**National Lab Day brings Fermilab physics to students**

Fermilab scientist Al Sondgeroth demonstrates force and motion to students from Annunciation BVM School in Aurora.

“I want to try, too!” This was the chorus that rang out across Jennifer Wardynski’s sixth grade class last Tuesday, when Fermilab’s Al Sondgeroth got students involved in a demonstration of angular momentum at Annunciation BVM elementary school in Aurora.

Sondgeroth was one of 20 Fermilab volunteers who gave hands-on presentations in area elementary and high schools last week to celebrate National Lab Day. His presentation gave students an opportunity to experience Issac Newton’s laws in action.

“It helped bridge the gap between the abstract concepts of physics and real-world applications that are all around us,” Wardynski said.

In addition to Sondgeroth’s presentation on force and motion, volunteers talked about topics such as electricity and magnetism, light and color and the physics of sports.

On Thursday, Fermilab Deputy Director Young-Kee Kim spoke to the young women in teacher Falguni Soni’s chemistry class at Annunciation BVM School. He discussed what it is like to be a physicist and the exciting experiments that take place at Fermilab.

**IB1 Test Facility prepares for things to come**

Magnets and radio-frequency cavities are at the heart of particle accelerators, generating the magnetic and electric fields that bend, shape and accelerate a beam of particles. The cost and scientific potential of particle accelerators, such as the proposed Project X, strongly depends on the performance of these critical components.

Superconductivity now is the key technology to produce the best magnets and RF cavities. Advancing this technology requires adequate facilities with the infrastructure to test superconducting magnets and RF cavities under standard and extreme operating conditions. Those facilities also provide the testing that is necessary to ensure the quality of magnets and RF cavities before they are installed in an accelerator.

At Fermilab, the Industrial Building 1 Test Facility provides this infrastructure. The IB1 Test Facility, which is part of the Technical Division complex’s industrial buildings, has a very successful history. For more than 30 years, it supported conventional and superconducting magnet testing for projects such as the Main Ring accelerator, Tevatron, Superconducting Super Collider dipoles, Recycler and LHC interaction region quadrupoles. In the last few years, we have used the facility to test magnets for the LHC Accelerator Research Program and Fermilab’s High-Field Magnet Program as well as corrector magnets for the Booster accelerator and solenoids for a High-Intensity Neutrino Source.

In July 2007, we expanded the scope of...
Kim discussed the field of particle physics and some of the scientific mysteries that Fermilab pursues. She also encouraged the girls who have an interest in science and advised them not to be daunted by a field historically dominated by men.

Many of the students said the presentation helped them relate the science that they are learning about in the classroom to the physics at Fermilab.

“It was all really interesting,” said junior Mary LeDoux. “I had heard some of the information about science done at Fermilab before but it really helps to hear it all again because these are very deep concepts.”

National Lab Day is a response to President Obama’s call to encourage students across the country to learn about math, science, technology and engineering. Over the course of the week, Fermilab presentations reached about 2,500 elementary and high school students.

— Daisy Yuhas

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### In the News

**Search for dark matter still empty-handed, scientists say**

**From Space.com, May 10, 2010**

The search for elusive dark matter is still drawing a blank, according to new results from one of the most powerful experiments currently hunting for the invisible stuff.

The XENON100 experiment buried deep underground in Italy is one of a handful of efforts to directly detect dark matter, a substance thought to be plentiful in the universe, despite the fact that our telescopes can’t see it. Astronomers can detect dark matter's gravitational effects on normal matter, but have not yet confirmed a direct measurement of the sought-after substance.

While a few teams have reported potential sightings of the strange stuff, the new results from XENON100 — which its scientists say is the most sensitive search to date — suggests those possible signals were not dark matter. If they were,
Dear Fermilab community,

The Punahou community is very thankful to Pier and Barbara Oddone for talking to students and faculty from Punahou School, Sacred Hearts School, Roosevelt High School and Kahuku High School. The kids were fascinated by Mr. Oddone's accounts of his life journey, mystified by the mysteries of the universe and had their curiosities piqued by all of the "unanswered" questions in particle physics.

During his visit, Mr. Oddone held an informal talk, gave a lecture, held question and answer sessions, signed autographs and took pictures.

En route to his next destination, Mr. Oddone navigated through gawkers, hangers-on and particle physics fans. The Punahou campus continued to remain abuzz about how nice, genuine, and down-to-earth both Mr. and Mrs. Oddone were.

We are grateful to Carlyn Tani for taking photos during the event, and thankful to the student from ITV who recorded the events.

I would also like to express thanks to Darcy Iams, the physical plant, and security at Punahou for making the visit possible and to Marge Bardeen, Michelle Gleason and Bob Peterson at Fermilab for having the vision, energy and enthusiasm to share their passion for physics.

Aloha,

Johannes Adams
Fermilab Director Pier Oddone poses with students in Punhau School in Hawaii.