Department Newsletter

DREXEL UNIVERSITY
Civil, Architectural, and Environmental Engineering
College of Engineering

Civil, Architectural, and Environmental Engineering — Spring 2013

CAEE Department Researchers to Monitor Javits Convention Center Green Roof

Dr. Franco Montalto was recently awarded a project to monitor energy and water benefits of the soon-to-be-completed green roof on New York City's Javits Convention Center. This green roof will be the second largest in the country, and the largest in the Northeast. This green roof will not only add to the physical attraction of the renovated Convention Center but it will also collect and absorb a substantial amount of annual rainfall, an effort to minimize city run-off. It will also conserve building energy and assist with maintaining steady interior building temperatures, which will bring the renovation project closer to achieving its goal of LEED certification.

Dr. Montalto and a team of his researchers from his **Sustainable Water Resource Engineering Laboratory** recently installed two of the four climate monitoring stations on the seven acre green roof. One of these stations was installed on a completed portion of the roof, while the other was installed on an unfinished section. In addition to these climate stations, flumes, thermistors, soil sensors and a series of weighing lysimeters will be installed within the green roof itself. Together, these instruments will be used to evaluate what effect the green roof is having on its immediate microclimate, how much rainwater ultimately runs off and/or evaporates from its surface and to what extent the roof -and the intake for the convention center's air conditioning system- is cooler once the vegetation is in place.

The Drexel University graduate students working on the project are **Lauren Smalls-Mantey**, **Bita Alizadehtazi** and **Scott Jeffers**. Co-op students **Alex Little**, **Sam Schneider**, **Anika Vittands**, and **Jordan Solomonic** are also working on this project. The Cooper Union for Advancement of Science and Art will be working with Drexel to monitor this data.

Digital Building Concentration

The CAEE Department will be adding a new concentration to the Bachelors of Science program in **Architectural Engineering**. This new concentration, **Digital Building**, will complement the program's existing Mechanical and Structural concentrations.

Digital Building will provide an integrated yet streamlined area of study for students who wish to focus on digital modeling tools as they pertain to applications throughout a building's life cycle. The use of digital modeling tools has increased dramatically in recent years and the addition of this new concentration will provide students with comprehensive instruction on how to successfully use Building Information Modeling (BIM) programs such as Autodesk's Revit. Students will also be prepared for use of these tools as construction managers and as owner's representatives. Core courses for AE majors will stay the same and the Digital Building concentration will introduce seven courses that students will be required to take in their junior and senior years. These courses are geared towards providing students with the specialized skills appropriate for career development. The Digital Building concentration will be formally introduced into the curriculum beginning in the Fall term of the 2014-15 academic year.

New Faculty

Dr. Christopher Sales will be joining the Department as a tenure-track Assistant Professor. He is currently an adjunct professor and post-doctoral researcher in the CAEE Department. He graduated with a B.S.E in Chemical and Biomolecular Engineering and a B.A. in Environmental Studies from the University of Pennsylvania. He received his M.S. and Ph.D. in Civil and Environmental Engineering from the University of California, Berkeley. His research interests and expertise are in studying the environmental microbiology of natural and engineered systems, using a suite of high-throughput molecular biology, microbiology, analytical chemistry, and computational techniques, to produce a wealth of valuable information that can be used to understand and engineer microbial systems involved in biodegradation, bioenergy production, or biogeochemical processes.

Robert Swan, Jr. is a former graduate of Drexel University with his BSCE in 1985 and MSCE in 1987. Mr. Swan joins the faculty at Drexel as an Associate Teaching Professor after teaching at the University of North Carolina at Charlotte (UNC Charlotte) where he was a Faculty Associate for the Civil Engineering Technology and Construction Management program within the Department of Engineering Technology and Construction Management (ETCM). He holds extensive knowledge in soil mechanics, geology, hydrology, and construction materials. Throughout his career he has focused on laboratory and field performance of geotechnical structures consisting of soil/geosynthetic systems and various construction material evaluations. Mr. Swan has provided instructional teaching for soil mechanics and foundation design, construction materials, building systems, hydraulics and hydrology, surveying, and AutoCAD/Civil 3D courses and played a key role in course material development and oversight as the Director of Laboratories for the ETCM at UNC Charlotte.

Congratulations to Newly Tenured Faculty

Congratulations to **Dr. Mira Olson** and **Dr. Franco Montalto** who both recently received tenure. The Department looks forward to their continued contributions as both educators and researchers. Their hard work both complements and enhances the mission of the CAEE Department and the College of Engineering as a whole.

Faculty Farewell

Dr. Paul Block will be leaving the Department to join the faculty of the Civil and Environmental Engineering Department at the University on Wisconsin in Madison. Dr. Block will be transitioning into his new job this summer. The Department thanks him for his efforts and wishes him the best of luck.

Student News

CAEE doctoral student **Ramona Stammermann** won a 2013 Drexel Research Day award in her research category: Computation and Modeling (non-bio) for her research titled: High Resolution Numerical Models of Tidal Marshes in the Delaware Bay. This research focuses on sediment transport of two marshes in the Blackbird Creek Reserve and the Bombay Hook National Wildlife Refuge in Delaware. This includes the influence of vegetation, sediment availability and extreme events on flow and sedimentation patterns. Ramona is advised by **Dr. Franco Montalto**.

A Senior Design team from the Civil, Architectural, and Environmental Engineering (CAEE) Department recently represented Drexel University at the **ASCE Charles Pankow Foundation Architectural Engineering Student Competition**, held in conjunction with the Architectural Engineering Institute (AEI) National Conference hosted by Penn State University. The Drexel team, represented by students **C. Anthony Bifano**, **Kayleigh Houde**, and **Stephen Wayland**, won the competition's Innovation award for their Integrated Design of an Elementary School in Reading, PA.

Drexel University's **Concrete Canoe** and **Steel Bridge** teams competed at the **2013 ASCE Mid-Atlantic Regional Conference** hosted by the University of Pittsburgh in Johnstown, PA in April. Drexel students were accompanied by CAEE professor **Dr. Joseph Martin** who is the ASCE student chapter advisor. The Concrete Canoe Team placed second overall in the competition. The team had a strong performance in the Design Paper, Oral Presentation, Product Display and Races. This year's canoe was named Urban Legend. This year's team managers were: **Charles Zebley** (Project Manager), **Doug Boyer** (Construction Manager), **Chris Magruder** (Mix), **Jaclyn Raciti** (Treasurer), **Jordan Shepard** (Recruitment), and **Nate Barry** (Theme). The Steel Bridge team placed sixth in the overall competition. The team had a strong showing in the Efficiency and Stiffness categories, placing first in each while placing third in the Lightness and Display categories. The team was led by CAEE senior **Sonya Suntsova** and advised by last year's team captain and recent Drexel alumnus, **Michael Whelan**.

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