

SCHOOL OF SUSTAINABLE ENGINEERING AND THE BUILT ENVIRONMENT

Civil, Environmental and Sustainable Engineering

INTERSECTIONS

Future geotechnical engineers get competitive

Four Arizona State University civil engineering students took on competitors from across the country Feb. 23 in the **2010 National Geo-Challenge at the Geo-Institute Annual Meeting** in West Palm Beach, Fla.

Undergraduate students **Daniel Rosenbalm** and **AJ Kerin** and graduate students **Zbigniew (David) Czupak** and **Mohamed Arab** are studying in the geotechnical engineering program in the School of Sustainable Engineering and the Built Environment.

They made up one of the 12 teams, chosen from among 26 entrants, to compete in the Geo-Challenge. The competition tested students' skills in sustainable construction methods by requiring them to design and build a small-scale "mechanical stabilized earth wall," similar to highway border walls. This kind of wall "employs reinforcement within the soil itself to support a vertical wall face, minimizing the use of concrete, steel, or other processed material in the construction wall," said ASU associate professor and geotechnical engineer **Edward Kavazanjian**.

In addition to the quality of the team's wall design, the structures were judged on the weight load they could support, the

amount of reinforcement used and the aesthetics of the construction. "This was a great opportunity to design a structure and see it actually work, and to have the most famous people in the field review it and watch me build it," Arab said.

Established by the American Society of Civil Engineers, the Geo-Institute is a specialty organization representing more than 11,000 geotechnical engineers. Geotechnical engineers study the behavior of earth materials. Through determining the physical, mechanical and chemical properties of earth materials – such as soils and rocks – they provide knowledge for assessing risks from earthquakes, landslides, soil erosion and similar hazards. Their expertise is essential to planning for safe and sustainable construction of high-rise buildings, roads, bridges, dams, tunnels, reservoirs, landfills and hazardous-waste containment sites.

Invitation to the competition was based



Members of ASU's National Geo-technical Challenge team are (from left): Zbigniew (David) Czupak, Daniel Rosenbalm, AJ Kerin, and Mohamed Arab

on ranking of the team's wall project design report by a panel of specialists assembled by the Geo-Institute. ASU's Geo-Challenge team earned a \$1,000 travel scholarship to attend Geo-Institute Annual Meeting by placing in the top six among the 12 selected teams for the quality of their design report.

The ASU team finished fifth, the highest finish among first-time National Geo-Challenge competitors. The team's wall successfully held a design load of 50 pounds and the maximum additional load of 100 pounds without failing.



Fellowship award

Elham Bani Hashem

a graduate research assistant working under the supervision of **Dr. Claudia E. Zapata**, was accepted by the **International**



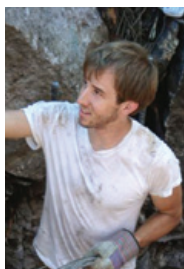
Road Educational Foundation's (IREF) executive committee as an Executive Fellow and lifetime member of the International Road Federation (IRF) Fellowship Orientation and Executive Leadership Program.

The IREF Fellowship is a prestigious award given only to one student per university. The award included attendance at the 2010 Executive Leadership Fellowship Program, which was held in conjunction with the Transportation Research Board Annual Meeting (TRB) in Washington D.C. The selection of the fellowship awardees was based primarily on their potential as "transportation leaders and decision-makers" in their home countries in the future.

Student bridges engineering and entrepreneurship

Bobby Cottam

a junior studying in SEBE is among the first to take advantage of a new opportunity for ASU students to put innovative ideas



into action solving community problems. He's involved in the Entrepreneur Advantage Project which provides students opportunities to pursue entrepreneurial ventures.

Cottam is president of the ASU civil engineering club Bridges to Prosperity. Through the **Entrepreneur Advantage Project**, Cottam and his team were awarded a grant that jump-started their project to design and construct a bridge in the rural town of Bocuire, in the Central American republic of Honduras.

Working with town residents, the team constructed a 40-meter-long footbridge that now links seven neighboring communities in the area. During the country's rainy season, access to the communities was possible only by time-consuming treks on unsafe routes. The new bridge enables children in Bocuire to travel to schools using a much safer and shorter path.

NCAR graduate student visitor program

Hernan Moreno, a Ph.D. student working under Professor Enrique Vivoni

was awarded a three month stay at the **National Center for Atmospheric Research (NCAR)**, Research Applications Laboratory (Boulder).



The Graduate Student Visitor Program is designed to provide NCAR staff opportunities to bring graduate students to NCAR for 3 to 12 month collaborative visits with the endorsement of their thesis advisors and in pursuit of their thesis research.

During his visit, quantitative precipitation estimations and forecasts will be used as precipitation inputs to evaluate the performance of a distributed flood forecasting tool in an ensemble framework that accounts for parameter and initial condition uncertainty.

Outstanding engineering student for 2009

Nathan Dunkin

has been awarded the **2009 Outstanding Engineering Student of the Year for the Greater Phoenix Area Engineer's Week**. This award



recognizes students that have made

outstanding contributions to the engineering profession in 2009. The engineering awards presented during National Engineers Week celebrate and acknowledge the vital part engineers play in our complex world.

Nathan is an exceptional student who carefully balances an exemplary academic record with work and research experience, while also pursuing personal interests including Spanish fluency and extending aid to developing countries

Transportation scholarship

Maria Carolina Rodezno

a Ph.D. candidate in the Civil, Environmental and Sustainable Engineering program received the **2009-2010 Helene M. Overly Memorial**



/ Esther Kmetty Scholarship offered by the Phoenix Metro Chapter of the Women's Transportation Seminar (WTS).

Rodezno received this recognition during the 2010 Annual Scholarships and Awards Ceremony on March 6, 2010. This scholarship was established in 1981 by WTS to encourage women to pursue career paths in transportation. The scholarship recognizes women, enrolled in a full time graduate degree program, who plan to pursue a career in a transportation-related field. The scholarship is very competitive as it is based on the applicant's specific transportation accomplishments, goals, and academic record.

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ASU engineering student goes international

Environmental engineering major **Nathan Dunkin** spent 13 weeks this past summer working in the United Arab Emirates and Qatar. As an intern for Stanley Consultants, an international engineering, environmental and construction services company and a member of the CESE Friends of Civil Engineering, Dunkin worked on an expansion project for the Abu Dhabi International Airport, helping design the water and electrical utility systems for a new terminal, and was a civil inspector and assistant to the project manager for a cooling plant for the city of Abu Dhabi.

In Doha, Qatar, he spent eight weeks working on a \$1.5 billion water and wastewater treatment facility and pipe works project, serving as a civil inspector during installation of the



wastewater mainlines – a process that involved tunneling a 9-foot-diameter pipe 12 stories underground across a distance of more than 20 miles.

The opportunity to work in the Middle East arose in 2008 when Dunkin was awarded a scholarship from Stanley Consultants. This was the first time the company sent an intern overseas.

Greetings from CESE

Exciting news is coming from our Civil, Environmental and Sustainable Engineering program at ASU. Our undergraduate program has been growing and currently we have a little over 600 students. This past year CESE graduated 92 BSE, 25 MS and MSE, and 10 Ph.D. for a total of 127 students. The ABET review for our undergraduate Civil Engineering degree was very successful last fall and we are expecting to get the formal response from ABET this summer. We are also in the process of establishing a new sustainable engineering concentration within our undergraduate BSE degree starting this fall. The new concentration will help apply the sustainable practices in all areas of urban infrastructure that currently exist within our degree. This new concentration will keep our program competitive and current with both academia and industry. We are currently developing and updating several courses to emphasize the sustainability approach.



Mike Mamlouk, Ph.D., P.E.
CESE Program Chair

Pacific Southwest Regional Conference



The ASU American Society of Civil Engineers (ASCE) student association recently participated in the Pacific Southwest Regional Conference held in Las Vegas, NV. The group earned many awards, including 2nd place in multiple steel bridge categories (speed, economy, and construction aesthetics), concrete canoe technical presentation, geotechnical, and tug-of-war. They also placed highly in other competitions including overall steel bridge, volleyball, and basketball. In between events, the team managed to enjoy the Las Vegas scenery, ranging from Lake Mead and the Hoover Dam Bridge to the Strip! Congratulations to all participants – Go devils!

Top: Concrete canoe display:
Devils du Soleil theme

Left: Environmental team treating their
mystery water.

L to R: Joy Marsalla, Stephanie
Templeton, Michaela Doherty, Sarah
Young and Brian Ivey



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Friends of Civil Engineering (FOCE)



Bruce P. Larson, P.E.
Senior Vice President

RBF Consulting has been a strong supporter of Friends of Civil Engineering (FOCE) since its inception. We are always looking for a way to give back to the university that trains some of our future engineers. We are happy to provide an opportunity for the Civil, Environmental and Sustainable Engineering program to be able to provide scholarships, textbooks for seniors, student travel to conferences, mixers to bring students and the industry professionals together, and anything

else the director of the school deems necessary for the improvement of the program. I encourage all firms that are not currently members of FOCE to take advantage of this opportunity to have closer access to the civil engineering students and provide discretionary funds to the school to help strengthen the program.

To become a Friend of Civil Engineering contact judy.reedy@asu.edu or visit the website at <http://engineering.asu.edu/sebe>.

Please accept this gift in support of the School of Sustainable Engineering and the Built Environment (SSEBE).

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