

## Maria Briones receives National Award as Top Environmental Engineering Graduate Student



Maria Briones (Department of Civil & Environmental Engineering) will be awarded the W. Brewster Snow Award on April 18, 2018 at the National Press Club (Washington, DC). This award is given annually by the American Academy of Environmental Engineers and Scientists (AAEES) to recognize an environmental engineering graduate student in the United States who has made significant accomplishments in an employment or academic engineering project.

Upon hearing she would be receiving the W. Brewster Snow Award Maria felt overjoyed and honored that her experiences and achievements were noticed by distinguished professionals in the field that the Academy represents. She commented, "It is certainly motivation to keep working hard in every aspect of my life."

She is currently a master's candidate at the University of South Florida and her current GPA is 3.91. She will graduate in 2018 with her MS degree in civil engineering and a concentration in International Development Engineering. The [International Development Engineering Program](#) at the University of South Florida enabled Maria to integrate her graduate coursework and thesis research with two plus years of training and service in the Peace Corps as a water/sanitation/hygiene (WaSH) engineer.

Maria graduated from the University of Rhode Island in the International Engineering Program with a BS in civil engineering and a BA in Spanish language. Through that program she spent a year in northern Spain studying and working at a research facility, Centro de Estudios e Investigaciones, in the field of computational fluid dynamics to model aeration efficiency in wastewater treatment. Maria also received experience in Dr. Vinka Craver's laboratory at University of Rhode Island working on developing a method to measure nitrous oxide levels of reactivated sludge that is used for treatment of wastewater.

For her MS thesis research, based on her time and experience in Panama (RPCV '15-'17), she performed a field validation of a software program used to design a gravity fed water distribution system. Gravity flow water systems are a common method to provide improved water to rural residents. These water systems consist of a springbox that capture water in the mountains, transports the water to a storage tank through extensive piping and possibly break-pressure tanks and sediment cleanout valves, and subsequently through distribution piping that leads to tapstands located outside of individual homes. Maria used her field measurements to validate results generated from a design computer program called Neatwork, against field data she collected in a rural community in Panama. Her research is important because it will provide development engineers and communities members better information on where to locate flow reducers to ensure equal water pressure and equitable access to water in a community.



**Photo.** Maria managing villagers constructing their community's water storage tank.

“Our department is so proud of Maria’s many accomplishments, as a student, researcher, practitioner, and importantly as an engineer who values service and wants to use her engineering skills to make the world a better place,” stated Professor James Mihelcic, her graduate advisor.

While in Panama Maria designed and assisted a community of 100 people in constructing their own gravity flow water system. She also worked with villagers to improve their access to improved sanitation through the design and construction of latrines. She also was involved in training local community members who are responsible for managing their own water system. Her work in Panama is significant because currently 780,000 people in the world still do not have access to an improved water source and 2.4 billion still do not have access to improved sanitation.

Maria has been an active member of Engineers for a Sustainable World, American Society of Civil Engineers, and Theta Tau Engineering Fraternity. Maria currently works part-time at Jacobs Engineering Group in the water sector while she completes her MS thesis requirement. There she supports the project management of storm and wastewater projects. Maria expects to defend her thesis at the end of spring semester. The Academy's Awards Luncheon and Conference will be held at the National Press Club in Washington, D.C., on Thursday, April 19, 2018.