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MESSAGE FROM THE CHAIR



Greg Miller, Professor and Chair

"Ramping up our giving in the CEE community will certainly impact the present, but ultimately is aimed at the future. In my mind, that's a great investment for all of us to consider."

A new academic year began recently, which means we have held a series of orientation events to welcome graduate and undergraduate students. I always find myself inspired when I look out on a crowd of new students, with all the anticipation and excitement that goes along with starting new endeavors.

Our enrollment continues to be strong and we anticipate graduating more students in the coming year than we have in decades. This is consistent with our ongoing focus on growth to meet demand, and we continue to do our best to stretch and increase resources to scale up effectively rather than haphazardly. Providing access to a CEE education for growing numbers of students requires activity on multiple fronts, including hiring and retaining faculty, expanding and improving our facilities, adopting technology and providing financial help and incentives for deserving students. Now more than ever, this is a team effort. We are fortunate to receive increased support from the College of Engineering and the state, as well as many generous contributions from CEE friends and alumni. With everyone chipping in, we are making good progress in both the quality of our programs and the number of students we are educating.

Our biggest challenge, however, remains facilities. While we have grown student support, faculty numbers and program quality incrementally, major facilities expansion is a significant financial lift. More Hall was completed in 1946, and though we lack neither effort nor interest, there has been no comparable investment in CEE facilities since that time — it's simply very expensive to build or expand university buildings. Nonetheless, we continue to explore our options to make progress on this front. We have a number of projects of varying scope in the works, to have ready when opportunity strikes.

Speaking of opportunity, one of the biggest events on

campus this fall is the launch of the new UW Campaign, "Be Boundless: For Washington, For the World." This concerted, multi-year fundraising effort is aimed at benefitting all units across campus. CEE is an active member in the campaign and we encourage alumni and supporters to get involved. I was recently inspired and encouraged to learn about a similar effort undertaken by Georgia Tech's School of Civil & Environmental Engineering. Through a multi-year campaign, they raised an impressive total of \$49 million (UW CEE's entire current endowment is about \$29.5 million). But the most impressive part, in my opinion, was their 50 percent participation rate — more than half of their potential donoralumni community made a gift during the campaign. The \$49 million was undoubtedly bolstered by a small number of very large gifts, but I wholeheartedly believe we can take that 50 percent participation rate as a challenge. If the Georgia Tech CEE alumni can participate in giving at that rate, we can, too!

The UW campaign is an ongoing, multiyear effort, so we have time to meet this participation goal. We will be communicating our strategic needs to help guide giving, but there are opportunities to contribute to any area that interests you, from student support to faculty support, and from facilities improvements to major capital projects. In short, the campaign is about making an impact where it matters most to you.

Because the campaign will extend well beyond my term as chair, which ends June 2018, I am focused on the future of the department. Ramping up our giving in the CEE community will certainly impact the present, but ultimately is aimed at the future. In my mind, that's a great investment for all of us to consider.

Greg Miller
Professor and Chair

AWARDS & ACCOLADES

STUDENTS



William Currier- NASA Fellowship

Ph.D. student William Currier has received a three-year NASA Fellowship, which funds his research to improve water forecasting by more accurately predicting the amount of water stored as snow in forested areas. More accurately determining how much water is stored in the snowpack has many applications, from evaluating climate models to forecasting water supply and hydroelectric power.



Safat Sikder- NASA Fellowship

Recipient of a three-year NASA Fellowship, Ph.D. student Safat Sikder is working to develop cost-effective and sustainable flood forecasting tools for monsoon regions in developing countries. Sikder's research will focus primarily on the monsoon region located in south and southeast Asia, where several heavily populated large river basins are frequently flooded.



Heta Kosonen- AWWA Scholarship, MVTT Grant

Ph.D. student Heta Kosonen is the recipient of two grants, the Al Alsing Scholarship from the Pacific Northwest Chapter of the American Water Works Association and a research grant from Maa- ja vesitekniikan tuki (MVTT). Funded by the MVTT grant, Kosonen spent August 2016 in Finland researching wastewater treatment at refugee centers.



Joe Hamman- Nece Fellowship

Ph.D. student Joe Hamman has received the CEE Department's Ronald and Mary Nece Endowed Fellowship, which provides financial assistance to graduate students studying water engineering. Hamman's research focuses on the development and application of a high-resolution regional climate model to study the changing hydroclimate in the Arctic region.



Kathryn Cogert- EPA-STAR Fellowship

Ph.D. student Kathryn Cogert is one of 55 recipients of an Environmental Protection Agency Science to Achieve Results Fellowship. Cogert will conduct research on an innovative wastewater treatment process involving nitrogen removal by anaerobic ammonium oxidizing bacteria, which has numerous benefits including producing less sludge and emitting less carbon dioxide.



Nasser Marafi- EERI Fellowship

Ph.D. student Nasser Marafi has received a fellowship from the Earthquake Engineering Research Institute's Federal Emergency Management Agency's National Earthquake Hazards Reduction Program. Marafi is working with an interdisciplinary team on the M9 Project, studying the effects of large-magnitude subduction earthquakes on structures located in deep sedimentary basins.



Andrew Sen- NSF EAPSI Fellowship

Ph.D. student Andrew Sen is the recipient of an NSF East Asia and Pacific Summer Institutes Fellowship. The fellowship allowed Sen to conduct research for 10 weeks at Kyoto University's Disaster Prevention Research Institute this past summer, studying the viability of a novel steel-bracing scheme designed to resist lateral, earthquakeinduced loads.



Bobby Ardissono- Mary Gates Scholarship

Senior Bobby Ardissono is the recipient of a UW Mary Gates Research Scholarship, which funds undergraduate research. The scholarship supports Ardissono's work in the Hydro-biogeochemistry Research Group, funding his research on arsenic contaminated lakes in the ASARCO smelter plume near Tacoma, Wash.

FACULTY

Joe Wartman- 2016 Edward **Burwell Award**

In recognition of his research on the deadliest landslide disaster in the history of the United States, Associate Professor Joe Wartman received the Geological Society of America's 2016 Edward Burwell Jr. Award. Wartman was honored together with six other researchers who collected data and published their findings in the aftermath of the 2014 Oso landslide.

Michael Gomez-Telford **Premium Prize**

Assistant Professor Michael Gomez, who joins the CEE Department in March 2017, was honored with a 2016 Telford Premium Journal Prize. The award recognizes authors of the top papers published in Institution of Civil Engineers journals. The publication discusses results from one of the first successful field applications of bio-cementation ground improvement, which solidifies sands through biologically mediated calcite precipitation.

Alumnus, Faculty- Best **Paper Prize**

A paper authored by an alumnus and three CEE faculty members has received a best paper prize from the international geoengineering research journal Acta Geotechnica. The paper was one of the most cited papers published in the journal in 2015. Alumnus Carter Mast (Ph.D. '13) was lead author for the paper "Simulating Granular Column Collapse Using the Material Point Method," which was coauthored by faculty members Pedro Arduino, Peter Mackenzie-Helnwein and Greg Miller.

FEATURE STORY



It may come as a surprise, but natural disasters do have a silver lining. They provide a learning opportunity and a chance to reduce damages incurred in future catastrophes. With this objective,

the UW has received a five-year, \$4.1 million Natural Hazards Engineering Research Infrastructure (NHERI) grant from the National Science Foundation (NSF) to fund a new disaster investigation center, the Post-Disaster Rapid Response Research Facility.

Led by UW Civil & Environmental Engineering (CEE) faculty, the center will enable the collection, assessment and archiving of highquality data in the aftermath of disasters, which will be used to develop more resilient communities.

"While we cannot prevent natural hazards from striking, we can minimize the likelihood that these will become disasters," said

principal investigator and associate professor Joe Wartman. "By collecting high quality data in the immediate aftermath of a disaster, we can begin to understand what went wrong and why. This allows

> us to better prepare and take precautionary measures in advance of future events."

Located in UW CEE, the new center will headquarter data collection in the aftermath of two types of natural disasters: wind hazards, such as tornadoes and coastal storms, and earthquakes, which includes earthquake-induced tsunamis.

The shared-use facility will be open to UW researchers as well as the broader research community across the nation. The center will offer not only tools and data collection equipment, but ongoing

support and guidance for research teams deploying to disaster sites. Data will be carefully collected,

IOE WARTMAN

why."

"By collecting high

quality data in the

immediate aftermath

of a disaster, we can

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what went wrong and

PI & ASSOCIATE PROFESSOR



Above left: The UW faculty team tests an Unmanned Ariel System, or drone, that will be used for aerial reconnaissance. Above right: The new center will use state-of-the-art laser equipment to provide detailed scans such as this one, which shows a home damaged by rockfall during the 2011 Christchurch earthquake. The ultra-high resolution helps investigators better understand factors that enhance the resiliency of homes.

stored and shared as open-source data with the broader research community.

Led by Wartman, the new center includes an interdisciplinary faculty team from UW and other universities, which includes UW CEE Associate Professor Jeffrey Berman and Professor Laura Lowes. The center's leadership team also includes faculty from the University of Florida, Oregon State University and Virginia Tech.

The new center comes at a time when total losses from natural disasters are increasing yearly. With the concentration of urban communities, natural disasters make cities increasingly vulnerable. The damage incurred world-wide from natural disasters that occurred between 1980-

2014 is estimated at \$4.2 trillion, according to World Bank. Within this timeframe, losses escalated rapidly, starting at about \$50 billion per year in the 1980s and reaching almost \$200 billion by 2014.

The new center builds on UW CEE faculty's collective expertise with post-disaster data collection and analysis. Wartman led a team of NSF-sponsored researchers to collect data and document conditions following the 2014 Oso landslide, the deadliest landslide in the history of the United States, and also gathered data in the aftermath of the 2011 Christchurch earthquake.

Berman's current work includes NSF-funded research to develop new seismic load

resisting systems to minimize post-earthquake repair costs and investigating impacts of a Cascadia Subduction Zone Earthquake on the Pacific Northwest.

The new center is part of a larger \$19 million NHERI investment that follows an earlier \$40 million NHERI grant, announced in September 2015, which funds a network of shared research centers and resources at various universities across the nation.

The overall objective is to enhance the resilience of buildings, tunnels, waterways, communication and energy systems, and more, in order to lessen the vulnerability of communities during natural disasters.

Front and Center

Several CEE faculty members are involved in two related NHERI centers:

Cyberinfrastructure Center

A Web-based data repository will allow the various NHERI research teams to share information. Headquartered at the University of Texas at Austin, Professors Laura Lowes and Pedro Arduino are members of the management team for DesignSafe-CI.

Computational Modeling and Simulation Center

The Computational Modeling and Simulation Center's goal is to advance natural hazards simulation. Based at the University of California, Berkeley, the center is co-led by Professor Laura Lowes and includes faculty members Pedro Arduino, Michael Motley and Peter Mackenzie-Helnwein.

DEPARTMENT NEWS

UW CEE Welcomes Four New Faculty Members



Jeff Ban

Associate Professor Jeff Ban joined UW CEE this fall, coming from the Rensselaer Polytechnic Institute where he was an associate professor in civil and environmental engineering and industrial and systems engineering. To resolve transportation related congestion, energy and emission problems in urban areas, Ban uses mathematical modeling and simulation techniques to explore how various transportation systems operate in tandem. To develop more efficient, safer transportation systems, he utilizes insight from vehicle sensors and other data. He also researches emerging driverless car technology and intelligent transportation systems technologies.



Nirnimesh Kumar

Assistant Professor Nirnimesh Kumar joined UW CEE this fall, coming from the Scripps Institution of Oceanography

at the University of California, San Diego, where he was a postdoctoral scholar. A coastal physical oceanographer, Kumar employs numerical ocean models and observations to study wave propagation, ocean circulation

and sediment transport in the coastal ocean. His field research employs sensors and high-frequency radars to measure circulation properties in the outer-shelf to surf zone.



Brett Maurer

Hiring History

to hire new

UW CEE continues

faculty members

at a rate unseen

in decades. In

the past seven

years, 17 new

faculty members

have joined the

department.

Assistant Professor Brett Maurer joins the department in January 2017, coming from Virginia Tech, where he

completed his Ph.D. Maurer's research focuses on geotechnical earthquake engineering and he is currently developing frameworks to improve the resiliency of infrastructure in future earthquakes. He

is also performing forensic analyses of liquefaction induced by past earthquakes to better inform earthquake preparation in areas of the United States.



Michael Gomez

Assistant Professor Michael Gomez joins UW CEE in March 2017, coming from the University of California, Davis, where he completed his Ph.D. He will continue his geotechnical engineering research, investigating the use of chemical and biological processes to strengthen soils. As current soil improvement processes rely upon large amounts of energy and materials, Gomez's research leverages existing natural processes to strengthen soils. His current research focuses on strengthening weak granular soils using native soil microorganisms through "microbially induced calcite precipitation," which can reduce treatment costs and environmental impacts.

Delivering Transportation Solutions

New Center Researches Urban Goods Transport

Figuring out how to best connect consumers with online purchases is now in the fast lane. To devise solutions to better deliver goods in urban areas, the Supply Chain Transportation and Logistics Center (SCTL) officially opened in mid-October 2016, the first center of its kind in the Pacific Northwest.

As transporting goods to customers quickly and inexpensively has become a struggle for many retailers that are trying to meet customer demands in the growing online marketplace, the center has partnered with retailers Costco, Nordstrom and UPS, as well as the Seattle

Learn more: depts.washington.edu/sctlctr/



STUDENT NEWS

Summer Success Stories: Internship Features

Even a little something called summer break didn't stop UW CEE students from honing their engineering skills. It was a busy summer for many undergraduates who decided to use their time off from school to pursue internships with a variety of companies.

From working on a light rail system in Hawaii to the Elliott Bay Seawall Project in Seattle, several undergraduate seniors advanced their skills with real-world experience.

Full stories are available at www.ce.washington.edu/

1. Begum Birsoz
The Boeing Company
Completed a variety
of projects related to
the carrying capacity of

commercial airplane models.

2. Shadin Khreis
Jacobs Engineering Group
Worked on the Elliott Bay
Seawall Project to replace
an aging seawall that spans
Seattle's waterfront.



County, Oahu, Hawaii.

BergerABAM
Worked on structural
engineering based military
projects, including designing
a tactical force center.

4. Iris Kwong

After 16 Years with CEE, Graduate Advisor Lorna Latal Retires



Like the 950-plus students she advised over the years, graduate advisor Lorna Latal will soon be leaving the department. But instead of moving to a new job, she will be doing the opposite— enjoying retirement.

After 16 years with UW CEE, Latal will retire in January 2017. During her time in the department, she has worked hard behind the scenes, helping students with the application process, course planning and advocating for them when needed.

"I've had graduate students tell me they wouldn't have made it here, or received their degree if it weren't for my help," Latal said. "That's very rewarding."

Latal began her career at the University of Washington's

Sports Medicine Center in 2000. After five months, she transferred to UW CEE, where she worked in a variety of positions before assuming the role of graduate advisor in 2005, eager to work more closely with students.

"For me, the fun part is helping students with the application process, getting to know them after they get here, and assisting them through graduation," Latal said.

During her time in the department, the number of graduate students has increased considerably. In 2005, there were 193 enrolled graduate students. This autumn there are 273, not counting online programs.

"It's been very exciting to see the program grow and to be part of a department that is involved in such important and exciting research," Latal said. "I have enjoyed working with the students, my co-workers and faculty who are passionate about teaching the next generation of civil and environmental engineers."

Following retirement, Latal will relocate to the Phoenix, Ariz. area with her husband, where the couple recently bought a house. They plan to return to Seattle to enjoy the pleasant summers and spend time with their daughter, son and grandchildren.

And, true to her nature, Latal already has a plan for how she'll spend her time during retirement. In addition to road trips, Latal plans to start a garden, take cooking classes, volunteer, resume her love of crafts and enjoy the outdoors.

RESEARCH SPOTLIGHT

Refugee Reconnaissance

Improving Wastewater Treatment During Crisis Response



It's an oxymoron of sorts: better refugee camps. But despite contradictory terms, a team of CEE researchers is working to improve wastewater treatment systems at refugee camps, which are typically constructed quickly to accommodate people displaced by both natural and man-made disasters.

To achieve this goal, the researchers are investigating the Azraq Refugee Camp in central Jordan, which they visited four times this past year. Currently housing more than 45,000 refugees from the Syrian Civil War, preparations are underway to more than double the size of the camp, which consists of row after row of small white cabins situated in a remote area. The camp has the potential to become one of the largest refugee camps in the world.

"Our goal is not to improve this camp; there are engineers working on that. We are focused on a bigger picture goal. Our work will help the next camps that are set-up," said research assistant professor Heidi Gough.

Led by Gough, the research project is a collaborative effort that includes faculty Amy Kim, UW CEE graduate students Chris Callahan and Heta Kosonen, and faculty and students from the Jordan University of Science and Technology (JUST). During the team's week-long visits to the camp, they work at the JUST host campus, departing early in the morning to travel several hours via escort to the camp.

"Often we get on the plane not knowing if the permits for camp entry have been approved. The officials are cautious about letting people into the refugee camp," Gough said. "Our partners at UNICEF, who are very interested in our work, have been incredibly efficient in making sure that we get the access we need to get our work done."

(Continued on the next page)

The Azraq Refugee Camp Photo Credit: Chris Callahan, Muna Abu-Dalo and Abdallah Awawdeh.



Above left: CEE faculty Amy Kim and Heidi Gough, from left, use a centrifuge to separate biomass from wastewater. Above right: Collecting samples are CEE faculty members Heidi Gough and Amy Kim, Jordan University of Science and Technology faculty members Muna Abu-Dalo and Jamal Abu-Ashour and CEE graduate student Chris Callahan, from left.

(Continued from the previous page)

Wastewater is an increasingly critical, and often overlooked, element of refugee camps, as water must be properly treated before being released back to the environment in order to prevent health hazards for both people and wildlife. Modern wastewater treatment facilities are almost unheard of in refugee camps, due to limited budgets and lack of time to establish proper facilities. The Azraq Refugee Camp is unique, therefore, as it is the second refugee camp in the world to use a modern wastewater treatment system. Most refugee camps simply use pit latrines and cesspools.

Within the refugee camp, neighborhood blocks contain showers and wash stations designed to serve 16 families each. The wastewater is pumped every 2-3 weeks and transported by truck to the wastewater treatment plant, located inside the camp boundaries. Eventually, the treated wastewater will be repurposed for agricultural uses in the arid region.

With limited financing for a wastewater system, decommissioned reactor units were recovered from a United Nations base in Afghanistan and shipped to the camp, where they were refurbished. Once the reactor units were capable of holding water, a fixed-film biological treatment process was implemented to remove carbon and nitrogen and to separate solids from the wastewater.

"Compared to a normal wastewater treatment plant, this is very different," graduate student Heta Kosonen said. "Wastewater treatment typically looks like industrial buildings. With this mobile construction technology and remote location, it looks more like a shipyard."

The researchers do not directly interact with the refugees at the camp, but spend their time at the nearby wastewater treatment facility where they conduct interviews with the staff at the facility, make field observations and collect water samples.

"The more information and data we can gather and publish, the easier it will be for future disaster response teams to cultivate a plan that works for their wastewater needs," graduate student Chris Callahan said.

A few key findings that have surfaced are the need for a contingency plan to accommodate additional wastewater, pipes that can be easily reconfigured and well-trained wastewater facility staff. With limited Internet and cell phone service at the camp, the researchers are also exploring recommendations for enhanced communication.

The researchers are currently compiling their data and plan to soon publish their findings. The research is funded by a National Science Foundation Rapid Response Research grant, in partnership with UNICEF, which oversees water sanitation at the camp.





A trip down memory lane is always worthwhile. This past summer, more than 80 alumni from the class of 2006, professors and guests gathered for a 10-year reunion. The majority of attendees were from Washington state, with a few alumni traveling from out-of-state.

"It was great reconnecting with former classmates who many of us haven't seen in 10 years," said alumnus Casey Nelson, the lead planner for the event. "It was also super exciting to reconnect with professors and staff who seemed just as excited to see all of us. Our hope is that other classes can follow our lead and host other class reunions... this might be the first-ever UW CEE 10-year reunion, but hopefully not the last!"

The event included dinner, dancing and a photo booth to record new memories. Alumni also learned about new developments in the department during an update by Chair Greg Miller. The 2016 Concrete Canoe team showcased their canoe, in which they claimed 10th place at the National Concrete Canoe Competition, and members of the recently formed American Public Works Association Student Chapter were present to talk about their organization.

To show their support, Blueline Design Group, founded by a few UW CEE graduates, made a monetary donation to the department, and Einer Handeland (BSCEE '65, MSCEE '77) donated his award-worthy dahlias as centerpieces.

"I wish more CEE classes did something like this. It



CEE alumni have fun making new memories in a photo booth.

was great fun to see so many successful grads of our department. What a class!" Emeritus Professor Robert Holtz said.

The class reunion was made possible thanks to the planning and hard work of alumni Adi Wardhana (Jacobs Engineering Group), Casey Nelson (City of Mercer Island), Clint Nelson (Expedia Inc.), Dane Egusa (KPFF Consulting Engineers), Ngan Ha Nguyen-Yang (City of Lynwood) and Vince Martinez (Architecture 2030), as well as support from Jill Dalinkus (UW CEE assistant director, Advancement).

Engineering Lecture Series: Enjoy the Videos

If you missed the 2016 Engineering Lecture Series, the lectures are available online to watch anytime, anywhere. The lecture series "City Smarts: Engineering Resilient Communities" features UW CEE faculty experts who discuss earthquake preparation, sustainable transportation and clean water.

Enjoy the following lecture videos, available at www.engr.washington.edu/alumni/lectures.

- Engineering Solutions for a Seismically Resilient Seattle
 Jeffrey Berman, Thomas & Marilyn Nielsen Associate Professor
- Delivering Sustainability: Transporting Goods in Urban Spaces Anne Goodchild, Allan & Inger Osberg Associate Professor
- Understanding Our Chemical Fingerprints: Safer Water for Our Cities Edward Kolodziej, Associate Professor







Alumnus Karl Kirker Establishes Student Support Fund

A memory from 40 years ago is still going strong. Alumnus Karl Kirker (BSCE '75), who received the Charles Church More Scholarship from UW CEE during his senior year in college, still remembers what it felt like to be the recipient of \$400 that covered the cost of two quarters of tuition.

"I was certainly happy, surprised and thankful to receive the scholarship," Kirker said.

And now, Kirker hopes other students will make similar memories through the establishment of a student support fund, called the Karl N. Kirker Endowed Undergraduate Student Support Fund in Civil Engineering, which Kirker plans to eventually grow into a scholarship fund. Supporting students is something that Kirker has invested in for more than a decade. Leading up to the creation of the new fund, he donated annually to the Charles Church More Scholarship fund.

Receiving financial support during his schooling enabled Kirker, who worked summer and part-time jobs to save money for college, to focus more on his studies. He received the scholarship, in fact, due to his notable academic performance during the two quarters leading up to the scholarship award.

Growing up in North Seattle, Kirker's interest in engineering was sparked while working for a neighbor's construction company during the summer. Learning to repair foundations, Kirker began to consider studying the structural side of civil engineering.

Just two days after his college graduation, Kirker started his first job at an organization that he would eventually



Karl Kirker at the UW President's Club Reception in July 2016.

retire from. First employed as a highway engineer for the Washington State Department of Transportation (WSDOT), Kirker soon transferred to the bridge and structures office in Olympia, Wash., where he spent 29 of his 30 years with WSDOT, working his way up to become a structural design unit manager.

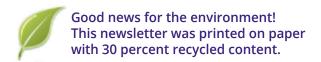
"As I approached 30 years with the state, I realized it had been 30 years since I got the scholarship and something hit me. I wanted to pay it back," Kirker said. "Being an engineer, I went to the Consumer Price Index to research how much a similar \$400 scholarship would be today."

After 30 years with WSDOT, Kirker retired in 2005. Following a brief five days off, he embarked on his second career as a consultant for a firm in Olympia, where he is currently employed.

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RETURN SERVICES REQUESTED

Send address corrections, questions, and comments by email to comments@ce.washington.edu or to the return address above.





CEE Alumni Tailgate Launches Giving Campaign

UW CEE alumni excel in team spirit! More than 100 UW CEE alumni and guests gathered for a tailgate party before the Huskies' homecoming game against Oregon State University on Saturday, October 22. Held in a new location this year, the Structural Research Laboratory, attendees enjoyed food and drinks (served out of a concrete canoe!) and reconnected with colleagues, former classmates, friends and faculty.

This year, the annual alumni tailgate marked the public launch of UW's campus-wide fundraising campaign "Be Boundless: For Washington, For the World." During the event, Chair Greg Miller shared that the CEE department at Georgia Tech recently concluded a similar campaign with an impressive 50 percent alumni giving rate. Miller issued a challenge to UW CEE alumni to match this participation rate, saying "If Georgia Tech can do it, why can't we?"

To learn more about supporting UW CEE, please visit www.ce.washington.edu/alumni/give.html.

