Department Newsletter
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DREXEL UNIVERSITY
Civil, Architectural, and Environmental Engineering
College of Engineering
http://www.drexel.edu/cae/

Mira Olson Spends Sabbatical Teaching and Doing Research in Israel

by Dr. Mira Olson

Mira Olson and Family in Israel

I have recently returned from a month-long visit to the Arava Institute for Environmental Studies in Israel, where I was teaching a class on Water Resource Management in the Middle East and performing research at the Center for Transboundary Water Management. The Arava Institute is an environmental and academic institution dedicated to advancing cross-border environmental cooperation in the face of political conflict. The academic program includes courses in peacebuilding, leadership, and environmental studies for cohorts of Israel, Arab and international students and is very much in line with academic elements of the newly developed Peace Engineering program at Drexel.

Arava Institute

While teaching at the Arava Institute, I introduced a water allocation model into a course focused on transboundary management of the Jordan River Basin and am now busy developing a role-play negotiation and simulation exercise for water allocation among Israel, Palestine, and Jordan, which we hope to introduce in a symposium at Drexel in the fall.

My research involved evaluating the impact of small-scale, cooperative, off-grid development projects. While Israel has secured its water supply through investments in desalination and wastewater reclamation, many in the region lack access to centralized water supply and wastewater treatment. Small-scale, off-grid projects are being supported to provide sustainable energy for pumping wells or recycle grey water for agricultural use, with immediate local benefits. However, the large-scale, systemic impacts of these projects are, as yet, unknown. We are evaluating these impacts in order to identify important factors for policy making and scale-up potential. With cross-border collaboration and a shared commitment to environmental resources, the long-term goal is for scarce environmental resources to no longer be a source of conflict.

Terence P. Holman Gives Pennoni Alumni Lecture

Terence P. Holman, Ph.D., P.E., (pictured right) the Vice President of Structural Engineering and Chief Geotechnical Engineer of Turner Engineering Group in Chicago, IL, was the guest alumni lecturer for the 2018 Pennoni Engineering Alumni Lecture on April 16, 2018. The title of his lecture was "Developing Innovative Practices in Geotechnical and Geostructural Engineering - Construction Technologies Leading Design."

Dr. Holman possesses over 20 years of expertise in geotechnical and geostructural engineering, design, and heavy-civil construction. He has provided design, technical, and construction management, and constructability assessment of projects involving specialty deep foundations, support of excavation in soft ground, deep cutoff walls, MSE walls, construction dewatering, vibratory ground improvement, and deep soil mixing.

He is an elected member of The Moles, a member of the Board of Directors of the International Association of Foundation Drilling (ADSC), and the current Chair of the joint ADSC-DFI Micropile Committee. He is a registered Professional Engineer in 11 states. Dr. Holman earned B.S. and M.S. degrees in Civil Engineering from Drexel University and a Ph.D. in Civil Engineering (Geotechnics) from Northwestern University in Evanston, Illinois, where he is an Adjunct Professor in the Civil and Environmental Engineering Department.

CAEE Student Awards

Leena Shevade (pictured right), a Ph.D. student in Environmental Engineering, has been awarded $10,000 in METER instrumentation, a SATURO infiltrometer and ten MiniDisk infiltrometers, for her research project on root zone configuration, ponding, and inflow depths on the infiltration performance of urban green structure.

Leena applied for the Grant A. Harris Fellowship through the METER Group, Inc., in Pullman, WA. This fellowship provides innovation through leadership, and cutting-edge scientific research by recognizing graduate students who are making extraordinary contributions to any aspect of agricultural, environmental, or agricultural science.

Maria Raggousis (pictured left), an Architectural Engineerng Senior, received a Chi Epsilon National Scholarship, the 2018 President's Choice Award for $3,500.

There were 21 scholarship and three fellowship awards in total given on the basis of academic achievement, personal essay on professional goals and objectives, letters of recommendations, work experience, and extra curricular involvement.

CAEE Student Awards

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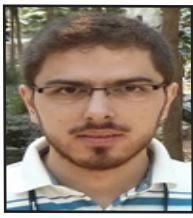

Mustafa Furkan (pictured right), a Ph.D. student in Civil Engineering, had his paper entitled "Multipurpose Wireless Sensors for Asset Management and Health Monitoring of Bridges," selected as one of the best papers presented at the 8th International Conference on Structural Health Monitoring of Intelligent Infrastructure (SHMII-8). Mustafa is now invited to submit a full extended paper for possible inclusion in the November 2018 issue of the Journal of Civil Structural Health Monitoring (CSHM).

Mohsen Foroughi (pictured left), a Ph.D. student in Architectural Engineering, received the best paper award from the 54th Annual Associated Schools of Construction (ASC) International Conference in Minneapolis, MN for his paper entitled "Improving Access to Paper-Based Construction Documents and Information via Augmented Reality Facilitators/Connectors." Mohsen is currently working on methods of integrating human knowledge with digital knowledge using augmented reality and data mining techniques for construction processes.

Empowering Girls by Example, Simi Hoque Earns Annual Award

by Wendy Plump, COE Staff Writer

Monica Malpass, Simi Hoque, Emily Bittbender, and Shawn Lytle of Macquarie Investment

Simi Hoque, an associate professor with the Department of Civil, Architectural and Environmental Engineering, was honored last week at the annual Girls Inc. 2018 Strong, Smart, and Bold Breakfast held at the Union League here in Philadelphia.

Hoque was chosen in recognition of her STEM University summer program for middle school girls held at Drexel and staffed largely by College of Engineering faculty and students. The summer outreach program serves underrepresented girls from Philadelphia.

The sold-out breakfast drew 400 people and raised over $120,000 for Girls Inc. of Greater Philadelphia & Southern Jersey. Hoque was honored along with Monica Malpass, WPVI-TV/Channel 6 ABC Action News anchor; Emily Bittenbender, managing partner of Bittenbender Construction, LP; and Macquarie Investment Management.

The program also featured a dozen Girls Inc. members who spoke about the programs that have enriched their lives, Hoque's program among them.

"Simi is passionate about inspiring girls to engage with STEM," said Girls Inc. Executive Director Dena R. Herrin. "She has worked tirelessly to build middle school STEM programs for Girls Inc. girls, first in Massachusetts and now in Philadelphia with an incredible partnership with Drexel. Simi and her colleagues bring STEM to life with fun, engaging, and relevant experiential learning that the girls love."

Hoque accepted her award before an audience that included several CoE colleagues and staffers. During her speech, Hoque told the story of her own evolution as an engineer beset with both gender- and relocation-based challenges. Hoque was born in Bangladesh and raised until the age of 12 in Nigeria. Because she loved to tinker with tools and devices, she was known early on in her community as "the engineer" who could fix anything - including her family's precious radio. It wasn't until she turned 13 here in the United States-always the only girl in her STEM-related classes-that she began to question her abilities, and the journey towards engineering became "difficult and lonely."

Just five years ago, while stewarding a Lego robotics summer camp, Hoque said she heard a frustrated young girl say, "I don't belong here." The girl's frustration inspired Hoque to organize a STEM camp exclusively for middle school girls to empower them and fuel their ambitions. "I don't want to hear 'I don't belong' ever again," said Hoque. "I don't want tinkerers and builders to feel like they're imposters just because they are the only girls in the room. And even when they are, I want them to feel strong, smart and bold, the way I did when I was a budding 12-year-old engineer."

Under Hoque's direction, the full-day STEM University camp will take place this summer from July 9 through July 13. The week of programming introduces middle-school girls to STEM subjects through one week of workshops, instruction, and mentoring. More information can be found here.

"I was incredibly honored to be given this award," Hoque added. "I've been working with Girls Inc. for many years, and this fundraising breakfast event has always been a highlight because it showcases what Girls Inc. is doing for the girls. Also, to make things even more poignant, the girls do the introductions and they also have a chance to share their own stories with the people in the room. I find that part of it to be extremely moving and inspiring. There really was so much girl power in the room.

"Also, anyone who can stand up and speak about herself with such poise in a room of 400 people is already well on her way to becoming a great leader," Hoque added.

Dr. Patricia Gallagher Heads Conference on Connecting Geotechnical Engineering Women Faculty

by Dr. Patricia Gallagher


Dr. Patricia Gallagher

The underrepresentation of women faculty in geotechnical engineering has been a long- standing concern for women engineers and their allies. The most recent effort to bring geotechnical women faculty together is the ongoing "Connecting Geotechnical Engineering Women Faculty - Networked and Thriving" project funded by the National Science Foundation. Led by Patricia Gallagher of Drexel University, Shobha Bhatia and Sucheta Soundarajan of Syracuse University, and Adda Athansopoulos-Zekkos of University of Michigan, the goal of the project is to create an enduring network of geotechnical engineering faculty colleagues and collaborators, both women and men. The project applies social network analysis and professional development activities to improve networking and collaboration among geotechnical engineering faculty. Two key activities support achievement of an enduring network for geotechnical faculty: a professional development intervention model to improve networking and collaboration; and, a social network analysis and survey to improve understanding of existing networking practices. The intervention into the existing network combined face-to-face networking opportunities in two workshops and facilitated virtual networking practices to increase collaboration opportunities.

Based on social networking theory, the intervention fosters understanding about each individual's network behavior, enables networking, provides opportunities for substantive connections with colleagues across the nation, and equips participants with the knowledge and skills to build connections and collaborate in a networked world. Networking improvements would be facilitated by developing a more cohesive and linked intellectual community that provides greater access to mentoring, novel information, new resources, and potential collaboration partners.

The first workshop, which focused on network-building, was held in Washington, DC, in April 2017. It focused on understanding how network building improves career success and helped participants build skills to connect with potential collaborators and mentors and to maintain those connections over time and distance. The 2-day workshop had 60 participants, of which 48 were dedicated to geotechnical engineering and 90% were women. Pre- and post-workshop surveys were used to evaluate the social networks of geotechnical faculty, both women and men, and their digital, long-distance network preferences.

Between the first and second workshops, there was facilitated long-distance networking. This phase built on learned practices from the first workshop, including virtual communication, developing a digital presence, and professional network building strategies. One activity within the facilitated virtual networking phase was the award of 19 seed grants. The seed grants were intended to facilitate new connections where faculty had increased access to new information, resources and mentoring as well as to foster collaborations among the geotechnical engineering community. Most of the applications received focused on furthering collaboration. Although they were relatively small (up to $5000), participants included geotechnical engineering faculty, both women and men, as well as representatives from industry and complementary fields.

The second workshop, which focused on collaboration, was held in Orlando, Florida in March 2018. This workshop focused on collaboration, particularly new strategies to connect and sustain connections, improve access to mentoring, and to meet potential collaborative partners. Approximately 50 geotechnical engineering faculty and Ph.D. students from across the U.S. and United Kingdom participated in the workshop. Participants ranged from assistant to full professor.

Upon completion of the entire project and a full summative evaluation, the team hopes to be a critical step forward in understanding how to meaningfully connect individuals within small sub-disciplines in support of career success, diversity of collaboration partnerships, and the advancement of women faculty.The underrepresentation of women faculty in geotechnical engineering has been a long- standing concern for women engineers and their allies. The most recent effort to bring geotechnical women faculty together is the ongoing "Connecting Geotechnical Engineering Women Faculty - Networked and Thriving" project funded by the National Science Foundation. Led by Patricia Gallagher of Drexel University, Shobha Bhatia and Sucheta Soundarajan of Syracuse University, and Adda Athansopoulos-Zekkos of University of Michigan, the goal of the project is to create an enduring network of geotechnical engineering faculty colleagues and collaborators, both women and men. The project applies social network analysis and professional development activities to improve networking and collaboration among geotechnical engineering faculty. Two key activities support achievement of an enduring network for geotechnical faculty: a professional development intervention model to improve networking and collaboration; and, a social network analysis and survey to improve understanding of existing networking practices. The intervention into the existing network combined face-to-face networking opportunities in two workshops and facilitated virtual networking practices to increase collaboration opportunities.