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USF engineering students win design competition

***Florida Water Environment Association win sends USF team
to national competition in New Orleans***

TAMPA, Fla. (May 25, 2010) – A two-member team from the University of South Florida won a student design competition that puts them in competition on the national level for one of the sustainability world’s most prestigious prizes. Engineering students Angela Krause and Madelyn Rubin won the [FWEA](#) (Florida Water Environment Association, a chapter of the [Water Environment Federation](#)) Water/Wastewater Student Design Competition in Orlando and head to New Orleans in October to pit their design for a waste water treatment facility in Bolivia up against designs from around the United States.

Krause and Rubin are in USF’s [International Capstone Design](#) program. This is a [College of Engineering](#) program that requires students to “generate engineering work that benefits a developing country and their people.”

Their “matadero” (slaughterhouse) team travelled to Bolivia over Christmas break to collect data and work with city and local officials in a rural town where domestic and commercial raw sewage currently flows into the local river. They decided to work on a project to mitigate the slaughterhouse’s contribution to the resulting pollution and contamination. After confronting numerous obstacles, including location, limited electricity and budget constraints, they came up with a customized five-stage design, one that made sense for the circumstances and the local culture in the town of Colcapirhua near Cochabamba.

Rubin, who just graduated with a degree in civil engineering, says the decision to enter the FWEA competition served to validate her team’s hard work.

“When you’re a student, you’re kind of on the outside, but it means a lot to have your work so well-received by people who are now your peers, in the ‘real world.’ It’s great to be recognized for something that has consumed my life for the past year!”

FWEA is the Florida member association of the international Water Environment Federation (WEF). WEF is a not-for-profit educational and technical organization that brings together 40,000 water

quality experts throughout the world. The contest called on competing teams to make recommendations and create fresh solutions “to real-life environmental issues and wastewater projects.”

The students talked with the judges afterward to get recommendations for the national competition. "One of the judges said that we did a great job and basically recommended the importance of stressing that our project was ‘real-world’ and to let them know we ran into obstacles during our design and had to reassess the overall treatment design using water conservation, etc. He didn't really have anything negative to say about the presentation. That gives us a lot of hope. But we’re working to perfect our presentation, nonetheless,” said Krause.

[Dennis Magolan and Linda Phillips](#), lecturers and Patel Associates in USF’s Civil and Environmental Department could not be more proud of their students.

“Dennis and I are thrilled with the effort since it is our first year here at USF with the ICD program,” said Phillips. “We imagine that their U.S. and Bolivian mentors will be proud as well.”

The ICD program promotes an environment where students can generate engineering work that benefits a developing country and its people.

“Our hope with this project class is that students will be inspired with the vision of lifelong learning, giving, and community service,” said Phillips. “The experience gained here should serve as a strong foundation for their careers and their lives.” Students learn about other cultures as they work with local people to develop relatively “low-tech” projects that use simple tools and techniques in the building of construction projects.

“Our students gain experience and understanding of the implications of design and all aspects of construction in a most fundamental way on a manageable scale,” Phillips said. “And by working with local people and government officials, they begin moving to a global perspective. This is the kind of experience that improves their teambuilding and project management skills, their communication and problem-solving skills.”

Rubin is a prime example. The Panama City native transferred to USF from American University in Washington, D.C. and has found that studying engineering at USF offers her exactly the global perspective she wanted and has set her on her life’s path.

“Water is a global necessity and a basic human need; I want to make this a focus of my professional career.”

Phillips, with a background in civil engineering, and Magolan, with construction engineering, have jointly run similar international capstone programs in Bolivia and the Dominican Republic since 2000. They are both contributors to the Field Guide in Environmental Engineering for Development Workers: Water, Sanitation, Indoor Air, (American Society of Civil Engineers (ASCE) Press, 2009).

The University of South Florida is one of the nation's top 63 public research universities and one of only 25 public research universities nationwide with very high research activity that is designated as community engaged by the Carnegie Foundation for the Advancement of Teaching. USF was awarded \$380.4 million in research contracts and grants in FY 2008/2009. The university offers 232 degree programs at the undergraduate, graduate, specialist and doctoral levels, including the doctor of medicine. The USF System has a \$1.8 billion annual budget, an annual economic impact of \$3.2 billion, and serves more than 47,000 students on institutions/campuses in Tampa, St. Petersburg, Sarasota-Manatee and Lakeland. USF is a member of the Big East Athletic Conference.

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