

Calendar

[Have a safe day!](#)

Tuesday, Nov. 9
9 a.m. - 4 p.m.

[Computer Security](#)
[Awareness Day](#)

3 p.m.

[LHC Physics Center:](#)
[Topic of the Week](#)
[Seminar](#) - Sunrise WH-

11SE Speaker: Jesse Thaler, Massachusetts Institute of Technology
Title: The Shape of Jets to Come

3.30 p.m.

DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
THERE WILL BE NO
ACCELERATOR
PHYSICS AND
TECHNOLOGY SEMINAR
TODAY

Wednesday, Nov. 10
11:30 a.m. - 1 p.m.

ES&H Winter Fair - WH
Atrium

1 p.m.

[LHC Physics Center:](#)
[Topic of the Week](#)
[Seminar](#) - Sunrise - WH-

11SE
Speaker: Jesse Thaler, Massachusetts Institute of Technology

Title: Event Topologies for Early LHC

2:30 p.m.

[Theoretical Physics](#)
[Seminar](#) (NOTE DATE) -
Curia II

Speaker: Nima Arkani-Hamed, Institute for Advanced Study

Title: Space-Time, Quantum Mechanics and Scattering Amplitudes
3:30 p.m.

DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over

From *symmetrybreaking*

Fermilab physicist transforms dark energy lens into dark matter detector



Presidential Early Career Award recipient Juan Estrada

[Early Career Award for Scientists and Engineers](#). Thirteen U.S. Department of Energy researchers received the award this year.

Estrada spends most of his time building and testing imaging sensors for the [Dark Energy Camera](#). But he has set himself apart by using the same technology in a side project to search for dark matter.

"Juan is relatively new to the dark matter field," said Dan Bauer, deputy head of Fermilab's Center for Particle Astrophysics. "You'd think it'd be enough of a challenge to work on DECam. But he somehow had spare time to think of new ideas."

Brenna Flaughner, Estrada's supervisor, joked, "I don't think he sleeps."

Estrada credited the technicians and engineers from the dark energy search who gave their spare time and expertise to his dark matter search project, called DAMIC for Dark Matter in CCDs.

"Fermilab was in a good position to take advantage of this opportunity because of all the work we had already done for DECam," he said.

The president gives the Early Career Award

A Fermilab physicist recently transformed technology used to search for signs of dark energy into the best detector in the world for spotting low-mass dark matter particles.

The White House honored that physicist, Juan Estrada, on Friday with the [Presidential](#)

Director's Corner

A period of uncertainty



Fermilab Director Pier Oddone

With the changes in the Congress following the mid-term election last week, we have an increased sense of uncertainty regarding our funding for FY 2011 and FY 2012, and hence greater uncertainties for the programs we are embarked on. Not that we are strangers to uncertainty. Even before the election, we did not have a budget for FY 2011, the fiscal year that started more than a month ago. At least, however, the Appropriations Committees of both the House of Representatives and the Senate had marked the Energy and Water Development Appropriations bill, and in normal times we could guess roughly where we would end up. The entire federal government is currently funded under a Continuing Resolution (CR) at mostly the FY 2010 enacted levels (excluding Recovery Act funding) through December 3. The end-game strategy being devised by the current Congress will require at least one extension of the CR.

The situation is now very fluid and could take different paths. The current Congress could pass an omnibus appropriations bill in the lame duck session; however, such action is likely only if both Democrats and Republicans find common ground at a level of spending below the pending appropriations bills. The CR could be extended into next year so that the new Congress can rewrite the currently pending bills at reduced funding levels.

4 p.m.

[Fermilab Colloquium](#) - 1 West

Speaker: Bjarne Stroustrup, Texas A&M University
 Title: Introducing C++0x

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

[Upcoming conferences](#)

Campaigns

[Take Five](#)

[Tune IT Up](#)

Weather



Sunny
67°/47°

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

Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

Tuesday, Nov. 9
 - Breakfast: Bagel sandwich
 - Tomato bisque soup
 - Lemon pepper club
 - Beef fajitas
 - *Korean garlic chicken
 - Grilled chicken Caesar salad wrap
 - Assorted sliced pizza
 - Rio Grande taco salad

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, Nov. 10
 Lunch
 - Stuffed cabbages
 - Apple strudel

Thursday, Nov. 11

each year to about 100 young researchers "whose early accomplishments show the greatest promise for strengthening America's leadership in science and technology and contributing to the awarding agencies' missions." With the grant money from the award, Estrada will be able to build a larger, more advanced prototype of his dark matter detector.

Estrada started at Fermilab as a student from the University of Rochester working on the DZero experiment. As a 32-year-old postdoc, he earned a Wilson Fellowship, which gave him up to five years to study whatever he wanted at the laboratory.

He had worked on cosmology as an undergraduate in Argentina, so he chose to work on the Dark Energy Survey, much to the surprise of his colleagues.

"Nobody on DZero knew that Juan was a closet astrophysicist," said Tom Diehl, Estrada's former DZero colleague who now builds CCDs for the Dark Energy Survey as well.

Estrada builds charge-coupled devices, the same type of imaging sensors found in digital cameras, for the 570-megapixel Dark Energy Camera. These CCDs are specifically designed to capture the light that reaches Earth from extremely distant galaxies and supernovae. The Dark Energy Survey will use data from the camera to search of signs of dark energy, which scientists theorize affects the evolving shape of the universe.

[Read more](#)



Left to right: Technician Kevin Kuk, physicist Juan Estrada, engineer Herman Cease and physicist Ben Kilminster stand in the NuMI hall next to the DAMIC detector.

Special Announcement

ES&H Safety Fair
 Wednesday, Nov. 10 in
 Wilson Hall atrium

Congress could pass the existing bills with a formula to reduce overall spending or continue to fund the government by CR at the FY 2010 level with increases for only a few key initiatives.

As a large number of new players joins the Congress, a period of learning and debate starts during which Members of Congress will reanalyze priorities and seek common ground. It is important for us at Fermilab and for the scientific community generally to describe the opportunities and the benefits that investments in science bring to the nation across so many domains. I know that you share my conviction that science and innovation are the fountains of future prosperity.

In the meantime, we must be extremely careful about our rate of expenditures. Clearly slowing down expenses incurs some penalty in the rate of progress of our program. If we don't, however, we run the risk to be mismatched in funding for our programs in the second half of the year, requiring more disruptive adjustments later. It is important for all of us to be even more frugal than usual and to postpone expenditures that we can make later in the year while we keep successfully delivering our programs.

Special Announcement

Attend Computer Security Awareness Day Today

During this year's Computer Security Awareness Day held today, Fermilab's Computing Division will help you successfully manage computer risks. You can take full courses on computer security or new 30-minute speed sessions from 9 a.m. to 4 p.m. in Wilson Hall. See the complete schedule [here](#).

All employees, friends and family members are invited to attend. Sessions are free and do not require registration.

See the Nov. 5 issue of [Fermilab Today](#) for more information.

Accelerator Update

Nov. 5-8

- Six stores provided ~62.75 hours of luminosity
- Linac RF caused small problem
- 400 MeV area corrector power supply

Dinner
-Closed

[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](#)

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Info

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The ES&H Section will hold a laboratory-wide safety fair from 11:30 a.m. to 1 p.m. on Wednesday, Nov. 10, in the Wilson Hall atrium. At the fair you can learn how to stay safe in winter weather, take the commuting and travel survey and get free goodies and treats.

In the News

How the hunt for the Higgs boson began

From *io9*, Nov. 5, 2010

In this excerpt from Massive: The Missing Particle That Sparked the Greatest Hunt in Science (Basic Books), author Ian Sample tells the story of how Peter Higgs went from being a joke to a legend with just one lecture.

Peter Higgs arrived in Chapel Hill to set up home on September 6, 1965, having left Jody, who was heavily pregnant at the time, with her parents in Urbana, Illinois. At the university, he set about writing his first major paper on the origin of mass. On September 24 he was working in the library of his new department when he was called to the phone. His first son, Christopher, had just been born. Higgs finished the paper in November and sent a copy for publication and a few more to physicists he thought might be interested.

Though it wasn't clear at the time, Higgs's theory pointed to a critical moment in the birth of the universe. In the immediate aftermath of the Big Bang, the cataclysmic explosion that flung the universe into existence, the elementary particles were entirely massless. Then, a fraction of a second after the Big Bang, something happened: an energy field that permeated the fledgling universe switched on. Massless particles that had been zipping around at the speed of light were caught in the field and became massive. The more strongly they felt the effects of the field, the more massive they became. Most scientists concur that time began about 13.7 billion years ago, possibly with the first bang there ever was, but perhaps as just one of many bangs that occur in a cyclic process.

The universe, at first a microscopic ball of intense energy, was too hot for the laws of nature as we know them to yet emerge. But in the blink of an eye (had there been one around to oblige) the cosmos grew to the size of a beach ball and cooled just enough-

replaced

- NuMI had problems with Lambertson trips

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

Latest Announcements

[Indian Creek Rd. closed until 3:30 pm Thursday](#)

[Help ES&H: take commuting and travel survey](#)

[Computer Security Awareness Day - Nov. 9](#)

[Annual Enrollment: deadline Nov. 22](#)

[Stampers club - Nov. 9](#)

[ES&H winter fair - Nov. 10](#)

[Lunch and Learn about Qigong, Mindfulness & Tai Chi Easy for Stress Reduction - Nov. 10](#)

[Free CERN LHC book](#)

[Muscle toning begins Nov. 9](#)

[Free noontime concert: solo piano by Jacqueline Schwab - Nov. 11, Ramsey Auditorium](#)

[Special English Country Dance with Jacqueline Schwab - Nov. 10 in St. Charles](#)

[Bullying: It's everyone's problem - Nov. 18](#)

[Nov. 22 deadline for The University of Chicago Tuition Remission program](#)

[Pedestrian safety awareness for families](#)

[Pedestrian safety at crosswalks](#)

[Accelerate to a Healthy Lifestyle program through Dec. 31](#)

[Chicago Blackhawks November discount tickets](#)

[Submit an announcement](#)

to around ten thousand trillion degrees Celsius-for the Higgs field to come to life. In that eye-blink, the first building blocks of matter were tamed-made heavy and slow, like flies in soup.

The Higgs field is crucial to the structure of the universe and its ability to support life as we know it. Without the field, the elementary particles, the building blocks of matter, would behave like light. The chemistry we are familiar with would not be possible.¹⁹ Matter would not have clumped together into the atoms we see today. Stars and planets would not have formed. The universe would be a lifeless wasteland.

[Read more](#)