

CE CONNECTION

Your Link to the Department of Civil Engineering

SUMMER 2018 | ISSUE 26

*Margarita Kovalchuk Leaves Indelible
Mark on Sacramento State. — Pg. 14*

INSIDE THIS ISSUE

- ▶ 10th on the 10th Ken Kerri Endowment Fund Luncheon Marks a Milestone
- ▶ NEW! Internship Spotlight: Clark Pacific
- ▶ Alumni Spotlight: Kyle Cameron



SACRAMENTO STATE
Department of Civil Engineering

CHAIR'S MESSAGE



Dear alumni, colleagues and friends,

The release of the summer CE Connection is always an exciting time that marks the end of summer and the beginning of a new academic year.

Along with 28 graduate students, we are welcoming 142 freshmen and 59 transfer students into the Civil Engineering program this year. All of these numbers are an increase compared to 2017 enrollment, with freshmen up nearly 20 percent since last year. I'm sure this is welcome news for those of you in the civil engineering and construction industry who are in desperate need of skilled engineers as the economic growth in our sector keeps increasing. Please keep in mind our Career Fair and An Evening With Industry, scheduled for **October 26** and **November 1**, respectively, are great opportunities to meet our exceptional students.

The next event on the schedule is our **Civil Engineering Department Golf Tournament**, taking place **September 7**, with an **8:00 a.m.** shotgun start at Mather Golf Course.

Click here to register:

http://www.ecs.csus.edu/ce/pdfs/ce-golf-registrationpack-2018_final.pdf

Even if you aren't a strong golfer, this is a great event to reconnect with friends, network, and meet other alumni.

Finally, I want to take this opportunity to introduce Drs. Jose Garcia and Masoud Ghodrat Abadi, new professors starting this fall in the structural and transportation engineering areas, respectively. Dr. Garcia comes to us by way of the University of Texas, Austin and is an expert on reinforced concrete durability. Dr. Ghodrat Abadi received his Ph.D. from Oregon State University and studies active transportation modes. We're excited for the expertise they will bring to the department.

I hope you enjoy the newsletter, and I hope to see you at the golf tournament!

Ben Fell – Chair, Department of Civil Engineering



SACRAMENTO STATE
Department of Civil Engineering



Support the Department

Looking for a way to support the Civil Engineering Department? We have four different funds that enhance our ability to educate students:

- ▶ **The Ken Kerri Endowment Fund** – Gifts to this fund support faculty and student enrichment activities.
- ▶ **The CE Freshman Scholarship Fund** – Scholarships are given to outstanding freshmen.
- ▶ **The Graduate Environmental/Water Resources Scholarship Fund** – Scholarships go to deserving graduate students in the environmental or water resources engineering areas.
- ▶ **The Department Trust Fund** – These resources support student attendance and participation at conferences and competitions, senior design project team expenses, and equipment for labs when other funds are not available.

To donate to any of these funds, go to www.ecs.csus.edu/ce/support.html and follow the directions for online donations.

Or mail a check made out to the appropriate fund to:

Attn: Ashley Mihok
 California State University, Sacramento
 Department of Civil Engineering
 6000 J Street, MS 6029
 Sacramento, CA 95819

CONTENTS

6 "10th on the 10th" Ken Kerri Endowment Fund Luncheon Marks a Milestone **Event** **RECAP**

8 Checking in on the **KEN KERRI** ENDOWMENT FUND

10 Internship Spotlight: Clark Pacific **INTERNSHIP** *Spotlight*

12 Women's Shadow Day Narrows its Focus on Target Students

14 Margarita Kovalchuk Leaves Indelible Mark on Sacramento State

16 Sacramento State Shines as Host of Mid Pac Competitions

18 CE Professor Helps Write National Structural Engineering Exam

20 Kyle Cameron **ALUMNI** *Spotlight*

22 **N&N** News & Notes



Upcoming Events

Gain access to all of these events through the Department of Civil Engineering Sponsorship Program! Information for 2018 sponsorship is now available at:

<http://www.ecs.csus.edu/ce/pdfs/sponsorship2018.pdf>

September 7, 2018:

7th Annual Civil Engineering Golf Tournament, Mather Golf Course

October 26, 2018:

Engineering & Computer Science Career Fair

November 1, 2018:

An Evening with Industry

10th on the 10th KEN KERRI ENDOWMENT FUND Luncheon MARKS A MILESTONE

The 10th annual luncheon honoring legendary Sacramento State Civil Engineering Professor Dr. Ken Kerri was a joyful celebration of his work that brought an enthusiastic crowd and Mayor Darrell Steinberg to the Alumni Center on April 10.



Commemorating a decade of one of the premier fundraising events for the Civil Engineering Department's Ken Kerri Endowment Fund, this luncheon included an update on the fund itself, which has now surpassed the \$250,000 mark. (For more on the progress of the fund, see article on p. 8.)

Mayor Steinberg spoke at the start of the event, and his keynote address explored the relationship between infrastructure and social responsibility. He touched on the need to connect infrastructure with young people, especially those in disadvantaged neighborhoods, and provide opportunities for both education and jobs.

"Sacramento is going through a renaissance," said Mayor Steinberg. "It's changing to focus on technology and innovation. We're a hub for art, culture, food, festivals and music. We're right to want more of that, but if it's not connected to kids – to people – we can't become great. Our greatness will come from that connection."

The mayor further spoke about the vision he has for the city to improve transportation, housing and greenhouse gas reduction through sustainable practices, and making a permanent commitment to cap and trade to facilitate those goals.

After the group enjoyed a delicious lunch catered by the campus' Epicure restaurant, Provost Ching-Hua Wang addressed the group by talking about Dr. Kerri's 55-year marriage to Judy Kerri and the fact that he spent two-thirds of his life working at Sacramento State. She explained that 48 percent of Sacramento State students come from families earning less than \$38,000 a year and invited attendees to contribute to the endowment fund.

Dean Lorenzo Smith told the crowd, "We're in the business of producing the best engineering students in the world, wherever they go. We're focusing heavily on labs and student development,

so [donating to the fund] is an investment in students guided and mentored by the best faculty around. They're doing it! We want to continue, and it will be done through the Ken Kerri Endowment Fund."

Next, one of the fund's founders, Dr. Ramzi Mahmood, stepped up to the microphone. "I want to talk about momentum," he said. "A lot of people work hard to keep this luncheon going. Ken's passion was the students, the department. This event recognizes his passion and gives thanks for his legacy. We have a great department, great leadership in Ben, and faculty who work hard day in and day out. We need you to continue this momentum."

Dr. Fell gave an update on the progress of the endowment fund, mentioning that this luncheon had the largest number of sponsors ever. He also gave an example of what the fund is used for when he spoke of being able to provide research money from the endowment fund to sweeten a job offer to a new faculty member, who decided to join Sacramento State.

To round out the luncheon, graduating senior and star student Margarita Kovalchuk ('18) gave a short presentation highlighting her undergraduate career in the Civil Engineering program, showing how scholarships and research opportunities afforded to her by the Ken Kerri Endowment Fund allowed her to flourish. (For more about Margarita's astounding achievements, see article on p. 14.)

Special thanks to all those who attended, and to the Ken Kerri Endowment Fund Organizing Committee: Andy Brownell, Bill Busath, Ramzi Mahmood, Ashley Mihok, Marco Palilla, Rich Parkhurst and Ric Reinhardt.

CHECKING IN

on the

KEN KERRI

ENDOWMENT FUND



Back in 2008, Dr. Ramzi Mahmood was chair of the Civil Engineering Department and was facing a problem: The height of the recession brought state budget cuts and a future of uncertain funding for even the core academic program – nevermind the possibility of extras like lab upgrades, research opportunities or new equipment. Fortunately, Dr. Mahmood didn't have to look far for inspiration.

"As chair, one of the things I wanted to do was really open up to the community and also strengthen the department," said Dr. Mahmood, who now serves as director of Sacramento State's Office of Water Programs. "I saw that well-established departments have endowment funds, and that gives them stability in attracting faculty, graduate and undergraduate students. Unfortunately the state general fund doesn't support such activities in predictable and reliable funding streams, so that was the impetus" for establishing the Ken Kerri Endowment Fund in 2008.

When Dr. Mahmood presented the idea of a fund named after him, Dr. Kerri was initially hesitant. He asked for time to think about naming the endowment after him. Shortly after and with support from a team of faculty, alumni and professionals, Dr. Kerri agreed and began to enthusiastically help drum up support.

"Ken was one of those faculty in Civil Engineering who contributed quite a bit to the department and its success, so this is a tribute to him," said Dr. Mahmood. During its first year in 2008, a team was assembled to raise money, manage and promote the endowment fund, and events like the annual department golf tournament and the Ken Kerri Endowment Fund Luncheon were born.

This past spring brought the 10th annual luncheon, and the Ken Kerri Endowment Fund is now at a healthy \$260,000 – with a goal to raise \$1 million by 2027.

"Ramzi's vision was to make Sacramento State the premier civil engineering program in Northern California," said Bill Busath ('91, MS '12), who has served on the Ken Kerri Endowment Fund Subcommittee since its inception. "The goal is to attract the very best faculty, have the best equipment and facilities, provide opportunities for professors to develop their careers, and encourage research and student projects that enhance the students' experience and development here in the program."

Mr. Busath, who is the director of Utilities for the City of Sacramento, serves on the subcommittee along with Dr. Mahmood; Civil Engineering Department Chair Dr. Ben Fell; Marco Palilla ('81, MS '84), associate vice president at HDR

Our Goals:

- Attract top students to the CE Program
- Attract top faculty to join Sacramento State
- Provide assistantship opportunities for undergraduate and graduate students to participate in research projects as part of faculty scholarly activities
- Support the development of new and specialty courses
- Purchase research equipment
- \$1 Million by 2027!

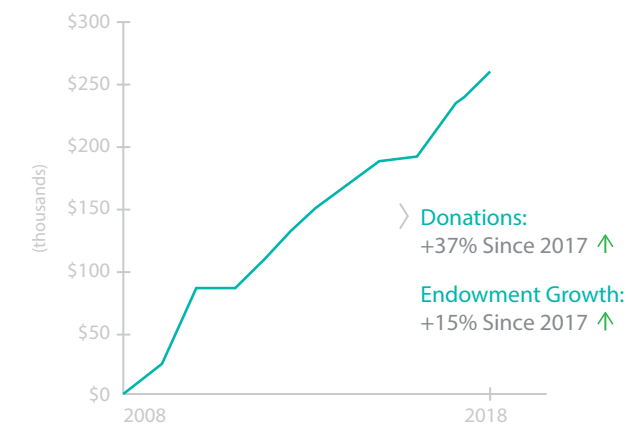
Engineering; Ric Reinhardt ('96, MS '98), principal with MBK Engineers; and Rick Liptak, president of Dokken Engineering. Assisting the subcommittee are department staff as well as Office of Water Programs staff.

"Ken is one of the most deserving people I ever met to have an endowment fund in his name," said Mr. Busath of Dr. Kerri. "His contribution to the college and to the industry of wastewater treatment and water treatment has been more than almost any single person I know. His influence has spread worldwide, so whether or not I ever had a class with Ken Kerri, [helping establish the fund] was a no-brainer. But Ken was one of the best teachers I had. He was not the easiest teacher, but he had high expectations, he laid them out clearly, and he really pushed for excellence. From my perspective that's a great teacher. He had a great, clear, deep understanding of the subject matter and could communicate it clearly and well."

Looking toward the future of the endowment fund, the subcommittee members continue to promote wider attendance at the annual luncheon and golf tournament, and they've also embraced grassroots fundraising.

"One of the things I learned about fundraising is that we need to demonstrate that we ourselves support it, too," said Dr. Mahmood. "And it's good to have wide support from a number of alumni. I know it sounds cliché to say 'don't worry about the amount,' but it's true. Obviously I'd love to see big donors as well, but my appeal is always to the wide base of people who just have their heart in the department and want to make it strong."

Endowment Fund Progress



What has the fund paid for already?

- Faculty research projects: Dr. Rich Armstrong, Dr. Amir Motlagh
- New courses: Groundwater engineering (Dr. Saad Merayyan)
- New equipment: Acoustic Doppler Velocimeter
- Lab renovations: Concrete, Traffic, Geotechnical Engineering, Environmental Engineering, Hydraulics

"Our goal is to get most alumni to contribute a little bit: \$5, \$10 or \$15 each month to the fund," said Mr. Busath. "You can go online and set up a monthly donation very easily. We encourage the alumni – those who benefited from the program – to very seriously consider it."

Save the date and bring a friend!

11th Annual Ken Kerri Endowment Fund Luncheon – Wednesday, April 10, 2019

Donate to the Ken Kerri Endowment Fund, it's easy!

- Go to www.ecs.csus.edu/CE/support.html
- Under "The Ken Kerri Endowment Fund," click on the hyperlink "secure online form"
- Choose "One Time Gift" or "Recurring Gift"
- Fill out the rest of the online form

INTERNSHIP Spotlight



› Top row (left to right): Joshua Weber, Tyler Meteere, Brian Bertain, Nathaniel Wilson
Bottom row (left to right): Jenny Kobrya, Laura Becia, Lindsey Smith, Kristi Sleeper
(does not attend Sac State), Mary Sanchez



Prefabricated Building Systems

Most companies assume that their best candidates will come from schools with larger programs," said Robby Maxey, EIT, a project engineer who shared his firm's great experience with Sacramento State student interns. "However, we at Clark Pacific have found there to be a top-notch product coming straight from our backyard. We are thrilled with the students this program has provided us and believe that their technical foundation, hands-on approach and down-to-earth personalities hold them up with the best in the nation."

In this new feature, CE Connection shines the spotlight on student internships.

Interns (pictured, with stingers up!) share their perspective on working at Clark Pacific:

"From the beginning of my internship, I felt like I was part of something larger than just a typical engineering company. Because Clark Pacific is a family-owned and operated company, they understand the importance of building lifelong relationship not only with their clients, but also employees. Their unique culture has made me feel like I am a valuable asset to the team, no matter what position I hold."

– Jennifer Kobrya

"Clark Pacific's internship program is useful in tracking your progress as an employee while also providing a base to further your learning. Every day you experience something new, whether that is from shadowing Quality Control, doing weld checks out in the yard, or editing panel drawings in Tekla. Here you are able to see the product design on a screen and then walk outside and see that same design being produced."

– Laura Becia

"Clark Pacific has been an incredible learning experience. These past months have been stocked full of engineering problem-solving, communication and coordination with different departments, and an in-depth experience into the world of precast concrete. Clark Pacific has been one of the most beneficial opportunities to my future career."

– Nathaniel Wilson

— Feature Your — INTERNSHIP!

Does your firm or agency employ Sacramento State interns? Or are you a student who wants to share your great internship experience?

Contact us at ashley.mihok@csus.edu and you may be featured in an upcoming CE Connection!

"Working at Clark Pacific has made me more open-minded about the process of getting a project done. Having production be in our backyard has given us interns the experience of not just the design of our products, but seeing them being produced in person. Not only are we able to apply what we have learned from our courses through [the College of Engineering and Computer Science], we are learning other skills that might not be taught [otherwise], such as inspecting welds, pre-tension versus post-tension, modeling experience, rigging, loading, and much more. Every day I learn one new thing, which makes each day much more exciting."

– Mary Esmeralda Sanchez

"We are so proud of these interns and absolutely love Dr. Fell and the relationship we've developed with Sac State," said Robby.



Women's SHADOW DAY

Narrows its Focus on Target Students

With its latest successful Women's Shadow Day on March 2, the Sacramento State chapter of the Society of Women Engineers (SWE) continues to evolve in its approach to the annual outreach event by honing its target audience and applying lessons learned from prior Shadow Days.

Women's Shadow Day – sponsored by SWE and carried out by numerous student volunteers from throughout the College of Engineering and Computer Science (ECS) – is designed to introduce middle and high school girls to the field of engineering through a day of fun lab activities, learning about engineering-related student clubs, and the chance to interact with Sacramento State faculty and current students.

"Over the last few years, we realized a lot of girls had already been introduced to engineering labs or had engineering classes, and that wasn't our target," said Karen Contreras, 2017-18 president of the Sacramento State chapter of SWE. "We looked for schools with no engineering programs, and reached out to those principals and math and science teachers to say, 'We're doing this event and want to see if you have any students interested in coming.'"

"It was a lot smaller group [this year], but it was great because everyone got a chance to get the hands-on approach in small

groups and talk one-on-one with professors," said Hana Macahilas, a mechanical engineering major and SWE's events coordinator.

This year's Shadow Day drew about 45 young female students from the Sacramento region who had the chance to specify their areas of interest prior to the event. Once there, attendees were divided into six groups, and after an introduction by Dr. Lorenzo Smith, Dean of the College of ECS, the groups dispatched to attend several different lab demonstrations. "Labs were run not only by professors, but by students," said Karen proudly. "We also had four or five engineering clubs that discussed projects they build. It's good for the girls to see they can actually put something together, not just study from books."

"We tried to get at least one lab from every discipline so the girls would have range," said Hana. "We did a concrete mixing lab where they got to mix and dye concrete. We had one where girls built structures from K'nex toys and shook them to see who had the best seismic design. We had a couple of programming labs, an Auto CAD lab, and a sand casting lab to make a steam engine. One of the most popular was the hydraulics lab where they did a water jump; Dr. Poindexter led that. We also did a shop tour for the mechanical side."

Shadow Day was rounded out by a panel of six college students – one from every engineering discipline at Sacramento State. "They answered questions about their experiences as females in engineering," said Karen. "That was really encouraging for the attendees to see there are girls who go through the same things they do."

Hana described the massive logistical planning effort that goes into Shadow Day, and said there were many people who helped make the day happen. She found her most rewarding moment when a freshman SWE volunteer said she had attended Shadow Day as a high school senior and was now a Computer Science major at Sac State. "That made my entire day," said Hana. "That meant I helped change that girl's life, and she was here! I was so happy."

This was Karen's fourth Shadow Day and Hana's second, so in planning for this year's event they both brought valuable perspective from prior years. "The girls all looked really happy at the end of the day," said Karen. "I feel like a lot of girls got helpful information and encouragement to pursue an education in engineering or computer science."

SWE's Sacramento State chapter would like to thank those who helped with Shadow Day, and welcomes sponsors for next year's event. Special thanks to: SWE officers/members Jennifer Chen, Sonja Croce, Jessie Forman, Margarita Kovalchuk, Kristin Lavelle, Mary Sanchez, Stephanie Waters, and Professors Ben Fell, Julie Fogarty, Cristina Poindexter, Holly Tajlil, Troy Topping, Dean Lorenzo Smith and the Office of the Dean for goody bag donations.



m a r g a r i t a
K O V A L C H U K

Leaves

Indelible Mark at Sacramento State

To cap off an undergraduate college career highlighted with scholarships, awards and research opportunities, Margarita Kovalchuk ('18) received a triple honor as she bid farewell to Sacramento State: Outstanding Student for the Department of Civil Engineering; Dean's Award for the College of Engineering and Computer Science; and a President's Medal from the university.



At this time last year, Margarita had been named the number one "Top New Face" on a list of the 10 New Faces of Civil Engineering...

"There were many other students in the running," said Margarita. "I was very impressed by their stories and their time at Sac State, so when I found out that I was the one chosen for both Dean's Award and President's Medal, it was very shocking."

At this time last year, Margarita had been named the number one "Top New Face" on a list of the 10 New Faces of Civil Engineering, chosen from students worldwide by the American Society of Civil Engineers. Today, having graduated magna cum laude, she's preparing to start an environmental engineering graduate program at Stanford as a Graduate Research Fellow of the National Science Foundation (NSF).

"This fellowship gives me freedom to choose what I want to research," said Margarita, who has completed significant hydraulics and water resources research in collaboration with Dr. Cristina Poindexter during her time at Sac State. "With other grants sponsored by the NSF, the foundation usually allocates funding for a particular project. Here, though, the funding goes to the student. The award letter cited my selection based on 'demonstrated potential to contribute to strengthening the vitality of the U.S. science and engineering enterprise.'"

The rigorous application process for the fellowship required three letters of support from faculty speaking to the applicant's academic and research accomplishments, as well as an original research plan summed up in two pages. Luckily, Margarita's involvement in research projects in her last two years at Sac State had taught her the importance of grants and fellowships, and how to apply for them.

"For four months before the deadline, whenever I had an idea I'd read a bit more and find out someone already did it," said Margarita. "Finally, there was this lightbulb moment; I wrote the description of a proposed research project, an essay about my background and some of my goals moving forward," and based on those documents, she was chosen for the fellowship. Her proposed project (which she may or may not pursue at Stanford) was titled "Image-based measurements of methane emissions in wetlands with floating vegetation."

Having attended the international Ocean Sciences Meeting earlier this year, Margarita had a chance to meet some of the Stanford professors whose work she admired, including one who presented research on jellyfish and other sea life affecting the circulation and temperature of ocean water.

"Going into Stanford, I'm really looking forward to the chance to explore a lot of different interests," she said. "I'm going to move toward more independence; that's what the flexibility of the funding gives me. After learning about a certain topic, I'll be able to branch off and do my own research. Working with the professors at Stanford will give me a great foundation to begin with."

But before she moves on, Margarita is adamant about thanking those who helped her along the way at Sacramento State. "I really want to recognize Dr. Fell and Dr. Poindexter for all they did in terms of shaping my graduate application process," she said. "Their feedback and letters of support made all the difference. Dr. Poindexter is an excellent mentor whose guidance developed my skills as a researcher and academic. I'm very grateful to other faculty and also to the students I've been classmates with. My time at Sac State formed the start of my engineering career."

Indeed, Margarita already took – and passed! – the Professional Engineer exam with a water resources and environmental engineering specialization. "Having students pass the PE exam is a good litmus test of the kind of education Sac State provides," she said. "All the professors have a dedication to students that really stands out, and the ties to industry gave me opportunities to experience internships. Sac State Civil Engineering is preparing us for engineering problems that we can solve."

With all that's laid out before Margarita, she can add "wedding planning" to her to-do list; she got engaged this year. And she's finally giving herself a well-deserved break: "Every summer since graduating high school, I was busy with research and internships," she said. "So this summer I'm volunteering at three different ministries as a church camp counselor. I'm excited to have a chance to do something completely unrelated to engineering. It's good to have balance before diving into intense graduate studies!"



SACRAMENTO STATE

Shines as Host of

MID PAC COMPETITIONS

The American Society of Civil Engineers (ASCE) Mid Pacific Conference came to town April 19-21, with the Sacramento State and University of the Pacific (UOP) campus chapters of ASCE cohosting the annual competition for civil engineering students at the Sac State campus.



Taylor Myers ('17), who was heavily involved in both the campus ASCE chapter and Mid Pac before graduating last December, donated her time to oversee coordination of the springtime event and its various competitions, working with a team of student volunteers to plan Steel Bridge, Transportation Challenge, Concrete Canoe, Geowall, Water Treatment and Water Research events. There were 17 schools participating this year, including several from abroad (although not all schools participated in every event).

Logistically the conference went very well," said Taylor. "We were on time so everything was organized." Staying on schedule was particularly important in the Steel Bridge competition, which typically exceeds the allotted time at Mid Pac.

"The history of Steel Bridge is it runs long, but this year it was scheduled on the same day as the banquet, so we knew we had a time constraint," said Nathaniel Wilson, leader of Sac State's Steel Bridge team who also helped plan Mid Pac. "We had to get every school in back-to-back. Everyone really stepped up and we ended up finishing even earlier than planned. Everyone made it to the banquet on time."

The Concrete Canoe competition is usually held on the Saturday of Mid Pac, but the planning committee decided to schedule it for Friday at Rancho Seco Lake, hoping the lake would be less busy. Despite the one-hour drive, "it was a great location," said Taylor. "It had everything we needed: plenty of space, nice bathrooms, places to get snacks and water. We did the mini games there, too."

Michael Almazan, who formulated the Transportation Challenge to mirror a real-life streetcar project being implemented in downtown Sacramento, said there were several faculty members who helped Mid Pac come together.

"Professor Peter Ouchida was the dark horse of Mid Pac," said Michael. "He's the quiet professor who didn't really talk much during the conference calls, but was really involved with putting things together in the background, especially on the safety side. He's the one who made sure during Concrete Canoe races that we had boats and a lifeguard out there. Dr. Fell was very vocal during planning, making sure everyone was headed in the right direction. The faculty members at UOP were very involved as well." Professors John Johnston and Cristina Poindexter also helped advise the students.

Working with the UOP students during the months of planning provided opportunities for both schools to bond over location scouting and logistical considerations. "There was a lot that had to be ironed out, but in the end, we got it together," said Michael.



The students involved in planning Mid Pac documented their processes for posterity and surveyed participants after the event to find out what could be improved next time. The biggest lesson learned was that trying to lead a project team while also planning the overall event caused ASCE student leaders to be spread too thin, resulting in Sacramento State scoring lower than hoped in the competitive events.

But the feedback they received indicated widespread appreciation for the meticulously planned scheduling and organization of the competition. Taylor, Nathaniel and Michael all expressed deep gratitude toward the judges who presided over Mid Pac – members of the professional engineering community who donated hours of their own time to learn and enforce the rules and provide thoughtful feedback to student competitors.

"We had 40 judges show up from all over the Sacramento area and they put in a lot of hard work," said Taylor. "We got a lot of compliments about how the judges really want to teach students what to do better. At the end of the Transportation Challenge, the judges had a five-minute discussion about what strengths people had in their reports and how they could improve, and where to find the information they would need."

Already looking toward next year's Mid Pac, Nathaniel says holding the competitions on campus was inspiring for civil engineering students who may not have otherwise had the chance to witness the event.

"I can already see the newer groups taking initiative on getting the projects coordinated and organized," he said. "They're really pumped because they saw what the competition could be. I loved being part of it all."



CE Professor Helps *Write* National Structural Engineering Exam

Professor Kim Scott-Hallett is a lecturer who specializes in structural engineering here at Sacramento State, and for nearly a decade, she's been part of the committee that writes the national exam for structural engineers.

As a member of the National Council of Examiners for Engineering and Surveying (NCEES, which also administers the exams for Professional Engineer and Engineer in Training designations), Professor Scott-Hallett is one of many engineering professionals from across the country who convene several times a year in South Carolina to formulate questions for the structural engineering exam. They also meet twice a year to grade the written portion of the exam, which is typically taken by 500-600 people each time it's offered in April and October.

Of course, Professor Scott-Hallett can't attend all six of these sessions since it would interfere with her teaching, but the NCEES is large and diverse enough to account for such scheduling conflicts. "It's a combination of professors, people from industry or government, and retired people, with a variety of age groups," she says, though each council member must have a license and be designated to practice structural engineering in his or her state. "They do their best to find people from throughout the United States, and places where there is a larger population and higher [exam] participation – like California, Oregon, Washington, Illinois and Texas – we have quite a few representatives."

"Get involved and try to make it better."

— Professor Kim Scott-Hallett

How did she become a member of the NCEES? In 2008, Professor Scott-Hallett began volunteering to write and grade the California state structural engineering exam, because she'd heard California was going to switch to the national exam and wanted to get a feel for the process before that change took place. She soon shifted to the national exam, which California adopted around 2011 (all states that have a distinct structural engineering licensure now use the national exam).

"My reason for getting involved is that whether you're in California, Nebraska, Florida, Texas or Illinois, you are taking the same national exam," said Professor Scott-Hallett. "In California we have to worry about earthquakes. I wanted to make sure our state's requirements were met; I didn't want California to be left out and someone in Nebraska to make decisions on what a licensed engineer's requirements in California should be."

The structural engineering exam has two modules: buildings and bridges, with Professor Scott-Hallett specializing in the latter. Both days of the 16-hour exam are divided in half, with multiple choice questions in the morning and written problems in the afternoon. Writing and grading these questions "is definitely a collaborative process. I really like hearing other people's opinions versus how I think it should be done," she says.

Being a member of the NCEES has been an excellent networking opportunity and a chance to learn from engineers in other states. Professor Scott-Hallett says she's made many friends over the years, and that her work on the exam has made her more cognizant of how she writes test problems for the Sacramento State classes she teaches. She's also better able to stay current on building code requirements, as well as how they are interpreted across the nation.

"I think it's important for the engineering profession to have people who care about the licensing exams," said Professor Scott-Hallett. "I've heard a lot of people in California complain about the exam, and I say to them, 'Get involved and try to make it better.' I want California to continue to be represented, and that's why I do this."

Interested in being part of NCEES?
Check out— ncees.org/education/volunteers



KYLE CAMERON

Engineering, in its purest form, is the understanding of how things work – the thrill of peeling away each layer of the onion to reveal hidden solutions to the problem of the moment. Wanting to know how cars, bridges and other structures were put together is what attracted Kyle Cameron ('14) specifically to civil engineering. That – and the Concrete Canoe.

ALUMNI
Spotlight



"I'm a problem-solver, puzzle-piece type of person," says Kyle. "Once I realized civil engineers build bridges, that was what I wanted to do. I got into UC Davis, UOP and Sacramento State. The day I came to tour Sac State, they were sanding the concrete canoe [in preparation for the Mid Pac competition], having a good time in the concrete lab and listening to music. That's what drove me to go to school here."

A Bay Area transplant, Kyle was happy to be closer to Tahoe snowboarding opportunities as a Sacramento State student. After that initial visit, he also found a calling with the Concrete Canoe team, which competes in the annual Mid Pacific ("Mid Pac") student conference sponsored by the American Society of Civil Engineers.

"What drew me to Concrete Canoe was the athletic aspect of it," says Kyle. "We're actually building a canoe out of concrete? That doesn't make sense. Then you race people in them? That's nuts! The first year I was a paddler, the next year I was co-project manager and that was the year the team went to nationals. That was a lot of fun!"

Now a project manager with Vacaville-based Bridgeway Civil Constructors, Inc., Kyle maintains an extremely busy calendar. Last year he oversaw 11 projects totaling more than \$20 million, and is currently managing four, including a highway bridge in Fremont and four miles of retaining walls to add an express lane from Fremont to Pleasanton.

"Our specialty is heavy civil highway construction, specifically highway structures, bridges and retaining walls," says Kyle of Bridgeway, which handles projects from Bakersfield up to the Oregon border, and sometimes into Nevada. "I do a lot of travel and staying in hotels, sometimes for weeks. Luckily everything recently is around Fremont and Walnut Creek."

A young company founded in 2016 by a colleague Kyle met while working on the Fix 50 highway rehabilitation project, Bridgeway is experiencing rapid growth and bids on many Caltrans projects.



Speaking of Fix 50, that project earned Kyle and his team under then-employer Myers and Sons Construction the 2014 American Public Works Association Project of the Year award (Construction/Repair category).

"The takeaway from Fix 50 is that you can never have enough planning and coordination," says Kyle. "The reason it succeeded was that every hour, something needed to happen on time."

Kyle's most memorable project to date was serving as project engineer for the 2nd Street reconnection project in Old Sacramento, which involved constructing a box girder bridge at Capitol Mall and 2nd Street, creating a new point of entry into Old Sacramento for drivers and pedestrians alike. The project also included new green bike lanes and wider sidewalks on Capitol Mall, and new railings on the O Street Bridge adjacent to the Crocker Art Museum.

"We had deep pile foundations right next to an existing retaining wall adjacent to I-5 in downtown," says Kyle. "There was a lot of heavy equipment, and the bridge itself – half of it hangs over the freeway. To design that, build it and come up with all the forming systems to tie it all together; it was a very good, challenging project."

His well-rounded Sacramento State education gave Kyle the preparation that makes challenges exciting, not daunting. "I've designed a temporary water diversion; I wouldn't be able to do that without a water resources class," says Kyle. "One day I could be testing water quality, some days I design traffic control plans. For that you need to understand sight distance, roadway curvature and so on. [Sac State] provides that ground-level education in each of those aspects, and with the industry connection, the department produces great engineers who are then successful in industry. It's a really good cycle."

Although he's now four years into the postgraduate world and received his professional engineering license last December, Kyle's involvement in Concrete Canoe didn't end with graduation. He recently served as a judge for Concrete Canoe in the Mid Pac competition, and will be the Sacramento State team's alumni advisor going into next year.

"I really like the advising," says Kyle. "I want to see the students be successful. I've been meeting with the project managers and showing them how we schedule, budget and allocate costs. I say, 'This is what we do in industry. Let's apply that to everything you're doing here.' I like the idea of growing the students so that upon graduation they're ready to be hired."

ALUMNI
Spotlight



"I'm a problem-solver, puzzle-piece type of person...Once I realized civil engineers build bridges, that was what I wanted to do."

— Kyle Cameron



Margarita Kovalchuk

2017-18
Outstanding Student, Department of
Civil Engineering

2017-18
Dean's Award, College of Engineering
and Computer Science

2017-18 President's Medal

See p. 18 to read "Margarita Kovalchuk
Leaves Indelible Mark at Sacramento State"

Students: Awards & Scholarships

Javed T. Siddiqui and Amna J. Siddiqui Scholarship



Ram Sah

"This scholarship is a huge financial support," said Ram. "I have no [other] financial support, and [receiving this], I felt like there is someone who cares in this world. I am grateful for the Javed & Amna Siddiqui scholarship that supports me to continue my education. I would like to thank them from the bottom of my heart."



Eric Muller

"I am very happy to receive this scholarship and greatly appreciate the generosity and support from the scholarship committee," says Eric. "This scholarship will help me pursue my goal of earning my civil engineering degree and my academic goal of studying abroad in Germany next school year."



John Christian Gabriel

"I feel honored and proud to be one of the recipients of the Javed T. Siddiqui and Amna J. Siddiqui Scholarship," said John. "Receiving this scholarship allows me to worry less about the costs of my education and focus more on the learning experience. I'm more inspired to continue working diligently to eventually become a successful civil engineer."

Ronald W. Smith Scholarship



Nathan Machado

"Being awarded the Ronald W. Smith Scholarship helped lighten my financial obligation, so I could devote more attention to my studies," says Nathan. "I am appreciative and extremely grateful for being chosen as a recipient. Thank you!"

ASCE Sacramento Ladies Auxiliary Scholarship (\$1,000)



Rosa Rios Dominguez

"My goal has always been to help people in some way and I found my way when I was only 12 years old," said Rosa, explaining why she chose civil engineering. "My family and I lost our house due to financial problems and the divorce that changed my siblings' and my life forever. Since then we have been in search of a place to call home. Hence, I decided to learn how to build homes for families with similar situations. I hope to achieve my higher education as a civil engineer to continue and reach my goal to not only to give my family a home, but for others as well."



Laura Becia

"Receiving the ASCE Ladies Auxiliary Scholarship was a great honor," says Laura. "I am proud to be a woman in engineering, and I hope to encourage other women to pursue this career path."

Environmental Engineering/ Water Resources Graduate Scholarship



Aleksandr Chengayev

"I would like to thank the department for awarding me a scholarship," said Aleksandr. "I am very appreciative. This money brings me one step closer to achieving my dream of getting an MS degree in Civil Engineering [specializing in] water resources! Thank you very much!"

Saranya Elankovan

CEPIAC Freshman Scholarship

Oscar Velez

Faculty

“It’s a great honor to receive this award, and also satisfying given the nature of our institution, where teaching is first priority.”

— Dr. Khan



Dr. Ghazan Khan received the 2017-18 Outstanding Scholarly and Creative Activity Award from the College of Engineering and Computer Science (ECS) this spring in a university-wide ceremony attended by leaders of the college and the Department of Civil Engineering as well as the chair of the Faculty Senate, and Provost Ching Hua-Wang, who presented the award to Dr. Khan.

Each of the colleges at Sacramento State has an annual opportunity to choose three award recipients from amongst their faculty: one for teaching, one for research and one for service. Dr. Khan received this award for his teaching in 2015-16, and this year it’s for the research he’s conducted since he arrived at Sacramento State in August 2013.

“This award recognizes the research contributions of faculty related to their area of expertise, publications since arriving at

Sac State, and the amount of external funding they’ve brought in,” said Dr. Khan. “It also considers the involvement of students in the research and how faculty are able to bring their research into the classroom.”

Having published numerous papers, securing about \$435,000 in funding, and conducting research projects that involve both Civil Engineering and Computer Science students, Dr. Khan was nominated for the award by Department Chair Dr. Ben Fell.

“It’s a great honor to receive this award, and also satisfying given the nature of our institution, where teaching is first priority,” said Dr. Khan. “Finding time for research – especially externally funded – is extremely challenging. But I’ve had great support from Dean Smith, Associate Dean Shafizadeh and Chair Fell. A lot of hard work has gone into this.”

That wasn’t the only exciting news for Dr. Khan: he recently achieved tenure and promotion and is now an Associate Professor of Civil Engineering. Normally professors are evaluated for these designations after five years on the job, however, Dr. Khan applied for early tenure after completing just four years at Sacramento State. Even with more stringent requirements than those for a five-year evaluation, Dr. Khan’s tenure and the promotion were awarded based on his achievements.



Dr. Julie Fogarty has been busy this spring and summer – she’s already presented to about 1,200 peers at an American Society of Civil Engineers (ASCE) structures conference in Texas and attended an American Institute of Steel Construction (AISC) workshop for steel educators.

At the ASCE structures conference in April, “I presented a paper on the topic of collapse resistance of locally web-damaged steel columns,” said Dr. Fogarty. “They had a new type of session where

six or seven presenters speak for three minutes each, then the remainder of the session is spent with presenters discussing their work in further detail with the aid of laptops or posters with interested attendees. It’s a new format they’re trying rather than the typical 15-minute presentation and three-minute Q and A.”

The research she presented at the Texas conference was funded through a Research Creative Award (RCA) Dr. Fogarty received from the university, and took place mostly in fall 2017.

For her project, “I damaged the web of computational steel columns as you might see in the field whether the damage was the result of corrosion or when retrofitting connections requires removing portions of the web for access. I wanted to quantify the reduction in column axial strength based on the amount and location of damage. It turns out there were even more applications for this work as researchers similarly damage columns for blast scenarios and were very interested in my results.”

In July, Dr. Fogarty was one of about 40 college faculty members who teach steel at the undergraduate and graduate level selected to attend the AISC steel educator workshop, also in Texas.

“We got together to talk about what skills our students need to successfully design with steel, the latest code updates, and different tools to help us more effectively teach steel design,” said Dr. Fogarty. Having attended a similar workshop two years ago aimed only at new educators, she said this summer’s event succeeded in building upon the solid foundation developed in the first workshop.

“This time there was more discussion, a variety of faculty from different institutions, and a broader range of experience levels,” she said. “Everybody was sharing what’s been successful, what’s been challenging, and getting feedback and advice. I got a lot of new ideas – there are so many things I hope to incorporate.”

Faculty

Dr. Amir Motlagh feels fortunate to have attended the 20th annual ExCEEEd (Excellence in Civil Engineering Education) workshop presented by the American Society of Civil Engineers (ASCE) at the University of Nebraska at Omaha in June.

The intensive six-day workshop some refer to as “boot camp” is designed to demonstrate highly effective, engaging methods of teaching through seminars and self-evaluation. “In addition to several practical seminars and demo classes, we have to present three practice classes in front of two mentors and three other participants,” said Dr. Motlagh. “They filmed us, and initially it wasn’t easy to watch ourselves, but it was really helpful to have a self-assessment and realize, for instance, you’re not projecting your voice correctly, or not engaging the students, or not welcoming to their questions.”

The ExCEEEd workshop is primarily for professors who are starting their careers, but Dr. Motlagh says that among the 24 participants, there were several who’d been in the profession for years, but were seeking to improve their teaching or working on a curriculum committee and sought to learn best practices.

Applying for the in-demand ExCEEEd workshop entails outlining goals the participant hopes to achieve after attending the workshop, convincing a selection committee that they’ll be able to implement those goals and improve their teaching, and submitting letters of support. “Ben [Fell] wrote a letter of support and it was really helpful to get me into the workshop,” said Dr. Motlagh. “The department financially supported the whole trip.”



Dr. Motlagh describes the workshop itself as comprehensive and unique. “I’ve attended a lot of workshops that are general, for faculty in different departments and colleges,” he said. “Those are really helpful, but this one was special because it’s designed for civil engineers. I was glad I was able to attend this workshop in the beginning of my career. I’m excited to implement some of the techniques I learned this fall.”



Dr. Richard Armstrong was pleasantly surprised to learn he’d received a Sponsored Work Augmentation Grant – known as SWAG – from the Sacramento State Office of Research, Innovation and Economic Development. The \$1,000 award was given in recognition of the funding he received from the California Geological Survey for his project titled “Relationship Between Earthquake Motion and Dam Deformation.”

The SWAG award letter stated: These funds are to support professional development to facilitate the successful implementation of your project or continue closely related scholarly work in your field.

Dr. Armstrong plans to use the SWAG funds to travel to a United States Society on Dams (USSD) conference in Chicago next April, where he will present research he plans to complete during the fall 2018 semester. “In Chicago I’ll present work related to the stability and performance of dams during earthquakes, which is a continuation of research I’ve been doing over a few years,” said Dr. Armstrong. “The USSD is one of the primary technical, national organizations in the U.S. that focuses on dams, dam safety and design, and levees.”

The work he’ll present at the USSD conference will be funded by the Research Creative Award (RCA) he recently received from the university for research and scholarly activity, which gives Dr. Armstrong four units of release time from teaching. “The RCA builds on a previous project I had with the California Geological Survey,” said Dr. Armstrong. “This project is focused on predicting damage to embankments during earthquakes through analysis of strong ground motion data.”

“There are more than 1,000 dams in California,” he continued. “Many of them have strong ground motion instruments that measure shaking. Engineers are interested in the shaking that causes damage to a structure. Seismologists also look at ground motion data, but they’re also interested in how waves propagate through the earth. This is data we can look at remotely and hopefully predict which dams may deform the most during an earthquake so that emergency inspections can be prioritized accordingly.”

Several years of research are coming together with these grants, allowing Dr. Armstrong to communicate the work he’s been doing to wider audiences.

“I really am appreciative that the university values research and scholarly work,” he said. “The SWAG award was a wonderful surprise that will allow me to attend a conference where I can spend time with practicing engineers in dam engineering, folks who spend time thinking about earthquakes and how they affect the behavior of dams.”

“The SWAG award was a wonderful surprise that will allow me to attend a conference where I can spend time with practicing engineers in dam engineering, folks who spend time thinking about earthquakes and how they affect the behavior of dams.”

— Dr. Rich Armstrong



SACRAMENTO STATE
Department of Civil Engineering

California State University, Sacramento
Department of Civil Engineering
6000 J Street, MS 6029
Sacramento, CA 95819

916.278.6982
ce@ecs.csus.edu

www.ecs.csus.edu/ce

Like us, and follow us to stay up to date on
current CE News and Events!



SUMMER 2018 | ISSUE 26



CE CONNECTION