

# Student helps improve life-saving air monitoring system

Air monitoring can save workers' lives by alerting them to the presence of harmful pollutants and directing them to vacate the area. Continuous air monitoring (CAM) systems constantly sample the air in radiological laboratories and other workspaces, such as the Lab's Plutonium Facility, for the presence of airborne radioactivity.

Lab student April Martinez played a crucial role in improving the CAM system at Technical Area 55, said David Wannigman of Health Physics Operations (RP-1). The state-of-the-art system notifies workers to vacate the area when particles of plutonium and other actinides are detected in the workplace.

Martinez recently tested TA-55's CAMs on a daily basis for sensitivity, how low the alarms were set, and how fast they alerted.

"We tried to reduce the response time from minutes to seconds to see how long it would take for a CAM to alarm and whether an individual in the field had enough time to get out before being contaminated," she said.

Numerous tests were necessary, as lowering the CAM alarm set points and reducing response time were balanced against the risk of generating false alarms, Wannigman explained.

Martinez said this was the first time she had tested CAMs.

"That made [working with them] a challenge, but in a good way," she said. "I had the opportunity to learn things I never thought I'd learn."

Martinez graduated from Española Valley High School in 2008 and is majoring in software engineering at Northern New Mexico College. She came to Los Alamos in August 2008



*April Martinez improves the continuous air monitoring system for TA-55 by measuring the instrument's response to different radioactive sources. Photo by Sandra Valdez*

through the Lab's undergraduate program and, because of her work in RP-1, has become interested in radiation protection.

"I consider working at the Lab a great accomplishment," Martinez said. "I like the environment and the people around me; everyone is really nice and very helpful." She added, "I would recommend working at the Lab to my friends and anyone willing to learn and continue growing their knowledge, as well as their careers."