

Calendar

Thursday, Nov. 13
1 p.m.
Physics and Detector Seminar
- West Wing, WH-10NW
Speakers: Sami Tantawi,
SLAC National Accelerator
Laboratory; Marc Ross,
Fermilab
Title: Reports from the CLIC08
Workshop
Speaker: Andrei Seryi, SLAC
National Accelerator Laboratory
Title: The ILC Low P Option
2:30 p.m.
[Theoretical Physics Seminar](#) -
Curia II
Speaker: Chris Sachrajda,
University of Southampton
Title: Kaon Physics with Chiral
Quarks
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Accelerator Physics and
Technology Seminar](#) - One
West
Speaker: Henryk Piekarz,
Fermilab
Title: Proton Source for HINS
First Tests

Friday, Nov. 14
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Joint Experimental-Theoretical
Physics Seminar](#) - One West
Speaker: Wade Fisher,
Fermilab
Title: On the Road to the
Higgs: Evidence for
Semileptonic WW/WZ Decays
at DZero

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

Weather

Special Announcement

Lecture Series presents: Facing the frontier, Nov. 14

Fermilab has stood at the frontier of physics for 40 years and is home to trail-blazing scientific breakthroughs, including the discoveries of the top and bottom quarks. This Friday, Nov. 14, at 8 p.m., Fermilab archivist Adrienne Kolb will explain how and why Fermilab came to Illinois and discuss the founders of Fermilab: a maverick cowboy physicist and two Nobel Prize winners. The lecture will be in Ramsey Auditorium.



Adrienne Kolb will give a public lecture on the history of Fermilab this Friday.

Kolb's lecture coincides with the publication of her new book, "Fermilab: Physics, the Frontier and Megascience." It tells Fermilab's history, illuminates the growth of the modern research laboratory and captures the drama of human exploration at the cutting edge of science. Copies of the book will be on sale at Kolb's lecture. For further lectures and events, see the [Fermilab Arts & Lecture series Web site](#).

--Kurt Riesselmann

Feature

Battleships find new use at Fermilab

Photo # NH 91434 USS Baltimore underway in Boston harbor, 15 April 1943

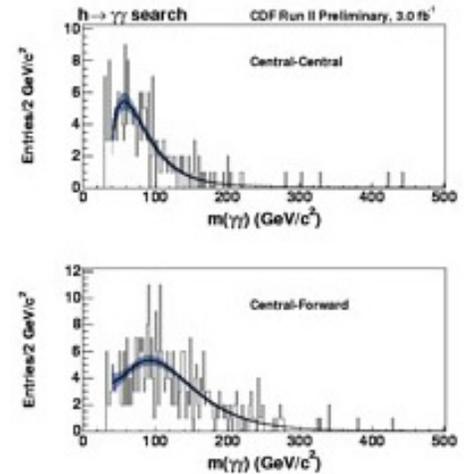


U.S.S. Baltimore underway in Boston Harbor 1943.
Photo credit: U.S. Naval Historical Center

Capt. Christos Zirps spent the end of the Korean War on the cruiser U.S.S. Baltimore, programming the speed and range of targets

Fermilab Result of the Week

High school student helps with Higgs search



If the Higgs boson was produced by a large enough rate of Tevatron collisions, it would be visible as a narrow bump in these distributions.

The Higgs boson is the last particle in the Standard Model to escape detection. In theory, this hypothetical particle is the cause of all mass. Recently, a group of CDF physicists chose to search for the Higgs by examining pairs of photons.

Two young students, one of them from a local high school, completed most of the work for this analysis. Under the direction of more experienced researchers, these students developed new skills and made important contributions to this result (see photo caption below). This arrangement was also a benefit to the CDF collaboration, adding a previously uninvestigated analysis channel.

Scientists expect within the Standard Model that the Higgs will decay into photon pairs less than two or three times for every thousand Higgs bosons produced, an event rare in itself. The Higgs is much more likely to decay into bottom quarks. So, why did the CDF team choose to use photons? The reason is that some theories beyond the Standard Model suggest that the Higgs may not interact with fermions, particles including electrons and quarks. This means that the Higgs can't decay directly to bottom quarks and would instead decay to photons more often.

In the diphoton mass distribution, the Higgs

 PM light rain
56°/44°

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

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

Thursday, Nov. 13
- Minnesota wild rice w/chicken
- Tuna melt on nine grain
- Smart Cuisine: Italian meatloaf
- Chicken casserole
- Smart Cuisine: vegetarian salad wrap
- Assorted sliced pizza
- Mandarin chicken

[Wilson Hall Cafe menu](#)

[Chez Leon](#)

Thursday, Nov. 13
Dinner
- Closed

Wednesday, Nov. 19
Lunch

- Asian grilled flank steak with rice noodles and vegetables
- Coconut caramel cake

[Chez Leon menu](#)

Call x3524 to make your reservation.

[Archives](#)

[Fermilab Today](#)

[Result of the Week](#)

[Safety Tip of the Week](#)

[ILC NewsLine](#)

[Info](#)

and standing watch. The same armor-plated ship took him to Guantanamo Bay and the Panama Canal before the Navy decommissioned it in 1956.

Zirps has great respect for the ship and wants to make sure people remember the good it did in the military and afterward, so he tracked down its parts, which led him to Fermilab.

In 1973, Fermilab ordered steel from the U.S. S. Baltimore to use as shielding for particle beams. Fermilab also obtained steel from 17 other Navy ships, including nine other cruisers, five aircraft carriers and three submarines to shield beam lines at Fermilab.

Fermilab ordered at least 3,000 tons of armor plate to be shipped at about \$50 a ton.

“Right after World War II, the Navy was decommissioning things pretty rapidly,” said John Peoples, former Fermilab director.

Ship armor serves as an inexpensive high-density material used to filter background particles produced in collisions that can obscure rare events scientists want to study.

“There was no way we could do our experiment without metal shielding,” Peoples said. “(The background particles) just swamped our detector.”

Zirps is working to add a note about the fate of the steel from the U.S.S. Baltimore to a plaque commemorating the ship in Baltimore.

He is glad the ship that once carried President Franklin Roosevelt to a meeting at Pearl Harbor is still serving the United States, this time in the race for scientific discovery.

-- Kathryn Grim

[In the News](#)

Fermi scientist brings telescopes into focus

From *The Courier News*, Nov. 10, 2008

Telescopes have seen vast changes since Galileo Galilei built the first telescope exactly 400 years ago.

To illustrate some of those changes, Fermilab scientist Donna Kubik displayed three different types of telescopes Sunday during a program at the Midwest Museum of Natural History in Sycamore.

boson events would be visible as a very narrow peak. Unfortunately, no such peak was observed in the data (see the figure). Although a Higgs boson was not observed, the result allows scientists to exclude theoretical models that predict it should have been observed. This result excludes fermiophobic Higgs masses below 106 GeV/c², the strongest exclusion to date from a hadron collider.

CDF scientists are currently working to apply this analysis to the Standard Model search. Once the extra Standard Model production modes are included and optimized, CDF scientists hope the diphoton channel will provide another illuminating result.

Read more about the analysis [here](#).



Two students played major roles in this analysis: Callie Demay (top right), an undergraduate from the University of Illinois at Urbana-Champaign, helped optimize the analysis, and Jamie Ray (the horizontal bar of the H), a high school student from IMSA, assisted with the calculation of efficiencies and helped finalize the results. Craig Group (left) and Ray Culbertson (right), both of Fermilab, directed this analysis.

[Accelerator Update](#)

Nov. 10-12
- TeV turn-on completed
- Two stores provided ~13 hours of luminosity
- Pelletron brought back online

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

[Announcements](#)

Fermilab Today

is online at:

www.fnal.gov/today/

Send comments and suggestions to:

today@fnal.gov

The presentation, "Seeing Is Believing: Telescopes on Earth and in Space," included a lecture by Kubik about current and past telescopes, and an opportunity to peer through some telescopes available to amateur astronomers today.

The telescopes displayed included the Newtonian, Malcsutov-Cassegrain and a scaled version of the Blanco telescope.

[Read more](#)

[Have a safe day!](#)

[Fermilab health fair, chiropractic presentation Nov. 13](#)

[International Folk Dancing, Nov. 13](#)

[Public lecture on history of Fermilab Nov. 14](#)

[Join Fermilab volleyball, training](#)

[Barn dance Sunday, Nov. 16](#)

[NALWO Thanksgiving feast Nov. 17](#)

[English Country Dancing, Nov. 23](#)

[Director's volunteer award Nov. 25](#)

[Exciting Explorations! child care program offered Nov. 24-26](#)

[Additional Activities](#)

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