

THE BRIDGE

SPRING/
SUMMER
2016

CEE Community Celebrates Two Faculty Retirements

The UW CEE community celebrated the retirements of two faculty members at the department's spring mixer in June 2016. Professor Mark Benjamin retired after 39 years and Professor David Stensel retired after 32 years with the department. Department Chair Greg Miller presented both with gifts and shared highlights about each faculty member.

From authoring textbooks to founding a start-up to advancing research, both Benjamin and Stensel have achieved much during their tenure in UW CEE. Learn more about their many accomplishments on [page 7](#).



David Stensel, Chair Greg Miller and Mark Benjamin, from left.

UW CEE Ranked #14 Best Graduate School for 2017

UW CEE is on the move once again. In just four years, the department has moved up five rankings in *U.S. News & World Report's* annual listing of the best schools. UW CEE was ranked #14 best graduate school for 2017, an improvement from a #15 ranking the previous year. Congratulations to UW CEE's faculty, students and staff who make the department a place of excellence!



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MESSAGE FROM THE CHAIR

There are numerous national and international ranking systems for universities and departments. I generally try not to pay too much attention to the rankings, as we are more interested in making the department a place of excellence without keeping score. However, I recently learned of a few noteworthy UW rankings.

The UW as a whole is currently number 15 in the world according to the Shanghai Jiao Tong World University ranking, which is a commonly cited system based on quantified research and education impact. Also, according to this year's *NY Times* UpShot College Ranking, the UW is ranked 13 in the U.S. among the "Top Colleges Doing the Most for Low-Income Students." This dual recognition for both world-class scholarship and for providing broad access indicates that UW takes its mission as a public university seriously.

As a department we generally do well in common rankings, currently placing 14 out of approximately 175 civil programs nationally according to *U.S. News & World Report*, and in the top five of public university CEE programs with comparable numbers of faculty. CEE students are regularly recognized for their academic achievements, both locally and nationally, which demonstrates the quality of the people choosing to pursue UW CEE degrees. CEE's enrollment of Pell eligible students is consistently above the college average, which is a reflection of the economic diversity of our students. We take to heart our dual mission of both academic excellence and broad access to education.

These statistics align with our ongoing efforts toward improving access through growth. Since December 2009, when my term as department chair began, we have hired a total of 17 new faculty members. This has enabled us to increase the number of students served at both the undergraduate and graduate levels. The primary funding for this growth is a combination of legislative reinvestment, enrollment-based UW funding allocations, and the expansion of self-sustaining master's degree programs. Student access

has also been enhanced through CEE scholarships and support funds from the generous support of alumni and friends.

Our 2020 target, set in 2010, is to reach 40 full-time faculty members and a corresponding 30-40 percent increase in graduate and undergraduate degrees.

To date, we are on pace to achieve this growth target, but we are facing the challenge of fitting within our building footprint.

We have invested \$2.5 million during the past five years to update our space, but there are limits to the capacity of older buildings such as More Hall.

CEE is not alone in facing a space squeeze. The entire College of Engineering (COE) has been undergoing similar growth, and at a recent COE Space Summit it was evident that all departments are finding themselves up against growth walls both literally and figuratively. This has prompted discussions about the possibility of building a shared interdisciplinary engineering building to take pressure off existing facilities. The basic idea is to provide new and modern student project space, classrooms and labs, and repurpose some space in older buildings such as More Hall. I will provide updates as the idea develops. In the interim, we will continue to provide excellence and access, and as always, we appreciate the support of the CEE community in making this possible.

Greg Miller
Professor and Chair



Greg Miller, Professor & Chair

"OUR 2020 TARGET, SET IN 2010, IS TO REACH 40 FULL-TIME FACULTY MEMBERS AND A CORRESPONDING 30-40 PERCENT INCREASE IN GRADUATE AND UNDERGRADUATE DEGREES. TO DATE, WE ARE ON PACE TO ACHIEVE THIS GROWTH TARGET, BUT WE ARE FACING THE CHALLENGE OF FITTING WITHIN OUR BUILDING FOOTPRINT."

AWARDS & ACCOLADES

FACULTY

Steve Kramer Honored with 2016 Nigel Priestley Prize

CEE Professor Steve Kramer is the first geotechnical engineer to receive the 2016 Nigel Priestley Prize. Bestowed by the European Centre for Training and Research in Earthquake Engineering (EUCENTRE), the award honors individuals who have demonstrated excellence in innovation, creativity, research and education in the area of earthquake engineering and engineering seismology.



Jim Thomson's Ferry Monitoring Program Receives National Award

A new program, called Ferries for Science, received one of two 2015 Environmental Council of the States (ECOS) Innovation Awards in August 2015. Overseen by CEE Associate Professor Jim Thomson, the Ferries for Science program leverages ferries to collect data about water circulation. The program saves travel costs by gathering data through sensors installed on the state-run WSDOT ferries and the Victoria Clipper ferry that travels from Seattle to Vancouver, B.C. For more details about the program, please visit apl.uw.edu/ferriesforscience.



STUDENTS

Lauren Phillips Selected to Attend We Go CEE Workshop

CEE senior Lauren Phillips is one of 45 students selected to attend the Women Exploring Graduate Opportunities in Civil and Environmental Engineering (We Go CEE) Workshop, to be held at the University of Illinois at Urbana-Champaign in September 2016. Prospective attendees must apply to attend the professional workshop, which prepares students to apply to graduate school and pursue research opportunities in civil and environmental engineering.



ALUMNI

Richard Gilmore Named Gov't Engineer of the Year

Alumnus Richard Gilmore (BSCE '72, MSCE '75) was honored with the 2016 Government Engineer of the Year Award by the Puget Sound Engineering Council. The award recognizes Gilmore's leadership and contributions to improving the region's water and wastewater infrastructure while serving as the supervisor of technical services for the Federal Way Water and Sewer District and later as the district engineer for the Silver Lake Water and Sewer District.



Engineering Students Awarded for Hypersonic Speed Travel Design

In addition to planes, trains and automobiles, people may one day soon have yet another travel option: vacuum tube pods that travel at hypersonic speed. A team of engineering students at UW, including recently graduated CEE senior Malachi Williams, is working to advance the new high-speed transportation concept. The UW team, UWashingon Hyperloop, received the Safety Subsystem Technical Excellence Award at a ceremony at Texas A&M University in January 2016.

The awards ceremony was part of a larger design competition, the SpaceX Hyperloop Pod Design Competition, where more than 100 teams presented their designs for the futuristic transportation concept. The top teams, including the UW team, are now working to develop prototypes, which they will test on a one-mile track at SpaceX's California headquarters this summer.

The new ground transportation idea was originally unveiled in 2013 by entrepreneur Elon Musk, the founder of SpaceX and co-founder of Tesla Motors. Musk came up with the concept after being frustrated with California's high-speed rail project, saying that the Hyperloop system could make transportation more efficient between cities, such as traveling between Los Angeles and San Francisco in 30 minutes.



The UW team's trophy, signed by Elon Musk.

STUDENT NEWS

Biodegradable Plastic Wins Environmental Innovation Challenge

Creating a biodegradable plastic for agricultural uses that can suppress weeds and conserve water before decomposing into fertilizer sounds like a good idea. That's what the judges thought, too.

The grand-prize winning team at the eighth annual Alaska Airlines Environmental Innovation Challenge impressed judges by developing a new type of biodegradable plastic that may provide an alternative to conventional plastic mulch. Called AgriC, the winning team includes Civil & Environmental Engineering student Xinyao Ding. Competing against 23 teams from seven universities throughout Washington state, AgriC won the \$15,000 grand prize.

"I thought our project was good enough to win a prize, but first place never came across my mind," said Ding, who is an exchange student from Sichuan University, China. "This will reduce non-biodegradable plastics that are swirling in the environment."

Ding's team created the biodegradable plastic out of chitin, an organic material derived from crustacean shells. The biodegradable plastic is intended to be used to cover crops as a mulch film and decomposes into fertilizer after use. Although still in the research and development stage, the biodegradable mulch film may one day provide a more sustainable alternative to conventional plastic mulch, which is predominantly used in large-scale vegetable farming and the disposal of which is an emerging environmental concern. The product was inspired by research conducted by the Wyss Institute for Biologically Inspired Engineering at Harvard, which uses design principles from nature to develop more sustainable devices and materials.

"What makes our prototype unique is the idea of using it to make mulch film, which has a niche of serving as a fertilizer after decomposing," Ding said. "Previous research only focused on items such as shopping bags, cups and egg containers."

Ding oversaw development of the prototype. After contacting several local plastic manufacturers requesting to use their equipment to produce the mulch film, Ding was repeatedly told that the new chitin material may damage their machines. So, she made the prototype in her kitchen using chitosan powder and white vinegar. She is currently working to refine the recipe.

Although her AgriC teammates will not be continuing the project, due to new jobs and internships, Ding plans to continue developing the product when she returns to China this summer. She hopes to eventually return to UW to earn her master's degree.

"I have faith in the project," Ding said. "I will get the perfect recipe first and then consider going to market."

Held at Seattle Center in March 2016, the Environmental Innovation Challenge encourages student teams to present business ideas that positively impact the environment. More than 150 judges awarded a total of \$36,000 to winning teams. The competition is hosted by the Buerk Center for Entrepreneurship at the UW Foster School of Business.



Photo Credit: Buerk Center

CEE junior Xinyao Ding, far left, is one of four students to win the grand prize at the Environmental Innovation Challenge in March 2016. Teammates are students Daniel Park (Foster School of Business), Moni Pal (Economics) and Andy Tan (Biology and ACMS).



UW Concrete Canoe Team Claims 10th Place at Nationals



Photo Credit: Peter Mackenzie-Helnwein

If they can make concrete float, there isn't much the UW Concrete Canoe Team can't do, as evidenced by their strong finish at the 2016 National Concrete Canoe Competition. Competing against a total of 21 teams, the UW Concrete Canoe Team claimed 10th place at the event held at the University of Texas at Tyler in June 2016.

"All team members gave their very best to achieve this," said faculty advisor Peter Mackenzie-Helnwein.

The team's 40 undergraduate student members compete against other teams from colleges throughout the U.S. Scoring is based on four components: a presentation detailing the design and construction of the canoe, a technical paper, the final product and various races including women's endurance, men's endurance, women's sprints, men's sprints and co-ed sprints.

Every fall quarter the team starts working on a new canoe, which entails formulating an ideal concrete mix and determining the design and theme of the vessel. This year, the team named the canoe "Edgewater," the historical name of the Wallingford neighborhood in Seattle where Gas Works Park is located and the former site of a gasification plant. The public park still features many historical buildings, which inspired the artistic design of the canoe including an inlay of colorful pipes on the canoe's interior.

Top Honors

5th time placing in top 10 at nationals

4th consecutive year winning regionals

For the first time in UW's long history of concrete canoes, the team added post-tensioning to the lightweight concrete design. This successfully reinforced the concrete of the 20-foot long 195-pound canoe, making it less susceptible to cracks.

"Adding post tensioning to the delicate shell design required several innovations, which the team achieved with outstanding success, creating the first concrete canoe showing no noticeable cracks even after a rough day of intense racing," said Mackenzie-Helnwein.

This is the fifth time the team has placed in the top 10 at nationals since the team was founded in 1975. The team also has a strong record of taking first place at regionals. For the fourth year in a row, the UW team took first place at the Pacific Northwest Regional Concrete Canoe Competition in April 2016.





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Professor Julian Marshall

New CEE-Led Center for Air Pollution Research Funded by \$10 Million EPA Grant

Air pollution is the cause of more than 3 percent of all deaths in the United States, according to the Global Burden of Disease study led by the UW's Institute for Health Metrics and Evaluation. This is a higher percentage than deaths related to drug use or road injuries. Although air quality in the United States has generally improved in recent decades, new findings have shown that air pollution is worse for public health than previously thought.

To address the nation's pressing need for better air quality, a research team that includes UW Civil & Environmental Engineering researchers has received a \$10 million Air, Climate and Energy (ACE) grant from the Environmental Protection Agency (EPA).

The five-year grant funds a new research center, called the Center for Air, Climate and Energy Solutions (CACES), co-led by UW CEE Professor Julian Marshall in collaboration with more than 25 researchers from the University of Minnesota, Carnegie Mellon University and several other universities.

CACES is one of three ACE centers funded to address three primary

"We aim to make tools that are easier for others to use to understand how to improve air quality and reduce the negative health effects."

Julian Marshall, John R. Kiely Endowed Professor

objectives: better combined management of air pollution and climate change, the development of strategies for managing multiple air pollutants, and to tailor regulatory efforts to regions of the United States based on local context. A common theme in the UW effort is to improve access to air pollution data and models for both experts and novices.

"Several important steps for understanding and improving air pollution are challenging to carry out," Marshall said. "We aim to make

tools that are easier for others to use to understand how to improve air quality and reduce the negative health effects."

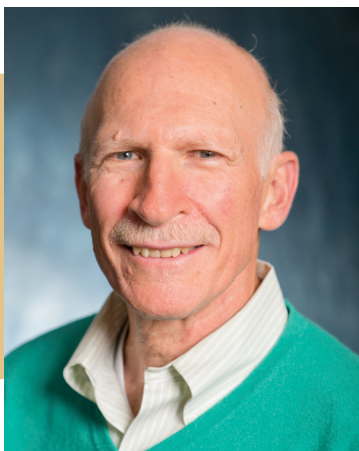
CACES researchers will specifically explore which pollutants are most damaging to people's health, the levels of current pollutants and sources of pollution. The researchers will also provide guidance to the EPA regarding how air pollution emissions and concentrations are anticipated to change in the future and will evaluate strategies for reducing air pollution.

Since air pollution and climate change are both largely caused by the combustion of fossil fuels, researchers will use a new approach, combining their air pollution research with the related areas of climate change and energy usage. The integrated approach will address commonalities and encourage solutions that will positively impact all three areas.

Another critical aspect of the research is investigating environmental justice, to determine which populations have more exposure to air pollution and how new air quality management strategies may alter current disparities.

Mark Benjamin

- Joined the UW CEE faculty in 1977
- An expert on physical and chemical water treatment processes, specifically NOM removal



Professor Mark Benjamin Retires After 39 Years with UW CEE

After 39 years with UW CEE, Professor Mark Benjamin is retiring. Benjamin joined the faculty in 1977 after earning his Ph.D. in environmental engineering from Stanford University. During his tenure in UW CEE, he has advanced water treatment research, founded a start-up, written two textbooks and assisted with humanitarian aid projects through Engineers Without Borders.

Research

Over the years, Benjamin has become an expert on physical and chemical water treatment processes. His long-term research focus has specifically been on the removal of natural organic matter (NOM) from potable water, which originates when decaying plants are washed into water. In the 1970s, it was discovered that NOM reacts with the chlorine added to drinking water, resulting in the formation of chloroform and other carcinogenic products.

"That became a big deal. Everyone was trying to figure out how to reduce it," Benjamin said. "We didn't want to stop using chlorine disinfectant, since it prevents cholera and other devastating waterborne diseases."

Start-up Success

Benjamin and his graduate students began working on a solution to the NOM problem in the early 1990s. While working on an approach to prevent NOM from plugging up membranes, graduate student Yujung Chang developed a process for removing the NOM from water. The UW patented the process while Benjamin and his students continued to advance it. Last year Benjamin and another student, Nathan Cai, founded a company called MicroHAOPS Incorporated to commercialize the technology. After he retires, Benjamin plans to continue his work with the start-up.

Textbooks

In addition to his research, Benjamin also has published two

(See BENJAMIN, page 10)

David Stensel

- Joined the UW CEE faculty in 1984
- An expert on biological processes to remove contaminants from wastewater



Professor David Stensel Retires After 32 Years with the Department

Professor David Stensel is retiring from UW CEE after 32 years with the department. Stensel joined the UW CEE faculty in 1984 and is an expert on biological processes to remove contaminants from wastewater, enabling cleaner water to be returned to the environment.

"I feel privileged to have worked here at UW," Stensel said. "I have had such wonderful graduate students and have been around top-notch faculty."

Stensel received his Ph.D. in environmental engineering from Cornell University. He joined UW CEE after teaching at the University of Utah for four years and working in industry for a decade.

Research

Stensel is most well-known for his work on biological nutrient removal processes. With biological treatment processes, Stensel uses microorganisms in different reactors and designs to break down organic substances in wastewater without the use of chemicals. Stensel has focused on phosphorus recovery as well as the biodegradation of estrogen compounds in wastewater treatment.

"I love working with organisms and building tanks," Stensel said. "I love creating these systems."

Textbook

Stensel is the co-author of a textbook on wastewater engineering that is widely used in the classroom and by practicing engineers. Titled "Wastewater Treatment Engineering," the fifth edition was published in 2014.

Honors

Over the years, Stensel has received numerous honors, including the ASCE Rudolf Hering Medal, the Water Environment Federation Harrison Prescott Eddy Medal, which he was awarded twice, and the Water Environment Federation George Bradley Gascoigne Medal.

(See STENSEL, page 10)

ALUMNI NEWS

Class of 1966 Honored at Graduation Ceremony

For a certain group of alumni, graduation day was not only an opportunity to reflect on their college careers, but also on their successful careers in industry and academia. For the fourth consecutive year, the 50th reunion class was celebrated at the CEE Graduation Celebration on June 12, 2016. This year's honorees pursued a variety of career paths and included a professor, public works director and engineers working in construction conflict resolution and litigation and business development.

After enjoying lunch and a chance to catch-up with fellow classmates, commemorative "stoles of gratitude" were presented to nine alumni from the class of 1966 by Department Chair Greg Miller. The alumni were then invited to walk in the procession with faculty and graduates and were introduced to the audience.



Back row: Andy Taylor (BSCE '83, MSCE '85, graduation speaker), Mike Pilat (Ph.D. '67, emeritus faculty), Alan Sorensen (BSCE '66), Rick Kester (BSCE '66, MSCE '72, Ph.D. '80), John Murray (BSCE '66, MSCE '71) and Bruce Livingstone (BSCE '66), left to right.
Front row: Bill Coburn (BSCE '66), Vic Bishop (MSCE '66), Greg Miller (BSCE '80, Chair), Vincent Akhimie (BSCE '66, MSCE '68) and Neil Hawkins (emeritus faculty), left to right.

Alum Travis Morgado Remembered at UW Memorial Day Ceremony



Travis Morgado

Alumnus Travis Morgado (BSCE '09) is remembered for many things: an incredible memory, subtle sense of humor, devotion to his family and, ultimately, sacrificing his life for his country. Morgado, who was killed in action during Operation Enduring Freedom in Afghanistan four years ago, was honored at a ceremony at the UW Seattle campus in May 2016.

During the ceremony, more than 20 of Morgado's family, friends and members of his unit were in attendance.

His mother, Andrea Kessler, accepted a plaque in his honor, presented by Dr. Samantha Powers, Director of Student Veteran Life, and members of the UW Reserve Officer Training Corps.

After graduating from UW CEE in 2009, Morgado wanted to give back to a country that he felt had given him so much, particularly the opportunity for an education. He enlisted in the U.S. Army in November 2010. He spent a year training in the Army, completing Officer Candidate School, Infantry School, Ranger School and Airborne School. Morgado was deployed in March 2012 and killed just two months later when his patrol was attacked with an Improvised Explosive Device.

"Even when deployed to such a dangerous place, he worried for



Photo Credit: Conrad Blake
Dr. Samantha Powers, Director of Student Veteran Life, presents an honorary plaque to Andrea Kessler, mother of 2nd Lieutenant Travis Morgado.

his family and friends more than for himself," his mother said. "He was loved by many."

The ceremony to remember Morgado was the culminating event that wrapped up four days of Memorial Day activities organized by Student Veteran Life, Husky Veterans and UW ROTC units, with the goal of honoring those killed in action while serving in the U.S. Armed Forces. Leading up to the ceremony, students placed 4,424 small flags in the HUB lawn, organized a ceremonial banner signing and hosted a memorial run on campus.

A Timeless Honor

Marc Edwards Named
One of the World's
Most Influential People
by *Time Magazine*



UW CEE alum Marc Edwards' (Ph.D. '90) fascination with water started at a young age. Growing up on the shores of Lake Erie, he enjoyed fishing and keeping an aquarium. Now a professor at Virginia Tech, Edwards is a nationally recognized expert on water quality. In April 2016, he was named one of the world's most 100 influential people by *Time Magazine* for his work to uncover lead poisoning during what is known as the "Flint water crisis."

"It was humbling," Edwards said about the honor. "To the extent that I deserved recognition, it is only because I gave voice to people who had none."

Edwards received the honor together with pediatrician Mona Hanna-Attisha, who discovered an alarming number of children with lead poisoning in the city of Flint, Michigan. During the Flint water crisis, Edwards led a team of 25 volunteers from Virginia Tech who executed what Edwards calls the "most thorough independent study of a water supply in U.S. history." The research team quickly uncovered excessive levels of lead in the city's water system, which was traced back to 2014 when the city began to source its water supply from the Flint River. The corrosive river water caused lead from older pipes to leach into the drinking water, exposing as many as 12,000 children to high levels of lead.

"We collected the first samples from the home of a Flint mom who had a lead poisoned child, which showed the nature of the health threat," Edwards said. "We collaborated with other outsiders who helped Flint residents get to the truth of what was happening to their children and city."

In January 2016, the Governor of Michigan declared the city of Flint to be in a state of emergency, providing funding for medical care and supplies. Due to the mishandling of the water contamination by government officials, several lawsuits were filed. Criminal charges were also filed against two Michigan Department of Environmental Quality employees and a city water plant operator for misconduct and tampering with evidence.

Prior to the Flint water crisis, Edwards gained national attention for discovering elevated lead levels in Washington D.C.'s water supply in the 1990s. After uncovering an inaccurate report published by the Centers for Disease Control and Prevention (CDC), Edwards was pressured to stop his research and funding was discontinued. He pressed on, funding the remainder of the research from his own pocket. As a result of his six-year effort, a Congressional Investigation determined that the CDC engaged in "scientifically indefensible" research.

For Edwards, scientific research is a public service. Despite laws such as the Clean Water Act and Safe Drinking Water Act, which are intended to prevent disasters such as the Flint water crisis, they cannot protect against negligence and misconduct. By exposing problems, institutions have an opportunity to change for the better, Edwards said.

"At some point I decided that paying any price to expose unethical science and engineering was worth it," Edwards said. "It is not a path for the faint of heart, and I cannot recommend it to others, but it has to be done."

Boundless Endowment Support Raises \$5.1 Million for CEE

Thanks to the generosity of many CEE alumni, friends and faculty during last year's campus-wide UW Endowment Matching Program, a total of \$5.1 million was raised for the department. Intended to encourage the establishment of new endowments and to grow existing endowments, the program matched gifts of \$100,000 or more at 50 percent.

Of the \$5.1 million, donor dollars totaled \$3.4 million and \$1.7 million came from matching funds. As a result, the department's total endowment, comprised of many individual funds, increased 17.4 percent, and was valued at \$29.3 million at the end of the 2015 fiscal year.

UW Endowment Matching Program Civil & Environmental Engineering Results



Ten CEE funds benefited from donor gifts leveraged with the UW match. Donor dollars totaled \$3.4 million, earning a match total of \$1.7 million.

BENJAMIN

(Continued from page 7)

textbooks. The first, a widely adopted graduate-level textbook on water chemistry was published in 2002. A second textbook was published in 2014, on water quality engineering and treatment processes.

Humanitarian Help

Benjamin has also been involved in the UW chapter of Engineers Without Borders, serving as an advisor for the team since its inception in 2005. In the past decade, the team has completed a variety of projects in Latin America, from

installing cook stoves with chimneys to reduce indoor air pollution to installing irrigation systems that enable a second annual harvest.

Honors

Benjamin is the recipient of a Fulbright Fellowship as well as several awards for best publications in various journals. He was a distinguished lecturer for the Association of Environmental Engineering and Science Professors (AEESP) in 2009-2010, which entailed a lecture tour to 20 colleges throughout the U.S. Four of his graduate students have won awards for best doctoral thesis in environmental engineering from various societies.

STENSEL

(Continued from page 7)

Last year, Stensel received the Frederick George Pohland Medal from the American Academy of Environmental Engineers and Scientists, which recognizes individuals who have demonstrated practical

research applications.

"The award meant a lot to me, since that's what I've been trying to do," Stensel said.

Retirement Plans

Stensel plans to embark on consulting work as well as continue selected research projects. Thanks to a

recent National Science Foundation grant, Stensel will be working on a new research project with Assistant Professor Mari Winkler, with the goal of developing a new approach to biological wastewater treatment that may reduce the amount of space wastewater treatment plants consume.

ALUMNI NEWS

Entrepreneurial Women Engineers Establish Scholarship Fund

In addition to owning their own engineering companies and being named “Engineer of the Year” by ACEC-WA, three CEE alumni now have one more thing in common: establishing a scholarship fund.

The three alumnae, Amy Haugerud (BSCE '77), Anne Symonds (BSCE '75, MSCE '78) and Kristen Betty (BSCE '83), joined forces in May 2016 to establish the Women Business Founders' Endowed Scholarship Fund in Civil & Environmental Engineering. The scholarship will support undergraduate students who are passionate about advancing the interests of women in the field, especially the business side of engineering.

“I want the nature of the endowment, in that it was established by women who founded successful companies, to be a reminder that women have a place in the business side of engineering,” Haugerud said.

The three business owners have, over the years, followed very similar career paths. After working for a number of years in industry, each decided to take a risk and found an engineering company. Back in the 1980s, this was largely unheard of, with the majority of engineering firms owned by men.

Two of the women, Haugerud and Symonds, first met in 1983. Shortly after Haugerud founded RoseWater Engineering, she contacted Symonds, who had founded Symonds Consulting Engineers three years earlier. Symonds' company was the first female-owned firm of its kind registered in Washington state. Both businesses grew quickly when a new state law, effective in 1983, mandated public agencies and schools contract a percentage of their work to minority and women-owned businesses. Rather than view one another as competition, the women quickly became allies.



Amy Haugerud
Founded RoseWater Engineering, 1983.



Anne Symonds
Founded Symonds Consulting Engineers, 1980.



Kristen Betty
Founded KBA, Inc., 1994.

Betty became part of the circle in the 1990s after she founded KBA, Inc. The women also bonded while working on professional issues together through the Consulting Engineering Council of Washington, now known as the American Consulting Engineers Council of Washington.

“We became friends and supported each other as we faced the various challenges that come with owning a business,” Haugerud said.

The support the women received from one another and peers throughout their careers was instrumental to their success, they say. So when Haugerud had the idea to support the next generation of engineers, her peers quickly agreed to join in. By establishing the scholarship, the women hope to support and inspire the next generation of women engineers and pathfinders.

If you are interested in supporting the Women Business Founders' Endowed Scholarship, or would like information on establishing your own endowed scholarship, please contact Katie Frisbie Bunten at frisb@uw.edu or 206.616.8310.

The Beavers Found New Distinguished Student Scholarships



Immediate past president of the Beavers, Wilford Clyde, presents the scholarship gift to UW College of Engineering Dean Mike Bragg together with trustee Thomas Draeger (BSCE '68), from left.

Earlier this year, the Beavers association and its affiliated Beavers Charitable Trust established a new distinguished scholarship in the department for students pursuing careers in heavy civil construction. With an endowed gift of \$250,000, two \$5,000 scholarships will be awarded annually to students in CEE who are meritorious and have interned with one of the Beavers member organizations.

The Beavers Charitable Trust Scholarship is a complement to a professorship previously established by the Beavers along with CEE alumnus Tom Draeger and his wife, Marilyn. Associate professor Steve Muench is the current holder of the Draeger/Beavers Professorship. The department would like to extend a hearty thank you to the Beavers Charitable Trust, and to Tom, for continued dedication to quality education in heavy civil construction at the UW.

For information on how to apply for the 2016/17 Beavers Scholarship, contact Muench at stmuench@uw.edu. To learn how to establish a scholarship in CEE, contact Katie Frisbie Bunten at frisb@uw.edu.

RETURN SERVICES REQUESTED

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

UPCOMING EVENT

CEE Tailgate Party: Save the Date!

Saturday, October 22, 2016
Two hours before kickoff (TBD)
Structures Lab (new location!)

Grab your husky gear and join the CEE department for a tailgate party before the Huskies Homecoming game against the University of Oregon on Saturday, October 22. Enjoy some pre-game fun regardless of whether you attend the game!

The family friendly event provides an opportunity for alumni to connect with colleagues, former classmates, friends and faculty while enjoying food and beverages. Learn about student projects, such as Concrete Canoe, Steel Bridge and Engineers Without Borders, and see the Big Baldwin testing machine in action!

Attendees will be updated with the start time when the kickoff is announced. To purchase tickets to the game, please visit Ticketmaster at www.ticketmaster.com.

Questions? Please contact Jill Dalinkus at 206.616.0403 or jmd4@uw.edu.

