

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.

In the News

May 25-27

- Three stores provided ~36.5 hours of luminosity
- TeV quench at DZero

[Read the Current Accelerator Update](#)
[Read the Early Bird Report](#)
[View the Tevatron Luminosity Charts](#)

Announcements

Latest Announcements

[International folk dancing - last at Barn today, cancelled June 4, resumes at auditorium June 11](#)

[Scottish Country Dancing moves to Ramsey Auditorium June 2](#)

[English Country Dancing, June 21](#)

[Free yoga open house](#)

[Users' Office closed May 29](#)

[Asian/Pacific quiz contest winners week 3](#)

[Costco Warehouse Club memberships](#)

[New URA e-mail address](#)

[Computing account requests reach peak season](#)

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

[Argentine Tango classes through June 24](#)

[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](#)

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

Success in coping with infinity could strengthen case for multiple universes

From **Science News**, June 6, 2009

Before ER, House and even Marcus Welby, a TV-doctor show called Ben Casey opened each week with a hand drawing symbols, as the voice of Sam Jaffe identified them one by one: "Man, Woman, Birth, Death ... Infinity."

Those five symbols supposedly encapsulated what medicine was all about. But they could equally well have summarized the story of the universe. Cosmologists, the scholars of cosmic existence, generally concur that the universe is probably infinite. And they are consumed with understanding the universe's birth, the prospects for its death and whether the presence within it of men and women has anything to do with it all.

[Read more](#)

[Python Training June 17-19](#)

[Susan Werner - Singer/Songwriter Performs on Arts Series](#)

[Microsoft Office 2007 help at the Library](#)

[Process piping \(ASME B31.3\) class offered in October](#)

[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](#)

[SciTech summer camps](#)

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

[Additional Activities](#)

[Submit an announcement](#)