Alesandra Morales Velez

In recognition of her commitment to transportation research and her academic accomplishments, the University of Rhode Island Transportation Center (URITC) selected Alesandra Morales Velez as its 2013 Outstanding Student of the Year.

Born and raised in Puerto Rico, Morales Velez will complete a PhD in Civil and Environmental Engineering from the University of Rhode Island next fall.

When Morales Velez found out that she had been named the 2013 Student of the Year, she was flattered.

“The award means that hard work pays off,” said Morales Velez. “It is such an honor for me to accept it.”

Morales Velez was nominated for the award by Chris Baxter, URI Professor of Civil and Environmental Engineering and Ocean Engineering.

Baxter cited the role Morales Velez played in securing a National Science Foundation award and her contributions to several research projects.

“Dr. Baxter and I wrote a proposal on the ‘Evaluation of Field Based Liquefaction Approaches for Calcareous Sand Using Shear Wave Velocity’ and it got funded,” recalled Morales Velez.

One of the best research experiences Morales Velez had at URI happened in the summer of 2007.

“I did an internship with the Engineering Research and Development Center at the Cold Regions Research and Engineering Laboratories, a branch of the United States Army Corps of Engineers, located in New Hampshire,” said Morales Velez. “I worked on the Advanced Airfield Damage Technologies project. The main task was to develop advanced airfield damage repair technologies for sustain repair of bomb craters on airfields. As an intern I was in charge of the laboratory investigation of the low temperature performance of rapid setting concrete materials and of the development of equipment recommendations for mixing and placing rapid setting materials.”

For her master’s degree Morales Velez worked with crushed limestone aggregates (CLA) from Puerto Rico. This material is extensively used in civil engineering construction. Crushed limestone aggregates are commonly used in North America as fill material for road construction and embankments. They are traditionally considered a good to excellent quality mineral aggregate with adequate durability performance.

“The research involved evaluating durability characteristics, and possible short-term degradation, of two CLA materials mined from two different quarries in Puerto Rico representing different geologic formations,” explained Morales Velez. “The durability assessment consisted in tracking variations of mechanical properties of CLA samples tested after different periods of submergence in fresh and salt-water environments with a maximum submergence time of 150 days. The geotechnical tests included Slake durability, Los Angeles Abrasion, 1-D compression, and triaxial compression.”