

Graduate Student Wins Top Award for Particle Physics Dissertation

March 20 2006

Maria Florencia Canelli, a recent doctoral student at the University of Rochester, won the American Physical Society's 2005 Mitsuyoshi Tanaka Dissertation Award in Experimental Particle Physics.

Her dissertation, completed in 2003 at Fermi National Accelerator Laboratory in Batavia, Ill., under the supervision of Thomas Ferbel, professor of physics at Rochester, bested all other doctoral theses from around the world. The Tanaka Award recognizes exceptional young scientists who performed outstanding original doctoral work in experimental particle physics.

"Florencia was an inexhaustible bundle of energy and great fun to work with during her graduate years," said Ferbel. "Her development at Fermilab has been quite breathtaking, and she continues to impress me with her determination, her vigor, and her insights."

Canelli helped develop and implement a new and far more effective technique to measure the spins of "W bosons." The standard model of particle physics predicts that these W bosons have negative helicity, meaning they spin like left-handed screws. Finding evidence for W bosons of right-handed helicity would revolutionize the currently accepted understanding of particle interactions. This makes the measurement extraordinarily important to physics.

Canelli says she felt "proud and thankful" when she heard that she won the award, which consists of \$1,500 and an allowance of up to \$1,000

for travel to attend the annual meeting of the Division of Particles and Fields where the award will be presented. "I could never have done this without the help of Tom Ferbel," said Canelli.

Canelli is currently a postdoctoral student at the University of California at Los Angeles and is stationed at Fermilab where she is the head of a group studying a top quark experiment. Before coming to Rochester, Canelli studied at the Universities of Asuncion, Paraguay, and Buenos Aires, Argentina. She has been very active in outreach activities, and helped found the Young Particle Physicists organization. She served as a member of Fermilab Users' Executive Committee, and as a representative of the Graduate Student Association at Fermilab. Canelli also received the Frederick Lobkowitz Thesis Prize at Rochester in 2004, the New Talents Prize, and the Chien Shiung Wu Scholarship Award at the Erice School in 2001. Last year, Canelli won the University Research Association's award for the best doctoral thesis at Fermilab.

Source: University of Rochester

Citation: Graduate Student Wins Top Award for Particle Physics Dissertation (2006, March 20) retrieved 3 May 2024 from

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