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STUDIES PROMOTE WATER SAFETY
AND SUSTAINABILITY

Smarter, More Sustainable Buildings

Imagine a building that can respond to the needs of its occupants – making them safer, more comfortable and better able to work or learn – and even negotiate with them to encourage energy-saving, sustainable behaviors.

These high-performance, cognitive buildings already exist and are becoming more sought-after and complex. **Burcin Becerik-Gerber**, PhD, Stephen Schrank Early Career Chair and assistant professor of civil and environmental engineering, is developing novel algorithms, frameworks and visualization techniques to improve these built environments' efficiency, maintainability and resiliency while increasing user satisfaction.

Becerik-Gerber's research seeks to develop new models for acquiring, modeling and analyzing data these responsive and adaptive built environments need to perceive, sense, reason and collaborate with users to both meet occupants' needs, preferences and requirements and also reduce energy consumption and improve building performance. ■



Associate professor Burcin Becerik-Gerber is helping to develop more comfortable, sustainable and safe cognitive building.

Becerik-Gerber's achievement include:

- Named *MIT Technology Review*'s "35 Innovators Under 35" in 2012 for one of her methods, which uses smartphones to negotiate energy efficiency between occupants and buildings.
- Earned an NSF Early CAREER Award in 2014 for her work toward understanding human-building interactions for responsive and adaptive environments.
- Received the 2016 Viterbi Junior Researcher Award for her contributions in the field of energy-efficient buildings.
- Serves as the inaugural holder of the Stephen Schrank Early Career Chair in Civil and Environmental Engineering.
- Published more than 120 peer-reviewed publications and currently advises several PhD students in "Informatics for Intelligent Built Environments."

DEPARTMENT NEWS

Building Foundations for Future Construction Leaders



Lucio Soibelman hosts
The Global Leadership Forum
for Construction Engineering and
Management Programs.

Developing the next generation of construction leaders will require more research and industry collaboration opportunities, an updated academic curriculum and leadership training. Members of the Global Leadership Forum for Construction Engineering and Management Programs (GLF-CEM) gathered at USC in May 2017 to discuss how to best create leadership-cultivating courses of study.

This year's host, **Lucio Soibelman**, PhD, Dean's Professor and chair of the USC Viterbi School's Sonny Astani Department of Civil and Environmental Engineering (CEE) and GLF-CEM treasurer, explained how CEE's two construction engineering and management master's programs and its Construction Management Association of America (CMAA) student group fit the forum's goals.

Relationships between industry and academia were discussed at length during the event's concluding panel on leadership, moderated by **David Ashley**, professor of civil and environmental engineering practice. Panelists from industry, government and academia discussed their views on leadership and proposed methods for cultivating tomorrow's leaders.

Bringing together professors from top universities around the world, the GLF-CEM seeks to establish a body of academic leadership in construction engineering and management that will review methods for research, teaching, administration and collaboration, while recommending changes and improvements. ■

NAE President Speech Promotes Leadership

Moving students, faculty and **National Academy of Engineering** (NAE) members with his passion and wisdom, C.D. Mote Jr., PhD, president of the NAE and Regent's Professor on leave from the University of Maryland, delivered USC Sonny Astani Department of Civil and Environmental Engineering's keynote lecture on September 7. His speech, "Understanding and Executing Leadership," offered deep insights into engineering and leadership.

Mote earned his bachelor's, master's and doctoral degrees at the University of California, Berkeley, where he also held an endowed chair in mechanical systems, chaired the mechanical engineering department from 1987 to 1991 and served as vice chancellor from 1991 to 1998. He served as president of the University of Maryland from 1998 to 2010. Mote's recognitions include the NAE Founders Award, the American Society of Mechanical Engineers Medal and the Humboldt Prize of the Federal Republic of Germany. Elected NAE president in 2013, Mote's goals are to ensure a talented and highly

competitive future engineering workforce and to facilitate public understanding of and engagement in global engineering issues.

The Astani Department's annual keynote lecture is named in honor of alumnus and founding chairman of AECOM, Albert Dorman. ■



C.D. Mote Jr. (center) delivered CEE's 2017 keynote lecture.

FACULTY NEWS



RAISING SCIENTIFIC AWARENESS THROUGH SONG

Bridging his love of music and important “stories of the environment,” **George Ban-Weiss**, PhD, assistant professor of civil and environmental engineering, presented “Lost City: Songs from a Changing Sea” at Tommy’s Place on April 2017.

Along with songwriter-composers Carla Kihlstedt, Matthias Bossi and Jeremy Flower, Ban-Weiss developed a concert inspired by the ocean and the changes it is undergoing due to climate change, overfishing and pollution. The music was performed by Ban-Weiss on upright and electric bass, Kihlstedt on vocals and violin, Bossi on vocals and drums and Flower on vocals and keyboard, accompanied by guitarist Michael Abraham and singer-instrumentalists Kristin Slipp and Ariel Parkington. ■



ASSISTANT PROFESSOR HONORED FOR ACADEMIC LEADERSHIP

Kelly Sanders, PhD, assistant professor of civil and environmental engineering, has been appointed as the Dr. Teh Fu Yen Early Career Chair. The appointment is named for a former professor of environmental engineering who served the USC Viterbi School of Engineering for more than four decades.

Sanders is one of only four USC Viterbi junior faculty who have been honored with an endowed chair. This position, supported by a donor’s endowment, is one of the highest honors a university can bestow on a faculty member and recognizes the individual’s leadership in his or her field. Funding that comes with the appointment can help support research and other endeavors. ■



CEE RESEARCHER RECEIVES AIR FORCE AWARD

For his research project titled, “Self-healable Lightweight Cellular Structures: Additive Manufacturing and Multifunctionality,” **Qiming Wang**, PhD, assistant professor of civil and environmental engineering, has received an Air Force Office of Scientific Research (AFOSR) Young Investigator Research Program award.

Wang’s project was one of 43 selected to receive the grant. The grant is designed to foster creative basic research in science and engineering, enhance outstanding young investigators’ early career development and increase opportunities for young investigators to recognize how their work in science and engineering ties in with the Air Force mission. ■

STUDENT AWARDS



Outstanding Graduate Students Honored



Ellesse Lunde and **Yasaman Azarhoushang**, master's students in the Sonny Astani Department of Civil and Environmental Engineering, received academic achievement awards at the first annual Viterbi Master's Student Awards in May 2017.

Graduate students from each department in the Viterbi School were commended for academic, leadership and service achievements.

Awards for Academics, Leadership and Service

Several graduating USC Sonny Astani Department of Civil and Environmental Engineering students took home awards at the Undergraduate Viterbi Awards in May 2017.

- **Daisy Benitez** received the Center for Engineering Diversity Award.
- **Jason Loui** won the David M. Wilson Award for Outstanding Achievement in Civil Engineering.
- **Avery McEvoy** won the David M. Wilson Award for Outstanding Achievement in Environmental Engineering and was named a Grand Challenge Scholar.
- **Saina Vosoghi** received the Outstanding Achievement by a Transfer Student award.



GRADUATE NEWS

Studies Promote Water Safety and Sustainability

Mahsa Moslehi, a doctoral candidate in the USC Sonny Astani Department of Civil and Environmental Engineering, conducts hydrogeological research that can help keep subsurface water resources sustainable and safe for human use.

Under the guidance of **Felipe de Barros**, assistant professor of civil and environmental engineering, Moslehi is developing efficient data assimilation methods in stochastic hydrogeological systems. She has proposed a novel framework to simultaneously reduce the computational complexity associated with hydrogeological models and the uncertainty corresponding to model predictions using recursive Bayesian estimation techniques.

Moslehi's outcomes have been published in top hydrogeological journals, including *Advances in Water Resources* and *Journal of Contaminant Hydrology*. She has also presented at American Geophysical Union (AGU) Fall Meetings, the most important environmental sciences conferences.

Moslehi began her doctoral studies as a Provost Fellow in 2013 and is expected to graduate by 2018. As she pursues her PhD, Moslehi has obtained two master's degrees at USC, one in mechanical engineering and the other in computer science. ■



Mahsa Moslehi, doctoral candidate in the USC Sonny Astani Department of Civil and Environmental Engineering



In recognition of her work developing technologies for safe, sustainable and reliable energy generation, **Daisy Benitez**, a first-year environmental engineering master's student, received the 2017 Switzer Environmental Fellowship Award. The award recognizes promising environmental leaders in New England and California working to address critical environmental challenges.



USC Sonny Astani Department of Civil and Environmental Engineering research assistants **Qin Ba**, **Farshid Hosseini** and **Mahsa Moslehi** and teaching assistants **Rebecca Peer**, **Saba Khashe** and **Kostis Douligeris** were honored September 9 at the 2017 Research Assistant/Teaching Assistant Awards Luncheon at Parkside Performance Café.

UNDERGRADUATE NEWS



USC student chapter of the Construction Management Association of America.

Following a year filled with notable accomplishments, the USC student chapter of the **Construction Management Association of America** (USC-CMAA) received the 2017 Student Chapter of the Year Award from the national CMAA organization. In its tenth year, the chapter hosted its 22nd annual symposium and saw a strong finish at the Associated Schools of Construction (ASC) competition, among other achievements.



*In recognition of her outstanding academic performance, research and campus involvement, **Camila Salomon Gnecco**, a civil engineering undergraduate, received the 2017 Ava Doner Scholarship from the Los Angeles chapter of Women's Transportation Seminar (WTS).*

Beyond the classroom, Gnecco has conducted research at Nanjing Tech University on structural applications of bamboo and worked as an analyst assistant in the Georgetown University Utilities Department. At USC, she has served as vice president of external relations for USC's Society of Hispanic Professional Engineers (SHPE), president of the Ecology Club and student ambassador for the USC Viterbi School of Engineering.

ALUMNI NEWS

3 Facts about the David M. Wilson Affiliates and David M. Wilson Early Career Fund

1. The David M. Wilson Affiliates was founded in 1959 by a group of civil and environmental engineering (CEE) alumni, former students of Professor David M. Wilson, who wanted to continue his legacy at the USC Viterbi School of Engineering. During his tenure at the Viterbi School, Professor Wilson unselfishly gave his time and personal resources to help build the department and mentor CEE students, and his students wanted to keep this tradition alive in his honor.
2. The David M. Wilson Affiliates raise funds in Professor Wilson's name to support civil and environmental engineering students with scholarships; to provide mentoring and networking opportunities; and to help fund various projects for our CEE student teams.
3. In 2013 the David M. Wilson Early Career Fund was established so that gifts made in honor of Professor Wilson would support the hiring of a top-quality civil and environmental engineering junior faculty member.

Whether you decide to support the David M. Wilson Affiliates Fund (which is a current use fund) or the David M. Wilson Early Career Fund (which, with your additional support, will become an endowment fund), your gift will help to support our civil and environmental engineering students and the impact they will have on the world as Viterbi School engineers.

To donate, please visit viterbischool.usc.edu/giving.



*Civil engineering alumnus **Nan Li** has been recognized by Forbes China as one of the top “30 Under 30” for healthcare and science. This list highlights innovative leaders who impact and improve the world. Li currently works as an associate professor at Tsinghua University in Beijing, China.*



Lucio Soibelman, PhD, chair of the Sonny Astani
Department of Civil and Environmental Engineering

Chair's Message

Greetings!

The new school year for 2017-2018 has begun and we are already starting strong. We opened up our fall semester with our annual Albert Dorman Lecture Series, with a very special guest, **C.D. Mote Jr., PhD, president of the National Academy of Engineering**. It was an honor to have him speak to our faculty and students. This successful event is just the start of what seems to be a prosperous year.

Already, we have seen great achievements from our students, including the USC student chapter of the **Construction Management Association of America** (USC-CMAA) that received the 2017 Student Chapter of the Year Award from the national CMAA organization. Our alumni continue to succeed, with civil engineering alumnus **Nan Li** being recognized by *Forbes China* as one of the top "30 Under 30" for healthcare and science. CEE faculty are highly recognized, including **Kelly Sanders**, PhD, assistant professor of civil and environmental engineering, who received the honor of the Dr. Teh Fu Yen Early Career Chair.

Although our department has proven time and time again how brilliant and talented they are, I continue to be astounded. I am proud that our department houses incredible faculty and students who are current and future leaders in the field of engineering. ■