CIVIL & ENVIRONMENTAL ENGINEERING
UNIVERSITY of WASHINGTON

Fall 2012

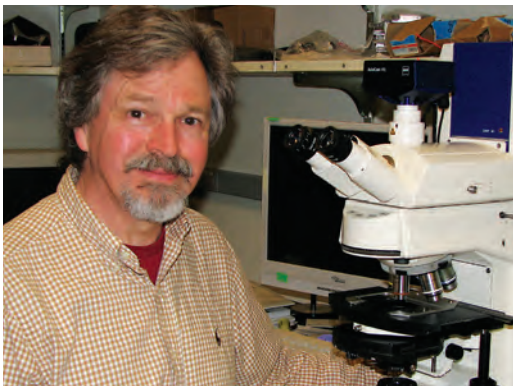
The Bridge

David Stahl Elected to NAE

Professor David Stahl was honored early this year with election to the National Academy of Engineering (NAE), one of the profession's highest distinctions. Stahl was cited for his application of molecular microbial ecology to environmental engineering. Through his research group, Stahl works independently and collaboratively with UW associates in CEE, Microbiology, and Oceanography to address basic and applied problems in the biogeochemistry of nitrogen and sulfur, biodegradation and bioremediation of recalcitrant pollutants, and the development of state-of-the-art biosensors.

"Election to NAE is a great honor for Dave and is excellent for CEE. We are among the few departments in the College of Engineering with active NAE members," said CEE chair Greg Miller.

Stahl is one of 16 current, emeritus, and past UW Engineering faculty, and one of three from CEE, to earn this honor. The first, in 1969, was Professor Edward Wenk (see page 10). Professor Dennis Lettenmaier was elected in 2010.



Professor David Stahl

Academy membership honors those who have made outstanding contributions to engineering research, practice, or education, and to the "pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education." ■

IN THIS ISSUE

The Transformative Power of a $1 Million Gift

Earlier this year, CEE received one of its largest ever discretionary gifts, $1 million from the estate of Ken (MSCE '57) and Peggy Hoyt. Their visionary decision to create a permanent endowment of this size will enhance educational initiatives for generations to come.

The Hoyts understood the value of education. In 1954, as a freshly minted graduate of the University of Minnesota, Ken arrived at the UW to pursue his master's degree. His career in the construction industry focused on Army Corps of Engineers infrastructure projects in the Northwest, including several major dams. Peggy, a home economics major in college, pursued her passion for textiles and became an accomplished weaver. As the couple made their way through life, they never forgot how their education contributed to their prosperity, and so made provisions in

Continues on page 9.

Greg Miller

Message from the Chair

A common question I have been asked recently is: Why has it gotten so hard to get into the UW in general, and CEE in particular? This question took on a personal slant last year when my own son was not admitted to the UW despite an academic record that would have easily admitted him in previous years. This same story played out for many potential in-state freshmen, and raised questions as to whether the UW is favoring out-of-state students, setting unreasonably high standards for admission, or whether budgetary pressure has driven changes in admissions procedures. All are compounding factors, but from my perspective as an engineering department chair, the key issue is relatively simple—it's a statewide gap between demand and capacity for engineering education.

In my previous chair's messages, I have discussed the mismatch between student demand and capacity in CEE and other engineering departments. UW engineering degree capacity has seen virtually no net growth since 1979. Similar compelling numbers for overall admissions to the UW have not been reported widely. In short, according to US census data, Washington State has about 115,000 more college-age residents than in 1990, representing a 35 percent increase from about 326,000 to 441,000. Nothing close to this kind of growth has occurred in capacity at the UW, or at any statewide four-year institution. The opportunities for current students, particularly in engineering, are a fraction of what they have been traditionally.

This brings us back to CEE's ongoing focus on growth. With about 7,000 UW CEE alumni and a strong local professional community, I believe that we can come together to help address our critical capacity and access issues. Part of the solution is financial, and in the coming year we will begin making broad appeals to our alumni community for funding for specific core purposes.

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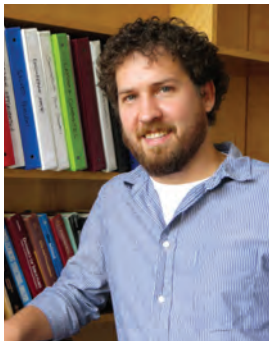
Structural Engineer Joins the Faculty



Michael Motley

In September CEE welcomed Michael Motley to the faculty as an assistant professor. He arrives from the University of Michigan where he held a postdoctoral fellowship in the Department of Naval Architecture and Marine Engineering. He earned his doctorate from Princeton University in April 2011.

Motley develops systems-based, probabilistic design, analysis, and optimization tools to maximize the performance of structures undergoing air-structure and fluid-structure interactions. Much of his recent research has exploited the fluid-structure interaction capabilities of fiber-reinforced composite marine propellers for naval combatants. He plans to expand this research to focus on energy-efficient and energy-producing structures such as wind or tidal turbines and to examine ways to improve energy capture using advanced materials and bio-inspired design concepts to maximize performance.

Motley's honors include the OMAE Best Paper at the 2009 Ocean Renewable Energy Symposium, the Via Fellowship at Virginia Tech, and The Citadel's Star of the West Postgraduate Fellowship. ■

Evans Lecture Recap: *High-Performance Neighborhoods*

High-performance neighborhoods and urban districts are starting to emerge in a variety of contexts from EcoDistricts to Climate Benefit Districts and green neighborhood master plans. All are working to leverage economies that are achievable with energy, water, and waste systems at scales greater than a single building. At the May 10 lecture, Clark Brockman, director of SERA Architects' Sustainability Resources Group, provided context as to what's happened, what's happening, and what may happen in the fast-changing world of district-scale systems in urban settings, and how they are helping communities and campuses reach ever-increasing sustainability performance targets.

Brockman is past chair of the Cascadia Region Green Building Council and a founding and current board member of the International Living Future Institute. He speaks nationally on the impact of the built environment on climate change, and he serves as a green building policy advisor to a variety of cities and counties and to the state of Oregon. In 2010 he participated in the UW's West of 15th Planning Study and the Infrastructure Master Planning Study.

View his PowerPoint at: ce.washington.edu/news/lecture/EvansLecture_HighPerformanceNeighborhoods_2012.pdf. ■

Master of Sustainable Transportation Gains Traction

CEE launched its online Master of Sustainable Transportation (MST) degree program in autumn 2011 in coordination with UW Professional & Continuing Education. This self-sustaining, three-year professional program provides transportation engineers and planners with the knowledge, skills, and tools needed to become leaders in the field. It enables graduates to develop and maintain sustainable transportation practices by exploring sustainable transportation planning, policy, and analysis while examining the growing concern for transportation's environmental, social, energy, and economic impact on our society.

Jason McCoy, a planner with Hatch Mott MacDonald, enrolled to gain expertise to meet future challenges and opportunities. "The UW has developed this program for professionals like me who recognize that integrated sustainability policy is an essential component of global advancement," McCoy said.

The 42-credit curriculum is offered through nine online courses over three years in a convenient, part-time format designed for working professionals.

Mary Anderson, project manager with Whatcom County and MST student, values the program for professional and personal reasons. "This degree will allow me to assist with planning projects in my county related to bicycle and pedestrian safety, and will be a valuable resource for me in working with the public. As I balance a career and family, the online format of the program is a perfect fit." ■

A New Engine for the Northwest

Transportation research, education, and workforce development in our region have a new engine in the Pacific Northwest Transportation Consortium (PacTrans). Under the direction of CEE Professor Yinhai Wang, the UW leads the consortium of the University of Alaska Fairbanks, University of Idaho, Oregon State University, and Washington State University. With a $3.5 million grant from the US Department of Transportation (USDOT), this new Region 10 University Transportation Center is dedicated to collaborating with local agencies, companies, and research institutions to jointly develop safe and sustainable solutions to the diverse transportation needs of the Pacific Northwest.

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Michael Brunk / nwlens.com

A PacTrans launching summit on May 24 drew close to 100 transportation professionals. Congressman Rick Larsen (WA-02), an early supporter of PacTrans, delivered a keynote speech on the status of current transportation funding bills and the challenges of legislating transportation topics in Congress. Additional speakers included federal and state DOT personnel from the consortium states, and industry and university leaders and researchers. Topics included the current state of transportation research and major challenges faced by DOTs in maintaining infrastructure, funding, and workforce.

To learn more about PacTrans research and education programs, visit depts.washington.edu/pactrans. ■

Reducing CO_2 Emissions with Grocery Delivery

The transportation sector produces the largest percentage of emissions from fossil fuel combustion, representing nearly one-third of emissions from this fuel source. As demand on the world's resources continues to increase, we must foster economic growth while reducing impacts to the environment. Unfortunately, current business practices and land use patterns often create situations in which these goals conflict because economic well-being tends to require extensive energy-intensive transportation.

A service that replaces many individual trips with one shared trip may help alleviate this dilemma (Figures 1 and 2). While this practice is widespread for public transportation such as bus service, shopping services present a novel opportunity to improve sustainability by substituting freight transportation for personal travel, particularly with the growth of online shopping. Such services reduce vehicle miles traveled by collecting passengers or goods into shared vehicles, replacing individual employee trips to the workplace and household trips to stores, schools, or transfer stations. However, while these services require fewer vehicle miles of travel, the vehicles they rely on produce more greenhouse gasses per mile travelled, so their net impact on CO_2 production is unclear.

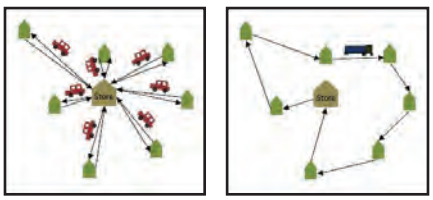


Figure 1: A delivery vehicle travels less distance to serve the same set of customers than if those customers drove to the store themselves.

Researchers at the University of Washington have been examining the net impact on carbon dioxide emissions when freight delivery systems replace personal travel. One study is looking at the CO_2 emissions that result when personal travel to the grocery store is replaced by a grocery delivery service.

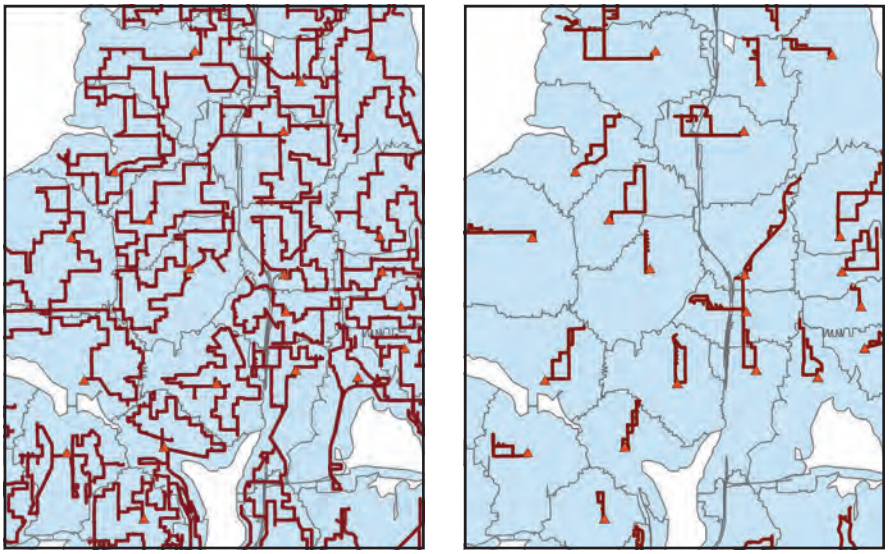


Figure 2: When customers are clustered (right), the routing of delivery trucks is far more efficient and the CO_2 reductions are larger.

The team of Anne Goodchild, associate professor of civil and environmental engineering, and Erica Wygonik, a CEE doctoral candidate, modeled CO_2 emissions based on the route traveled by the customer and the delivery vehicle. They examined the impact of serving clustered customers and compared it to the impact of serving customers scattered throughout a service area. Their results showed reductions in CO_2 of 80 to 90 percent when delivery vehicles replace personal trips for clustered customers, and a reduction of only 45 percent when they replace personal trips for scattered customers.

"Grocery delivery services provide convenience to the customers and a net reduction in CO_2 emissions for their communities, but those reductions are most significant when grocery customers are clustered," Goodchild said. "The next time you think about getting your groceries delivered, do it to help the planet and save yourself some time—but make sure to ask for delivery on a day the service is heading to other customers in your neighborhood!" ■

Photo courtesy of Amazon Fresh.

Awards & Accolades 2011–2012

Faculty Honors

Hawkins Named ASCE Distinguished Member

Neil Hawkins, affiliate professor and former faculty member, was named a Distinguished Member of the American Society of Civil Engineers (ASCE), the highest recognition below ASCE president. It is reserved for those who have attained the grade of Member or Fellow and who demonstrate acknowledged eminence in a branch of engineering or related arts and sciences.

Bob Holtz Lectures from Boston to Brisbane

Bob Holtz, CEE professor emeritus, has been on the lecture circuit over the last year. As the first Cross-USA Geo-Institute Lecturer honored by the American Society of Civil Engineers Geo-Institute (G-I), he delivered lectures in 2011 at G-I chapters in Tampa, St. Louis, and suburban Philadelphia, and in spring 2012 in San Francisco–Oakland and suburban Boston–New Hampshire. He also presented his 2010 G-I Terzaghi lecture at Texas A&M, the 60th Minnesota Geotechnical Conference, the 2012 Chicago Geotechnical Lecture Series, and most recently to the San Diego ASCE geotechnical group. Last February he was invited by the Australian Geomechanics Society (AGS) to present his Terzaghi lecture to their chapters in Brisbane, Newcastle, Sydney, Hobart, Melbourne, Adelaide, and Perth.

Wartman Earns Double Honors

Joe Wartman, associate professor in geotechnical engineering, was selected for the 2011 National Academy of Engineering's (NAE) EU–US Frontiers of Engineering Program. This annual meeting for 30 emerging engineering leaders from the US and 30 from Europe facilitates international and cross-disciplinary research collaboration and encourages the creation of a transatlantic network of world-class engineers. Wartman also won the 2011 Shamser Prakash Research Award for his work in geotechnical earthquake engineering focused on seismically induced landslides and for his contributions to the field of sustainable geotechnics.

PSEC 2011 Engineers of the Year

Professor Emeritus Stephen J. (Steve) Burges, was named the Puget Sound Engineering Council's (PSEC) 2011 Academic Engineer of the Year, nominated by the American Society of Civil Engineers (ASCE). Affiliate Professor John Tawresey was named the PSEC Professional Engineer of the Year.

Student Honors

Chahim Awarded 2011 Bonderman Fellowship

Dean Chahim (BSCE '12) was awarded the 2011 Bonderman Travel Fellowship. It offers UW graduate and undergraduate students in the University Honors Program and in UW Tacoma's Global Honors Program an opportunity to engage in independent exploration abroad. Chahim visited Brazil, Africa, the Middle East, and Central and South Asia to better understand conceptions of development that transcend economics.

Clark Participated in NASA Fellowship Program

Elizabeth Clark received the 2011 NASA Graduate Student Researchers Program (GSRP) Award. This agency-wide, twelve-month fellowship program (also called GSRP Training Grants) is for study leading to master's or doctoral degrees in areas of science, mathematics, and engineering related to NASA research and development. Students participate in a ten-week research experience at the NASA Center or headquarters.

NEHRP Graduate Fellowship Goes to CEE Alum

The Earthquake Engineering Research Institute named Kevin Franke (MS '05) as the 2011–2012 NEHRP Graduate Fellow in Earthquake Hazard Reduction. The award fosters the participation of capable individuals in furthering the goals and practice of earthquake hazard mitigation.

Graduate Student Receives C4C UW Invents Award

Jeralee Anderson (PhD '12) received the 2011 UW Invents award from the Center for Commercialization (C4C) for her work on Greenroads. This award recognizes a postdoctoral or graduate student who has been instrumental in moving a technology into commercialization.

Deichsel Awarded 2011 Dean's Medal

Dean Matt O'Donnell selected Alfred (Johnny) Deichsel (BSCE '11) for the 2011 Dean's Medal to recognize his outstanding accomplishments and significant contributions to the college.

Clayton Honored as 2011 Outstanding Female Student

Doctoral student Patricia Clayton received the Society of Women Engineers 2011 Outstanding Female Student award for CEE. Her research focuses on developing a self-centering steel plate shear wall structural system for reducing building damage and repair costs following earthquakes.

CEE Students Receive 2011 ITE Western District Awards

A paper by Runze Yu (PhD '12), "Quantifying the Relationship Between Near-Road Concentrations of Black Carbon and Traffic Flow Observations," won the 2011 Student Paper Award for the Western District of the Institute of Transportation Engineers. Yu and graduate student Yegor Malinovskiy won the 2011 James H. Kell RFP Competition for their proposal for "Traffic Hero," a game that teaches the basic ideas of video-based traffic detection.

Students Win AWWA Fresh Ideas Poster Competition

Graduate students Christa Fagnant and Andrew Karch won first and second place, respectively, for their entries in the American Water Works Association's (AWWA) Fresh Ideas Student Poster Competition for the Pacific Northwest Section. Christa won for her poster titled "Optimization of Solar Free Chlorine Production for Decentralized, Energy-Efficient Disinfection of Compromised Drinking Water Sources," and Andrew won for his entry titled "Regeneration and Reuse of Heated Aluminum Oxide Particles for Hybrid Adsorption/Membrane Systems."

Two CEE Seniors Receive Mary Gates Research Scholarships

Anthony Poggioli and Hannah Snow, both CEE seniors, were awarded 2012–2013 Mary Gates Research Scholarships. These competitive scholarships enhance the educational experiences of UW undergraduates through participation in research guided by faculty.

Coral Sales Company 2011 Scholarships Awards

CEE undergraduates Karstin Jacobson (BS '12) and Corina Popescu (BS '12) and CEE graduate students Tom Le and Monica Jones (BS '11, MS '12) received 2011 Coral Sales Company scholarships in transportation and construction engineering. ■

Water Scarcity Ancient Challenge, Modern Crisis

Exploration Seminar in Jordan

A fabled river flowing at two percent of historic levels. Friendly, compassionate people welcoming political refugees despite added pressure on the land and scarce water resources. Grand Roman aqueducts and fountains never suited to the arid environment. A "rose-red city half as old as time" … this ancient caravan stop a marvel of ingenious water management.

All coalesced into vibrant experiential learning for eight UW students from the water-abundant Northwest, including five CEE undergrad and graduate students. In late summer they spent three weeks in Jordan on a UW study abroad program organized and led by CEE research assistant professor Heidi Gough and master's student Jaffer Ali.

Home base was Jordan University for Science and Technology (JUST) in Irbid, a city just across the border from Syria. The UW students lived in dorms with a cohort of four Jordanian students participating in the program. They attended lectures on water management issues by Jordanian government representatives and engineering experts. They took field trips to water treatment facilities, the Dead Sea, and other sites, including the desert land of the Bedouin, where they rode camels. They completed daily assignments and researched topics for presentations.

The verdict — Amazing. Awesome. Transformative.

"It was the most humbling and impressive experience of my life," said Christina Curtis, a student in CEE's environmental professional master's program, who works in water planning for the City of Bellevue.

She was astounded by the amount of water neighboring countries draw from the Jordan River, now a trickle of its former flow and surrounded by a demilitarized zone. Raw or partly treated sewage discharges and also saline water discharge have devastated the environment.

"Plant diversity has decreased 50 percent, aquatic life is gone, and migratory bird species are vanishing," Curtis said. "In the face of water scarcity, the environment takes a back seat."

Jordan ranks among the ten most water-scarce nations in the world and in the 1950s began large-scale projects to modernize drinking water and wastewater infrastructure through established technologies and innovation. The government focuses on both water quality and conservation, and the country now has the world's lowest per capita water consumption.

CEE junior Joe Ellingson plans to focus his career on hydrology. He found the talks by government and engineering experts valuable because

Students atop a wall at Ajloun, a twelfth-century fortress in northern Jordan. Clockwise from the top: Ornwipa Thamsuwan (PhD IE), Carmen Rodriguez (junior CEE), Enrico Abadesco (senior CEE), Moath (JUST), Margaret Stark (junior Physics), Kenten Danas (senior ChemE), Joseph Ellingson (junior CEE), Nathaniel Janega (MS CEE); not pictured, Christina Curtis (MS CEE).

The columns mark the entrance to a tomb at Petra. A large cistern in front of the steps stored water for piping to houses at lower levels in the canyon. The wall with the hanging garden on the right is part of a massive reservoir.

they focused on the thorny issues of resource use when major water bodies straddle political boundaries or flow through several countries. Water use has sparked 32 military conflicts in the region since 1980.

"Water is vital to everything here. It was eye opening to learn about the complexity of the economic, social, and political issues," Ellingson said.

He and CEE senior Enrico Abadesco focused their presentation on the Disi Aquifer, 90 percent of which lies in Saudi Arabia, which has been tapping the water for a long time. "Jordan has just developed the infrastructure to tap its part of the aquifer. It is nonrenewable 'fossil' groundwater that collected slowly," Ellingson said. "It will be used up in 30 years, so tapping the aquifer is just a stopgap solution."

Nathaniel Janega will earn his MS in June and is aiming for a career in wastewater treatment and work on international projects to address the world water crisis. He was impressed with Jordan's willingness to open its doors to refugees fleeing from strife in bordering countries.

"Despite the spikes to their own population and pressure on resources, they don't turn anyone away," Janega said. "They provide health care to treat infectious diseases so refugees can be integrated into society, and they treat camp wastewater like industrial waste to protect Jordan's public water supply."

"We asked the students and scientists how they avoid getting depressed about water scarcity and environmental problems," Curtis said. "They told us they are hopeful and excited to contribute to changes that will improve the situation."

Lessons from Antiquity

Ancient historical sites in Jordan provided both cultural lessons and inspiration. Ruins from a Roman Empire city boasted grand imperial architecture, public fountains, and a 25-mile long aqueduct, none suited to efficient water management in an arid climate.

In contrast, in the arid mountains and desert of southern Jordan, the ancient caravan stop of Petra revealed ingenious methods for managing water supply in a city of 30,000 to 50,000 people. The students divided into teams to explore the site, a maze of stunning, red-rock slot canyons inset with ornate buildings and features carved into the stone. They photographed hydrologic structures more than 2,000 years old, including terra cotta pipes, cisterns, and a water filtration system.

"The ancient Nabatean people had simple but sophisticated and elegant solutions to controlling water in slot canyons prone to flash flooding," Janega said. "They built small dams at the top of canyons to direct water down through carved channels and into cisterns that could store water for periods of drought."

The students praised Professor Gough and Professor Muna Abu-Dalo, her program partner at JUST, for developing and leading a study abroad program that packed "a ton of learning" into a rewarding and fun cultural immersion. The program was partly funded by a National Science Foundation grant, while students were responsible for the five-credit course fee, a study abroad fee, and airfare.

"When I started this program it was a step into the unknown for me," Gough said. "Teaching outside the confines of a traditional classroom or laboratory is not common in engineering. I had never led a group of students in an international setting, and half were going abroad for the first time. We all took this educational risk together."

Professor Heidi Gough

The experience deepened students' commitment to their career goals. Janega, in fact, would like to learn Arabic and hopes to return to Jordan to work for several years as a field engineer on wastewater projects.

"It is important that students see how climate changes engineering design, and we met researchers who are doing amazing work on the other side of the world. The student learning was an incredible success," Gough noted. "Now when I walk around campus other faculty stop me because they have heard students talk about the impact of this course on their academic lives, and I am amazed. We are getting geared up for next year's program, and I can't wait to take a new group of students to Jordan!"

To learn more, visit the course website: courses.washington.edu/cejordan and the blog of Christina Curtis at seattletojordan.blogspot.com/ ■

Gift Opens Access to Education, Expands World Views

Bill and Donna Dehn

Education can uplift an entire family and establish the potential for future generations to have the same opportunity. To this end, Bill (BSCE '68, MSCE '71) and Donna (MS Public Health '91) Dehn have established the Undergraduate Education Access Fund in Civil & Environmental Engineering. This endowed fund will assist motivated students who have demonstrated academic success to attain their engineering degrees and will give preference to students who are the first in their families to attend college. In addition, it will help support the growth of the next generation of engineers, a pressing need in our country.

Higher education provides opportunities for rewarding careers in critical fields and expands a person's world view far beyond place or circumstances of origin. As responsible professionals within the global community, the donors recognize the value of their own college educations and want to assist others. They hope the establishment of this endowment will encourage other professional engineers with similar interests to join them in supporting undergraduate students and providing a path to future success through education.

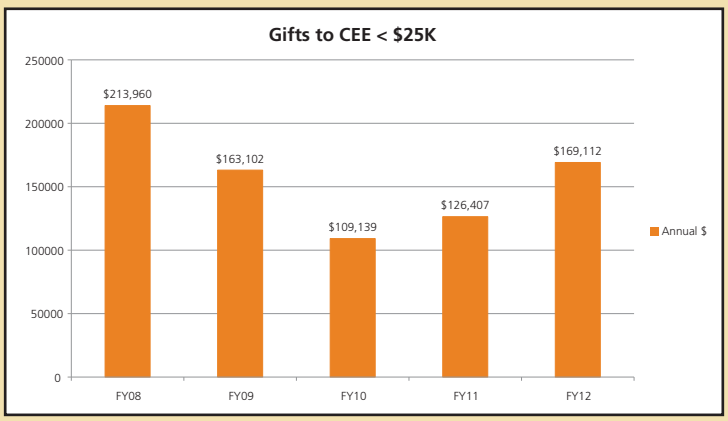
To learn more about the fund or to make a contribution, please contact Megan Ingram at (206) 685-1378 or mkingram@uw.edu. ■

Nothing "SMALL" About It: Gifts Under $25,000 Add Up

In these pages, we often share stories of large and generous gifts made by alumni and friends to CEE. You've read about estate bequests of $1 million or six-figure endowment gifts to establish scholarships. We are thankful for these gifts and these donors as they have helped form the department we are today.

We are equally grateful to another group of donors, although their gifts don't always dominate headlines.

Since the Campaign for UW ended in 2008, gifts to CEE of less than $25,000 have added up to more than $780,000. *Most of these gifts were between $100 and $5,000. Gifts of $1,000 or more qualify donors for the College of Engineering's Dean's Club. Gifts of $2,000 or more also qualify donors for the UW's President's Club. Each club has exclusive donor benefits.*



Individual annual gifts (<$25,000) directed toward operating and endowed funds during the last five fiscal years (July 1 to June 30). The total does not include corporate gifts, sponsorships, or grants.

This year-after-year generosity keeps the department moving forward, and upward. As state funding continues to decline, these annual and primarily unrestricted gifts help meet increasing need while also providing capacity for exploring new opportunities. For example, gifts to the Civil & Environmental Engineering Discretionary Fund allowed us to supplement scholarship and fellowship awards while also supporting the cost of hiring a strategic planning professional to help the department chart its course for the future.

As the department takes steps to meet the increasing demand for high-quality graduates, continued support generated by donations at this level is vital. It is important to acknowledge that an increase in support is equally necessary. To this end, the department has hired a new advancement officer to focus on bringing new donors into the fold and encouraging current donors to step up their giving.

To each of you who have made a gift to the department, no matter the size, thank you! Your collective contributions add up, and they add up big. If you are considering making a gift, but are waiting until you can give something "more substantial," take a second look at what your peers have collectively accomplished with their gifts of $25, $100, and $1,000.

To learn more about making an annual gift to CEE, please contact Katie Frisbie Bunten at frisb@uw.edu or (206) 616-8310. ■

Investing in Future Valle Scholars

Behind every Valle exchange and fellowship is a story of transformation. Whether through a watershed moment in their research or a cultural awakening, the scholars who participate in the Valle Fellowship and Scandinavian Exchange Program gain experiences that shape their lives and careers. This is certainly true for Kelly Pitera, whose story is highlighted here.

Kelly Pitera enjoys a scenic view during a hike in Norway.

For the first time in its 30-year history, the program invites its alumni to ensure these same life-changing opportunities are available to new generations of students. Valle alumni will receive a letter from program director Scott Rutherford detailing how to make a gift in support of the program. In the meantime, please visit the Valle Program's website for more information and to learn about the 2012–2013 scholars: depts.washington.edu/uwvalle.

Valle Scholar Spotlight

Kelly Pitera received her PhD in civil and environmental engineering in June 2012, with a research focus on resiliency within transportation systems and sustainable freight transport. The Valle Program supported Pitera for a year of her master's work at UW and during her final year of doctoral work, when she spent six months at SINTEF, Scandinavia's largest independent research organization, in Trondheim, Norway. There she completed her dissertation on the costs and benefits of using safe driving monitoring technology in commercial vehicles and presented her research at workshops.

"At SINTEF I was surrounded by top researchers who introduced me to the approaches used within Norway and Europe to improve sustainability of freight transport. Their policies regarding emissions exceeded what we are doing in the United States. It opened my eyes to what could happen here in the future," Pitera said. "The insights I gained will prove invaluable as I continue my work to improve the sustainability of freight transport. I also made wonderful friends and learned to appreciate another culture."

Kelly earned her BSCE from Villanova University, then worked for five years at Berger/ABAM Engineers in Seattle, contributing to bridge and roadway design for numerous transportation projects. This fall quarter she is doing informal postdoctoral work as a research associate in CEE. In January she returns to Norway to become an associate professor of civil and transportation engineering at the Norwegian University of Science and Technology, the alma mater of benefactor Henrik Valle. ■

Hoyt $1 million discretionary gift

(continued from page 1)

their will for CEE and for a major gift to the College of Engineering.

"Discretionary contributions are more important to the department than ever," said CEE chair Greg Miller. "To grow and evolve, we need resources beyond those required to sustain day-to-day educational and research operations. The Hoyt gift provides exactly the kind of flexible, above-and-beyond funding that can help drive positive change, and we greatly appreciate the generosity this gift reflects."

As the state shrinks its commitment to the university and funding for supplementary programs tightens, discretionary gifts allow department leaders to pursue pressing projects that may not be funded by the annual budget. Needs range from capital improvements to student support, faculty research projects and exchanges, guest speakers, field trips, and many other activities that enhance educational experiences and bolster the department's research and community outreach endeavors.

If you are considering an estate gift to benefit Civil & Environmental Engineering, please contact Megan Ingram at (206) 685-1378 or mkingram@uw.edu. ■

Welcome Katie Frisbie Bunten

Katie joined the College of Engineering this summer as the assistant director of advancement for CEE. She comes to the college from the School of Drama where she served since 2010 as the director of external relations. Katie's work for CEE will focus on building our network of support among alumni and industry through annual giving initiatives. In the coming year she will reach out to alumni and friends of the department for input and advice on how to best develop these initiatives.

If you are interested in talking to Katie, feel free to reach out at frisb@uw.edu or (206) 616-8310. ■

In Memoriam

Honoring the Legacy of Five Emeritus Faculty

Edward Wenk, Jr.

Edward Wenk, who passed away on June 27, 2012, served on the UW faculty from 1970 to 1990. He held a joint appointment in CEE and the Graduate School of Public Affairs, where he set up an interdisciplinary teaching and research program titled "Social Management of Technology." He received his BSCE ('40) and doctoral degree in applied mechanics ('50) from Johns Hopkins University, and an MS in applied mechanics ('47) from Harvard University.

Ed was a civilian scientist with the US Navy from 1941 to 1956, primarily in Washington, DC, where he rose to direct the Structures Division at the David Taylor Model Ship Basin. A specialist in submarine hull strength, he was aboard for the first deep-sea dive for each new class of submarines he helped design, including the nuclear-powered NAUTILUS. Ed then chaired the Department of Engineering Mechanics at the Southwest Research Institute in San Antonio. He returned to the nation's capital in 1959 as the first science and technology advisor to the US Congress, and then to the White House under Presidents Kennedy, Johnson, and Nixon. Ed was elected to the National Academy of Engineering shortly before joining the UW faculty.

In 2007 Ed established the Edward Wenk, Jr. Endowed Lectureship in Technology and Public Policy to bring to the UW distinguished practitioners bridging the fields of civil and environmental engineering and public policy. His goal was to broaden the horizons of engineering students beyond the purely technical challenges of our times. By engaging the context of social, economic, political, and environmental impacts through their knowledge and professional experience, lecturers could equip engineering students for leadership roles in public affairs. If you would like to make a gift in Ed's honor, please refer to the information at the end of this section.

Robert O. Sylvester (BSCE '36)

Bob began teaching at the UW in 1938 as an instructor of general engineering, retiring in 1978 as the chair of CEE. He earned his master's degree from Harvard and completed military duty during World War II, including post-war sea duty commands throughout the South Pacific.

His professional teaching and research interests centered on water resources and quality, and he studied and reported on the region's fresh and saltwater bodies. Bob served as a consultant to numerous governmental agencies, industries, and engineering firms. In the late 1940s and early 1950s, he prepared reports and served on committees leading to the formation of the Metropolitan Seattle (Metro) system. In 1994 Bob was honored with the College of Engineering's Outstanding Alumni Achievement Award in recognition of his contributions to the engineering profession. He passed away on April 21, 2011.

In 2006 Bob and his family established the Robert O. and Irene V. Sylvester Family Endowed Professorship in Water Resources–Environmental Engineering. The endowment goal is to attract and retain distinguished faculty in this specialty. Professor Dennis Lettenmaier currently holds this professorship.

Billy J. Hartz

Billy Hartz joined the UW faculty in 1955 after earning his PhD in structural dynamics from the University of California at Berkeley. He developed and taught courses in engineering mechanics and structural mechanics. His focus was design and analysis of marine structures in severe environments, such as the first offshore oil-drilling platform on the California coast, the structural behavior of floating bridges and breakwaters, and the design problems of ships. He was internationally known for his work in finite element analysis, and held more than ten patents, including ones for the TERRAFOIL Mass Transit System and the Billy Board™.

Before he passed away on June 24, 2011, friends and former students honored him through the Professor Billy J. Hartz Endowed Student Support Fund in Civil & Environmental Engineering, instigated by CEE alum Al Potvin (MSCE '66, PhD CE '68). The goal is to build the fund to provide an annual scholarship. If you would like to make a gift in Billy's honor, please refer to the information at the end of this section.

Roy B. Sawhill (BSCE '50)

During World War II, Roy Sawhill served in a US Navy construction battalion in North Africa, building the staging area for the invasion of Sicily, and later roads and airfields in the South Pacific. After earning his BSCE at UW, he received a BS in mechanical engineering ('52) from the University of California, Berkeley. Following several years with the Seattle Engineering Department, he returned to the UW as an assistant

professor in 1956, rising to professor in 1969. Roy focused his teaching and investigation on transportation engineering, with a specialty in traffic engineering and safety, until retiring in 1983 after 27 years on the faculty. He passed away on September 16, 2011.

William MacKay Miller

(BSCE '51, MSCE '52)

Bill Miller served in the Navy during World War II, as a radioman and member of the Sino-American Cooperative Organization (SACO), a group of nearly 3,000 servicemen who operated behind Japanese lines in China. Nearly 120,000 Chinese guerillas and others assisted this "Rice Paddy Navy." After earning his UW degrees, Bill was appointed assistant professor in 1955 and associate professor in 1959. After retiring in 1983 he taught part-time, covering a range of subjects including mechanics, hydraulics, structures, materials of construction, timber design, and highway design. Bill assisted the American Society of Civil Engineers Student Chapter in building concrete canoes; his hands-on supervision ensured high craftsmanship. Bill passed away on May 7, 2012.

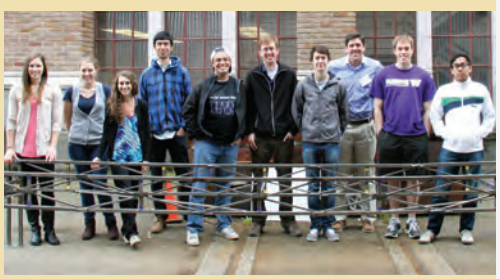
Honorary Gifts: *If you would like to make a gift to the funds or endowments honoring Edward Wenk, Robert Sylvester, or Billy Harz, please contact Megan Ingram at mkingram@uw.edu or (206) 685-1378.* ■

UW Will Host 2013 National Steel Bridge Competition

Student teams from 45 universities across the US, Canada, and Mexico will descend on Seattle May 31 to June 1 for the National Student Steel Bridge Competition. Co-organizers of the event are the American Institute of Steel Construction, the American Society of Civil Engineers, and UW Civil & Environmental Engineering.

On the road to Seattle, each student team will spend countless hours designing, fabricating, erecting, and testing their bridges, and then must place highly in regional competitions. Bridges are judged for display, construction speed, lightness, stiffness, construction economy, and structural efficiency.

Student directors of the 2013 CEE team are Rosslyn Luke and Francesca Renouard. Associate Professor Jeffrey Berman is the faculty advisor. For more information or to get involved with the 2013 team as a sponsor or volunteer, email nssbc13@u.washington.edu. Also check out a cool promo video highlighting Seattle and the UW at www.ce.washington.edu/students/NSSBC.html. ■



The UW hosted the 2012 regional competition on April 28. Each entry had to be 23 feet long and support 2,500 pounds. UW CEE placed seventh among 12 teams.

Chair's Message

(continued from page 2)

An equally important aspect, though, is engagement and advocacy. The need for a strong alumni community is growing dramatically as the traditional stability of a publically funded institution must be replaced with different modes of operation (but not mission). As indicated by the stories in this newsletter, we have a great department with outstanding programs, but as a public institution, we're turning away too many qualified students and yet we can't let budget-driven retrenchment define our future.

Here in CEE we are making significant changes in the ways we function internally to maximize our efficiency, leverage technology, and diversify our revenue streams. Our students have taken on dramatically higher tuition costs to partially backfill reduced state support. At the state level, budget cutting for higher education has finally slowed, and the UW itself is directing additional funding to engineering. These actions are helping to restore financial stability and are beginning to address growth needs, but we will still need greatly expanded external partnerships to enable us to meet demand.

If, like me, you have traversed your alumni years with benign neglect for UW CEE (not unreasonable when state funding support was strong), I'd like to ask that you begin to think about recalibrating to a higher level of commitment. When you hear from us or your fellow alums, we encourage you to be receptive. We have our work cut out for us, but I am confident that together we can ensure for the next generation of students the kind of access to world-class CEE education and research we all benefited from and that benefits our wider community. ■

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The Bridge

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The Bridge

Graduation 2012: Green Light for Cap Tossing

More than 250 CEE students participated in the June 10, 2012 graduation celebration at Daniels Recital Hall in the historic First United Methodist Church sanctuary building in downtown Seattle. Along with more than 900 family, friends, CEE faculty, and staff, they were captivated by the moving "welcome to the profession" address by Gary Griggs (BSCE '67, MSCE '68), senior vice president for Parsons Brinckerhoff. He recounted the path that brought him to where he is today—citing the significance of hard work, tenacity, holding true to your own morals and beliefs, and most important, maintaining a balance between work and personal life.

Then came the presentation of the 2012 Neil and Ann Hawkins Prize, awarded to Anthony Poggioli and Joseph Harmon. It annually recognizes two BSCE graduates for high academic achievement, leadership, and service to the department or civil engineering community. Professor Timothy Larson received the Outstanding Mentor Award and Assistant Professor Michael Dodd the Outstanding Teacher Award, honored by vote of the student body.

Gary Griggs

Graduates were individually recognized by name as they proceeded across the stage to shake hands with CEE chair and professor Gregory Miller and receive their 2012 graduate pin. At the ceremony's conclusion, Professor Miller thanked everyone for attending, especially family members and friends for supporting their loved ones and for their part in creating future engineers. Miller then congratulated the graduates and gave the long-awaited "green light" to toss their hats in celebration of their accomplishments. ■