Your Link to the Department of Civil Engineering

CE CONNECTION

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SACRAMENTO STATE
Department of Civil Engineering

CHAIR'S MESSAGE

Dear alumni, colleagues and friends,

Another summer has come and gone! I hope everyone had some time to get away from their normal routine and embark on a summer adventure.

At Sacramento State and other universities, summer is a time to prepare for the academic year and welcome our new freshmen and transfer students. This year, we met 84 transfer students and 113 freshmen at the new student orientation. While the freshmen numbers are slightly lower compared to last year, the transfer student enrollment is up by 40 percent. For those of you looking to hire, our annual Fall Career Fair and Evening with Industry, October 25th and November 6th, respectively, are great opportunities to meet our students.

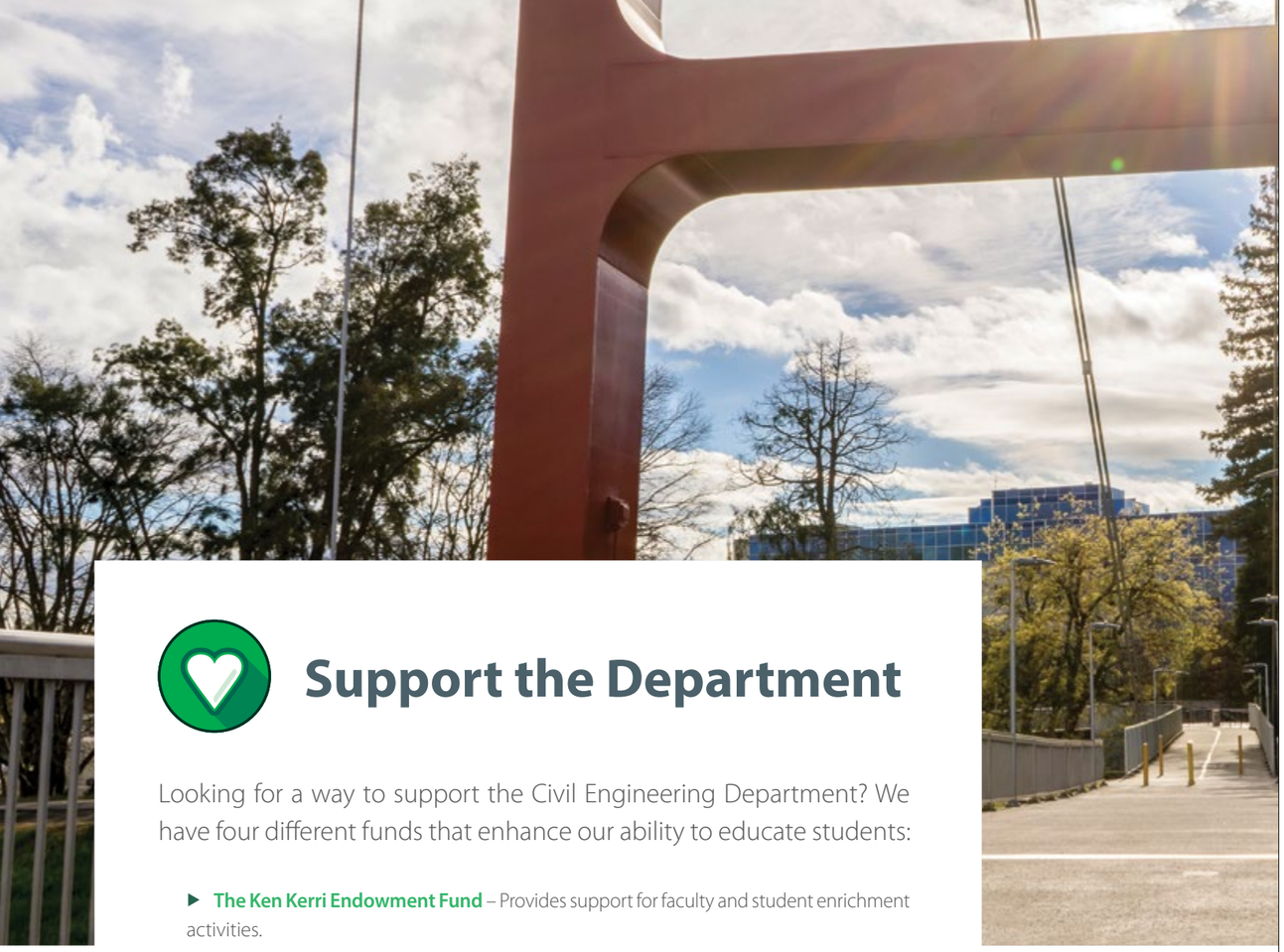
Along with welcoming new students, we are also very happy to welcome Dr. Zoi Dokou, who will be joining our faculty this fall with expertise in water resources engineering. Dr. Dokou comes to us from a research position at the University of Connecticut. Welcome Zoi!

Finally, I want to use this as an opportunity to advertise our upcoming golf tournament on Friday, September 13 at 8:00 am at Mather Golf Course. To register and for more information, visit **www.csus.edu/ecs/ce**.

I hope you enjoy the newsletter and that I get to see you at some point this academic year.

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** – Provides support for faculty and student enrichment activities.
- **The CE Freshman Scholarship Fund** – Scholarships to outstanding freshmen.
- **The Graduate Environmental/Water Resources Scholarship Fund** – Scholarships 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, **SUPPORT THE DEPARTMENT HERE**.

- 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

- For additional questions on how to give, contact:

Nebrisa Fish '05
Director of Development
(916) 278-2453
nebrisa.fish@csus.edu

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Upcoming Events

Gain access to all of these events through the Department of Civil Engineering Sponsorship Program! For information on 2019 sponsorships, click the link below:

CLICK HERE TO BECOME A 2019 SPONSOR

September 13, 2019:
Civil Engineering Golf Tournament, Mather Golf Course

November 6, 2019:
An Evening With Industry, Sacramento State

December 5-6, 2019:
Senior Project Presentations, Sacramento State

www.csus.edu/ecs/ce

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

Event

RECAP

11th Annual KEN KERRI ENDOWMENT FUND Luncheon

The 11th Annual Ken Kerri Luncheon, held on Wednesday, April 17th, exceeded expectations as more than 160 attendees came to honor the memory of Dr. Kenneth Kerri and his lifelong contributions to Civil Engineering at Sacramento State.

The luncheon opened with Bill Busath, Director of Utilities for the City of Sacramento, who introduced this year's VIP guests as well as the Luncheon's keynote speaker, Dr. George Tchobanoglous, Professor Emeritus of the University of California, Davis. Opening remarks were made by Dr. Ramzi Mahmood, Director of the Office of Water Programs, and Dr. Benjamin Fell, Chair of the Civil Engineering Department. Both discussed the progress of the Ken Kerri Endowment Fund, giving thanks to the Kerri family for their donated time and support of the Fund. As of the date of the luncheon, donations from supports across the region have reached nearly $275,000.

The continuing goal of the Ken Kerri Endowment Fund is to honor the hard work and commitment of one of the most dedicated civil engineering professors to have been part of Sac State's rich history. The fund continually allows the Department to hire dedicated and committed professors (such as Dr. Zoi Dokou; see page 26), attract students to enroll at Sac State, and to provide an outstanding level of education through specialized classes with focuses on significant current-world issues. It is these advancements that contribute to Sac State's status as an "Anchor University," by cultivating student skills and experiences that will, in turn, give back to the community at large.

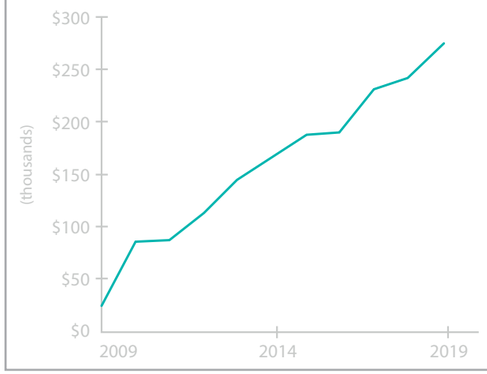
Proceeds for the past year helped support new research and lab experiments overseen by Dr. Cristina Poindexter. Drs. Richard Armstrong and Amir Motlagh were able to procure equipment that both assisted with their ongoing research projects, and are being utilized in undergraduate and graduate geotechnical earthquake engineering courses. A new Groundwater Engineering course was developed and offered by Dr. Saad Merayyan in Spring of 2018 and 2019. Plans for a new concrete durability lab and a senior project augmented reality lab are also in the works. All of these advances are made possible by the Fund.

Marco Palilla, Associate Vice President of HDR Engineering, Inc. and board member of the Ken Kerri Endowment Fund, believes that one of the reasons behind the Fund's continued success is support from those that knew him best: his Sac State family. "The key factor has to be Ken's legacy as a teacher and the huge number of people who have benefited from his efforts. He created a strong network of people that want to continue his work." Steve Perez, Provost and Vice President of Academic Affairs, shared similar remarks, noting that one of the benefits of hosting the annual luncheon is the opportunity to connect the university with Sacramento Region's local engineering industry.

During the luncheon, Dr. George Tchobanoglous took to the stage and expounded on his topic, "Wastewater in the 21st Century: Challenges, Trends and Opportunities." Dr. Tchobanoglous's career in Civil Engineering has spanned more than fifty years, and has included studying wastewater treatment and filtration technologies. He was a professor at the University of California, Davis, and authored many of the textbooks that are used in Universities throughout the nation. He received his B.S. in Civil Engineering from the University of the Pacific, his Master's Degree from University of California, Berkeley, in Sanitary Engineering, and his PhD in Environmental Engineering from Stanford University.

It was during his time as a student at UC Berkeley that Dr. Tchobanoglous was first introduced to Dr. Ken Kerri himself. Both studied and pursued careers in water treatment and management and graduated together. Their relationship became such that, even after graduate school, the two remained close friends. The friendship was contagious: Dr. Kerri's wife, Judy, and Dr. Tchobanoglous wife, Rosemary, quickly became inseparable. The two women even took international trips together during the 1980s and 1990s. Dr. Tchobanoglous' presentation continued with insights into current water treatment practices, present and future concerns with existing systems, and expanding technology that may prove beneficial to sanitary engineering in the future.

Endowment Fund Progress



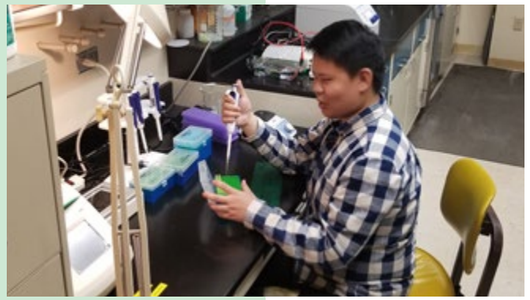
Special Thanks

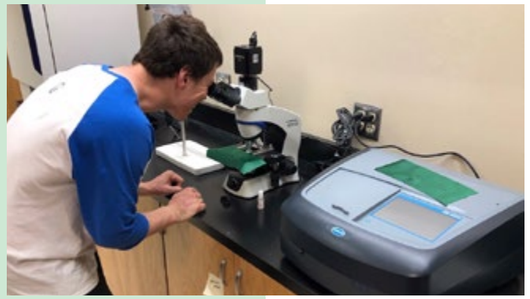
Special thanks to board members Bill Busath, Ramzi Mahmood, Benjamin Fell, Marco Palilla, and Ric Reinhardt for their efforts and contributions to make this Luncheon possible.

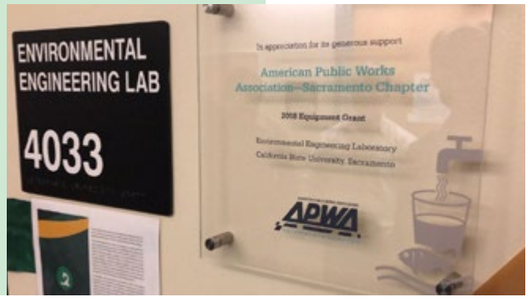
A special thank you goes out to all of our sponsors for their generous support of the Endowment Fund, and for carrying on Ken Kerri's legacy.

Grand Opening

of the APWA Environmental Engineering Lab







On Wednesday, April 24th, an official ribbon cutting ceremony opened the new Environmental Engineering Lab in Riverside Hall. Located in Room 4033, the lab will house state-of-the-art equipment accessible to students and faculty looking to expand their research.

The grant was awarded by the Education Endowment Fund (EEF) of the Sacramento Chapter of the American Public Works Association (APWA) to Sacramento State's College of Engineering and Computer Science in December of 2017. In its award letter, the APWA congratulated Sacramento State on receiving $21,500 in funding for the facility.

Features of the new lab consist of new and improved environmental engineering laboratory equipment. This includes, but isn't limited to, the following:

- **An Olympus CX43 upright microscope.**
- **An orbital shaker, incubator, and laboratory refrigerator/freezer combination.**
- **A Hach DR 6000™ UV VIS Spectrophotometer.**
- **A SPECTROstar Nano absorbance reader.**
- **A variety of analytical kits for NH3, NO2, NO3, PO4, Cu, Zn, Fe, and Cl2 analysis.**
- **A GoPro HERO 6 camera with a handheld image stabilizer, accessories and drone.**

Outside the room, on the wall just prior to entering the lab, sits a plaque of dedication in appreciation for the APWA'S gift to the University.

In attendance for the ceremony were several APWA Trustees, including Marco Palilla, Rick Liptak, and Jeff Pelz. Faculty leaders and staff from the University were also present for the grand opening, including Dr. Benjamin Fell, Dr. John Johnston, Dr. Amir Motlagh, Associate Dean Kevan Shafizadeh, and Ashley Mihok. Several undergraduate students were also invited to attend the ceremony, and interacted with the newly purchased equipment.

Once commissioned, the lab was put into immediate use by students and faculty alike. Dr. Motlagh and his students have been using these equipment for various research studies in environmental microbiology. Those preparing for the end of the semester gratefully sought out the lab's equipment to assist with final projects and last-minute assignments. Dr. Johnston has also begun to use the lab to continue his studies in storm water treatment and water quality management.

The Environmental Lab is expected to become a pivotal tool for students in the College of Engineering for years to come. To the left are some highlights of the opening day festivities.

8th Annual Civil Engineering Golf Tournament

Friday • September 13, 2019 • Mather Golf Course

Looking to hire?

Each firm will be asked to purchase a foursome, send between 1 to 4 players, and will be matched with students interested in the general area of the firm's business.

SACRAMENTO STATE
Department of Civil Engineering

Proceeds support the Sacramento State Department of Civil Engineering

For more information or to register please contact Ashley Mihok at ashley.mihok@csus.edu.

Want to sponsor the event or our department?
Visit our webpage at **www.csus.edu/ecs/ce** for more info.

LUNCH PROVIDED

REGISTER TODAY!

Deadline is Friday, September 6, 2019

Sac State Mid-Pac Participants Secure [*Wins and Lessons*] at Annual Conference

The Annual Mid-Pacific Conference was held from April 18th through April 20th, 2019, at the California State University, San Jose Campus. Hosted by the American Society of Civil Engineers, the competition included six different events, ranging from the action-packed Concrete Canoe challenge to the more academic Sustainable Solutions Competition.

Roughly fifteen schools competed in this year's event. While many of the participating universities were from Northern California, other students came from out of state, such as the delegation from the University of Nevada, Reno. There were even a few international participants who traveled all the way from China. This year's group of sixty undergraduates from Sac State were guided and mentored by undergraduate Mid-Pac veteran Harpreet Gill, who has competed twice previously.

"I helped our Conference Coordinator, Jenny Vang, and the Treasurer [work] out the finances of registration, travel, and lodging," says Gill, which took a huge burden off of students trying to prepare in the weeks leading up to the event. "I reached out to some of our support for funding on behalf of all of the Mid-Pac teams. I also made sure that our project managers were prepared for the conference and had all of the information they needed."

This year, Sac State participants returned triumphant, having secured third place in the "Mead Paper," portion of the competition. Each year, the paper and presentation combo offers contestants an attempt to solve a real-world problem and discuss its resolution. The topic for this year's paper was on ASCE Cannon 8, related to inclusion and diversity in the profession. The group banded together under the leadership of undergraduate Rachael Dal Porto, who was the main writer and presenter, in order to secure their place in the top three universities for this portion of the Mid-Pac event.

Sac State's other highest-placing score came from the Water Treatment Competition. During this contest, students design, construct, and test a water filter to clear out 'toxins'

in contaminated water. The project operator, Anton Sta Maria, helped to guide his classmates in developing their water-treatment solution. The process, Gill pointed out, is multi-layered. "Sac State's team started working on the project by testing many different treatment systems. They continued to improve upon the systems that worked. After extensive testing, the team finally decided on a design that worked the most efficiently and effectively. Following that, they came up with the best and fastest way to construct the system on competition day."

Overall, Gill was quite proud of his team's accomplishments. "On competition days, the team made a brilliant presentation on the treatment system and construction. They were able to answer all of the questions [from] the judges. The Operator, Anton Sta Maria, did a brilliant job of constructing the system."

There were other notable successes as well. Sac State's team won first place in both the Men's' Sprint and the Co-Ed Sprint races. While Sac State did not place in the top three winning universities, Gill believes that the lessons learned at this year's event were far more valuable than a trophy. "Everyone learned a lot working on projects and competing against other schools. Our project managers and other team leaders learned leadership and teamwork to deliver a project. Team members learned how to apply engineering to real projects. More importantly, everyone learned that a design on paper doesn't exactly become a reality due to various challenges such as cost, fabrication issues, time, etc."

New Housing Developments *Break Ground*

› *Photographer: Andrea Price, "Made at Sac State"*

The goal of the new housing development is to provide students a *safe* and *engaging* place to call home and stay local.

In the Fall of 2021, Sacramento State Junior, Senior, and Graduate students will have their pick of 284 new apartments to call home for the remainder of their time at University.

Ground was broken on June 4, 2019, for the new student housing developments. The six four-story buildings, along with a swimming pool and community complex—which will include a café and a fitness center— will make use of the land that once belonged to Dan McAuliffe Memorial Ballparks. The 11.5 acre parcel was purchased from the city by Sac State's affiliate and authorized buyer, University Enterprises, Inc., for $2.3 million dollars. The goal of the new housing development is to provide students a safe and engaging place to call home and stay local. This will allow them to devote more time to academics and studying, improving grades and helping them achieve greater academic success.

California state assemblyman Kevin McCarty recognized this very topic when he addressed the crowd at the ground-breaking ceremony. "The research shows that if you live near college," he stated, "you're more likely to go to class, do extracurricular activities, hang out in the library, the student union, be engaged on campus, and graduate within four years."

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>
> — Kevin McCarty

The development of the complexes, called Hornet Commons, is a source of pride even for those who are no longer students. Jeff Harris, who is a representative of District 3, is a Sac State alumnus. He contributed his vote to authorize the purchase of the land back in 2015. During the ceremony, Harris referred to the beginning of construction as, "real progress," for both the University and the community at large.

Then there is alumnus Leticia Valenzuela, who recently graduated with her Bachelor's and Master's Degrees in Civil Engineering from Sacramento State. Instead of casting a decisive vote, or donating thousands of dollars to the cause, Valenzuela is whipping out her calculator. As an employee of disaster-evaluation firm Miyamoto International, Valenzuela is in charge of running the calculations necessary to ensure that the new buildings are up to code and can withstand extreme loading, from earthquakes to severe storms.

It is a job that Valenzuela knew she wanted the moment she heard it was available. In a recent interview she gave to Jonathan Morales of the online blog, "Made at Sac State," Valenzuela shared that assisting with the Hornet Commons project is her way of paying it forward to the University that helped her complete both her undergraduate and graduate careers. This commitment to giving back is a call Valenzuela hears in every project she tackles. "It's for the community and civic-type things," Valenzuela says. "Ultimately, that's what we do. We're giving back."

In addition to the housing development, the project will include a parking lot to accommodate more than 500 extra vehicles, and several bicycle racks for those students who prefer alternate methods of transportation.

INDUSTRY FEATURE:

Lori Burne Discusses Her Connection with Sac State Alumni

Just under twenty-five miles from Sacramento State's Campus is Burne Engineering Services, Inc. Located in El Dorado Hills, the company works on a variety of different projects throughout the Sacramento Valley, including bridges, retaining walls, foundations for turbines, buildings (commercial, residential, and industrial), steel catwalks, and concrete inlet structures. Tools of the trade include concrete, structural steel, concrete masonry units, aluminum, timber, and one special ingredient: Sac State alumni.

According to Lori Burne, SE, Principal and Structural Engineer, out of the eleven engineers she has working in her organization, nine are graduates of Sac State's Civil Engineering program. "My experience working with CSUS engineering graduates is that they are highly motivated, good communicators, and humble enough to take direction and ask questions," she says. Burne continues to offer her praise even when students hit what she calls the, "learning curve," of being employed the first time outside of university. She acknowledges, "… things move very quickly and you are held accountable to your calculations and structural details. I try to get all of my engineers into the field so they can see their designs become a reality and learn from it."

Sac State graduates normally begin their time with Burne Engineering as interns, allowing Burne and other staff members to view the potential of each individual. "We are typically busier in the summer so that is a good time to increase our staff," Burne explains. "If they are a good fit and we have the workload to keep them, we offer them a full time position."

> My experience working with CSUS engineering graduates is that they are highly motivated, good communicators, and humble enough to take direction and ask questions."
>
> ***— Lori Burne***

The organization wasn't always able to offer such opportunity to Sacramento State graduates. Burne began her company in 2002 as a way to work on the side as she raised her family. In 2005, her side job had turned into a massive undertaking, and business grew so quickly that her husband left his own IT job to help with structural drafting and residential energy compliance calculations.

All was good until the housing market crashed in 2009; Burne struggled to keep the company afloat as projects melted away. Help came unexpectedly from a former co-worker who now worked at Dokken Engineering—their business needed assistance with bridge design. "I am so thankful to Dokken for giving me an opportunity to get my bridge design skills back up to speed while getting to meet and work with so many excellent engineers there," says Burne.

From 2009 to 2012 she worked part-time with Dokken, assisting them with bridge design. In turn, she was allowed to transfer several of their projects over to her ownbusiness, and Burne Engineering worked as n official sub-consultant to Dokken. One notable project Burne assisted with during this time was the design of the Johnny Cash Bridge that rises over the Folsom Bridge Crossing road within sight of Folsom State Prison. Burne proudly reflects, "I got to design the timber roof structure for the towers," as a way to assist Dokken with completing the trail bridge.

Today, business for Burne Engineering is remaining quite steady. Her company has grown over the years and now employs about twenty people. The projects have grown bigger and more prominent as her firm's name has gained notoriety. "Molly Iley, PE and Alban Gjongecaj, MS, PE (two exceptional CSUS engineering grads), went and did a field review on The Lure Resort bridge in Downieville to collect enough information to draw as-builts and perform a load-rating analysis," Burne recalls of one particular project. "They rented a BridgeWalker that comes with an Operator so you can be lowered in a basket beneath the bridge superstructure to observe and measure. This bridge is over the North Yuba River, which was flowing heavily in May during the field review." Other projects include industrial structures for the San Jose and Rio Linda/Elverta Water districts, and commercial additions to existing URM buildings in Folsom and Sacramento.

No matter where her company's future may take her, Lori Burne will forever be grateful for the Sac State Alumni that have helped her company grow over the course of the last few years. "CSUS graduates are at the heart of our business. My Operations Manager, Pranvera DeSafey, is also a Sacramento State graduate. She brings that same hard-working and humble work ethic to our business decisions and client interactions. We are proud sponsors of the Civil Engineering Department and are participants in the annual Evening With Industry. We look forward to continuing our close relationship with the CSUS Civil Engineering Department staff and students."

Women's Shadow Day:

Making a Difference in the Lives of Future and Current Students Alike

The Eighth Annual Women's Shadow Day, hosted by CSU Sacramento's Society of Women's Engineers, was held on campus on April 5th, 2019. Each year, the SWE organization invites middle and high school aged girls from around the area to come and experience a day at Sac State. Current students with both the Civil and Computer Engineering Programs, and faculty of each College, work with the girls to tour the school, conduct lab experiments, and get an inside look into the world of engineering.

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For Haweya Farah, a current student entering her senior year in the Civil Engineering program, the event is crucial to promoting STEM to girls and young women who may be undecided about whether to pursue an academic career outside the traditional liberal arts and sciences route. "Women's Shadow Day shows these young, aspiring women that being a woman in the STEM field is possible," Haweya explains. "They see, via our panels, evidence of successful women in engineering. It makes this career path much more realistic and eligible—moreover, they can see that STEM fields change lives." The girls especially seemed to enjoy the Concrete and Echo Chamber Labs, according to Haweya. "They asked many questions that displayed an interest and desire to learn—something we [the team] knew was there, and wanted to kick start."

In the most recent years of the program, schools have been contacted individually and encouraged to send their students to Women's Shadow Day. By doing so, they are helping to contribute to the equal representation that is too often lacking in college-level STEM classes. Those moments of outreach have proven to be more than successful. Last year's Women's Shadow Day included forty-five participants, while this year's event saw attendance skyrocket to more than seventy attendees. When including the professors, parents, and other volunteers that helped to make the event possible, the number of participants jumps even higher, to roughly 100.

Haweya credits this impressive growth to several different factors. One of the most enduring traits of this year's event was the sheer amount of girls from different cultural and ethnic backgrounds that participated. "I don't think it's said enough—diversity is our strength," Haweya expatiates. "Seeing so many different young women present and angling to learn throughout the day was the most incredible experience. Information that isn't readily available to these young women of all backgrounds was given to them, and that's significant when pushing for diversity." Haweya understands this quite personally. "As a woman of color in engineering, I can see myself staying in the engineering field, pushing for much needed change, whether it be in public policy, disaster aid, or civil groundwork."

The Sac State staff, including its many professors, also worked tirelessly to make sure the day was a fun yet informative experience, and was the combined efforts of the Sacramento community at large. Haweya acknowledges this support, stating, "we would not have been able to bring so many young women to WSD if the desire to change was not present within our community." While there is still a lot of work to be done to encourage girls to explore careers in engineering, events like the Women's Shadow Day help to plant the seeds of curiosity that, if cultivated, will lead to some of the greatest minds of the coming generation.

To New Heights:

An Interview with 2019 Tim Fleming Memorial Scholarship Winner ***Andrii Noga***

Skyscrapers.

That's what Andrii Noga remembers quite vividly about immigrating to the United States. Born in a small village in the Ukraine, cities were not a common sight. "We were farmers and ranchers there," Andrii recalls. In September 2005, at eight years old, Andrii's family made the life-altering choice to come to the United States. Their first stop on their eventual journey to California was New York City, and it was there that Andrii first encountered the tall, steel buildings that lined the heavens of the city that never sleeps. "I really was in awe at the skyscrapers."

That awe would remain with Andrii throughout his childhood. He began elementary school, placing in the third grade, and devoted himself to his studies. It wasn't always easy, but worth the effort. "I worked hard to learn the language and maintain good grades," Andrii states proudly. "While in high school, I researched careers and colleges quite extensively. I settled on Civil Engineering because I remember when I was in New York [when] our family was immigrating here…the eight-year-old me wanted to build something like that."

Andrii went on to graduate from Foothill High School in 2015, placing in the top 10 of his graduating class. He attended both Sierra College in Rocklin, and American River College in Sacramento. "When I was in community college," Andrii recollects, "my routine was horrible. I'd go to my classes, come home, and attempt to do my homework by myself. This only resulted in me not doing the homework and getting behind in my classes."

After 2 ½ years at the community college level, Andrii decided it was time to transfer to CSU Sacramento. "I'm very glad that I finally made it to Sac State," Andrii says, and for him, this isn't a casual avowal. "Because I live 30 minutes away, I'm forced to stay on campus until I finish my work for the day. This has helped me have a solid routine and my grades have improved drastically. Also, the environment at Sac State is very inviting. There are a lot of trees and many places to study."

Andrii admits that, while there was never a "light bulb" moment where he decided to pursue Civil Engineering, there did come a realization for him in the form of social media. "I just looked at what I like[d] to watch on YouTube and realized that I watched a lot of construction documentaries. So I figured that, 'I'm interested…,' and so might as well go for it. The market looks good for construction and civil engineering for the next decade," he adds, and he's not wrong. According to the U.S. Bureau of Labor Statistics Occupational Outlook Handbook, Civil Engineering fields are expected to increase their market by up to 11% before 2026, which is an above-average increase nationally. (https://www.bls.gov/ooh/architecture-and-engineering/civil-engineers.htm)

Being a student has most certainly kept Andrii on his feet. In addition to regular classes and studying, Andrii makes time for several extracurricular activities, including the ASCE meetings, and he participated in the Transpo Challenge earlier in the year. Another major source of pride comes from the internship Andrii secured in 2018 with Mark Thomas, an engineering consulting firm located on the other side of the Guy West Bridge. He currently works in the Transportation Department.

It was through his internship that Andrii first heard about the Tim Flemming Scholarship Program. "One of the structural engineers, Marshal at Mark Thomas, encouraged all the interns to apply. Then the principal engineer, Matt, also encouraged us to apply. But it was my friend and coworker Eduard who convinced me to go for it." His application paid off. At an awards ceremony held on February 20th, Andrii was presented with The Tim Flemming Memorial Scholarship, valued at $2,000. Looking back, Andrii can better appreciate part of the reason his friends and co-workers pushed so hard for him to apply: The namesake of the scholarship, Tim Flemming, was a founder of the Mark Thomas location where he is currently interned.

Andrii's plans for his immediate future include completing his senior year at Sac State, where he is currently on track to graduate in May 2020. With the end of his undergraduate career on the horizon, Andrii is thinking realistically about the new challenges facing him. "There are thousands of other students graduating with their engineering degrees," he wonders. "How will I stand out?" To answer that, Andrii credits the clubs and internships his peers and professors encourage him to participate in. True to the memory of a boy once awed by skyscrapers, Andrii knows to succeed sometimes means stepping away from familiar territory. "I think a lot of engineering students, myself included, are more introverted and scared to meet new people. We need to try to get out of our comfort zone and talk to some people; you never know what opportunities may come your way by just having a genuine and interesting conversation with someone new."

Renaissance Society

Honors First CE Student with 2019 Scholarship

On May 6th, 2019, Dante Khachadourian was awarded one of seven scholarships, valued at $3,684, by members of the Renaissance Society. The Society, whose focus is on the promotion of continued learning and enrichment for older adults, has granted scholarships to CSU Sacramento students since the program began in 1993. Dante, however, has the pleasure of being the very first Civil Engineering student to win the prestigious award.

Born into a large family in Valley Springs, CA, Dante was raised to appreciate independence and dedication to studies. "I have five younger brothers and we were all homeschooled," he says. "Trying to teach six boys at six different stages of schooling can be very taxing, so my parents taught us how to learn new material with minimal input from a teacher. By showing us how to teach ourselves, they gave us the tools to learn just about anything." Dante credits this early development of academic autonomy with helping him succeed in maintaining high grades and a high GPA throughout high school, community college and university.

Dante's early years were surrounded by family members and mentors who were all involved in the Engineering industry. "…I was exposed to the field of civil engineering at an early age, and my resolve to pursue this field of study grew on me until I had made the decision without even thinking about it," Dante says. When it came time to choose a university, the choice to stay local was easy. His grandparents live in Roseville, and staying with them while enrolled at Sac State granted Dante the dual opportunity to pursue a quality education while bonding closely with his grandparents.

Dante's goal in applying for the scholarship was twofold: he wanted to be able lessen the financial burden of tuition on his family, and would prove his worth and merit in his own eyes as well as the eyes of his peers. To qualify, Dante submitted transcripts with his application, and wrote a paper about how his field of study—transportation—would benefit Renaissance members in the future. However, since winning the scholarship, Dante has begun to pursue an interest in structural engineering, as he recognizes his talents and natural aptitudes lean more in that general career path. His overall dream of establishing and maintaining his own local business remains the same, with an added hope of being able to give back to the community. "I recognize how deeply I am indebted to my boss and professors for their mentorship and guidance as I develop in my career," Dante says respectfully. "If I were to own and run a company, I could stand as a mentor to other young people just beginning their learning and working careers, and bless them with all of the wisdom and knowledge that I have received and learned from others."

In the meantime, Dante is moving full steam ahead on preparing for his final semester at Sac State. He is focused on achieving his three main goals: to maintain his GPA to earn Summa Cum Laude honors, to successfully execute and complete his senior project, and to have fun, "because it will probably be the last time I step foot onto a campus as a student." His goal does have a literal meaning, as he is a member of both the American Society of Civil Engineering, and the Ultimate Frisbee Sport Club. Dante enjoys the interaction both organizations provide, and with regards to Ultimate Frisbee, it offers both a chance for exercise and much-needed socialization. "The classroom environment doesn't always provide a whole lot of opportunities to create deep or a long-lasting friendship, but playing sports with teammates does."

Future Alumni:

An Interview with Undergraduate **Jameela Flordeliz**

As a Senior in the College of Engineering, Ms. Jameela Flordeliz is charging headfirst into her studies and the extracurricular activities offered to undergraduates at Sac State. Described as an "excellent student," we caught up with Flordeliz in between her summer classes to discuss her undergraduate experience thus far and her plans moving forward.

Tell me a bit about yourself: where are you from, where did you graduate high school, and why did you decide to attend Sac State?

I am from Sacramento. I graduated from high school in 2006, and tried community college for a bit…to figure out what I wanted to do. I couldn't do it [school] at the time, so I decided to quit and live life a little bit, travel, and try and develop a passion. I believe I ultimately found something in Civil Engineering that could potentially satisfy me throughout my future career. Coming to Sacramento State to study worked for me because I heard positive things about the Civil Engineering program from friends, and it was feasible for me financially.

Was there a defining moment for you when you decided to you really wanted to pursue engineering?

The defining moment for me was finally finishing community college and receiving my Associate's Degree. I tried for a while…after high school, but I wasn't truly interested in anything at that time. It was always something in my "Life-long Bucket List" that was left unchecked, so finishing that really motivated me to go further.

Can you tell me a bit about your undergraduate experience? What are some activities you have been part of during your time here (at Sac State)?

So far during my time here, I have been trying to be involved with as many extracurricular activities as possible. I joined both ASCE and Concrete Canoe my first semester at Sac State by being introduced to it in the Civil Engineering seminar. I also got invited to join Tau Beta Pi last year and have been attending meetings regularly.

Tell me what your hopes and aspirations are for the coming year in your studies. Are there any classes you're really looking forward to taking?

My main goal is maintaining and increasing my GPA. I think I am most excited to take Soils [CE 171A]. I have been slowly narrowing down what field in Civil Engineering I want to get into, and I have not been exposed to any geotechnical classes yet.

What have been some defining moments of your time here at Sac State? Have there been any particular professors/classes/etc. that have made a difference for you?

A defining moment for me would be getting through CE 170 alive. Environmental engineering was one of the most challenging and demanding classes I have ever been exposed to. I put more effort into studying for that class than any other course I took with it. I kind of liked it. I have met some professors along the way that have both inspired me and made my time here easier. I appreciate Professor Ouchida a lot. He supported Concrete Canoe while I was in it and he helped me with my Autocad skills when I was looking for a design internship. I also appreciate Professor Armstrong and Dr. Fogarty.

Tell me a bit about the future you envision with your degree. Where would you like to be employed?

I have a lot of dreams and ambitions for when I graduate. I just have to take it one step at time.

RECENT GRADUATE

— *Steffen Berr* —

Steffen Berr never misses an opportunity to ride his bike to work. While he could take the highways from his home in Walnut Creek to his job with GHD, an engineering consultant company based in Concord, CA, he prefers to cycle. Since moving to the area in June, Steffen takes advantage of the cooler weather whenever the opportunity permits.

"It's definitely a lot colder here," Steffen says when comparing the bay area with the Sacramento Valley. Just a short time ago, Steffen spent one week at GHD's location in Roseville, CA to learn more about roundabouts. The heat was unbearable, but the experience was worth the suffering. "One of the great things about my company is that if I say I want to learn more about something, they'll make it happen. For example, I told them I wanted to learn about roundabouts—so they sent me to Roseville to spend a week with their team and learn more about them."

GHD, according to Steffen, operates a variety of engineering projects, including those related to civil engineering, hydraulics, structure, the environment, and transportation. Currently, Steffen's group within the company is focusing on investigating trails and bike paths. "There's a study going on at the Iron Horse Trail," he explains. "The idea is to build these trails to encourage people to get out of their cars more and cycle."

Prior to Steffen's successful career jump and before he became a student at Sac State, Steffen attended classes at the Southwestern University of Texas on a full-ride scholarship to study biology. "I wasn't interested in the major," he says of his time at the college. "I was interested in science, but I wanted to do something more. Biology research can be very abstract; most of the time you are running experiments in a lab. You can't see any of what you are doing."

Restless and ailing both physically and mentally, Steffen began to search for another career path. "I changed majors from Biology to Chemistry, which was closer to what I wanted. Then I talked with a chemical engineer." This was Steffen's first major introduction to engineering. "Engineers solve real-world problems, and I've always been big on solving problems, especially for other people."

It didn't take long for Steffen to discover a newfound passion for Civil Engineering. Despite the fact that it meant letting go of the scholarship and reinvesting time into Community College to complete prerequisites, Steffen made the transfer. Classes at Sierra College in Rocklin proved to be challenging, yet helped set a good foundation for the upper division courses required at Sac State.

Once at Sac State, Steffen knew he had made the right choice, especially upon learning about the sheer number of clubs, groups, organizations, and events available to engineering students on campus. "Sac State has ASCE, which has great resources for students. On top of that, there is the Earthquake Engineering Research Institute, SEAOOC, the Society of Hispanic Engineers, the Society of Women Engineers…that was really enriching. Often I had a surplus of time and I learned just as much at those competition clubs as I did in the engineering."

Steffen also took advantage of the opportunity to become involved in several internships, preferring to get a feel for different work environments rather than staying with one through the remainder of his undergraduate studies. He spent his junior year with both the Sacramento Area Sewer District, and the transportation industry Quincy Engineering. Summer was spent with Granite Construction.

In the fall, Steffen scored a highly coveted spot on a research team with Dr. Ghazan Kahn, studying devices that would keep CalTrans workers safe as they worked along high-traffic areas. "The idea is an alarm would sound if a car intrudes into a work zone; it gives workers a few extra seconds to get out of the way. My favorite part was when we got to talk to some of the CalTrans workers. They were making some great points; they had some real-world experience and told us what would and wouldn't work."

> "Engineers solve real-world problems, and I've always been big on solving problems, especially for other people."
>
> ***— Steffen Berr***

The CalTrans project wrapped up mid-spring 2019, just before Steffen graduated in May. His hope is to continue to work in the private industry, where he enjoys the culture and the shift of thought in the engineering field, where innovation and experimentation are becoming more commonplace. With regards to transportation, Steffen says that engineers of the newer generation recognize that bigger (and wider) isn't always better.

"It's called the 'Complete Street Concept,' where we consider the roads for all drivers," Steffen explains. "For example, roads are being narrowed through practices such as a 'Road Diet' to help to include bikes and make them more accessible for disabled people, and it helps reduce traffic congestion." The Netherlands have set the pace for what these new roads could look like in the future. "Fifty percent of tips in cities like Utrecht are made by bicycle, and they have banned traffic in certain areas of their cities so that cars cannot go through. It makes driving inconvenient, and empowers bicyclists and pedestrians because the risk of harm coming to them is greatly reduced."

This, for a cyclist such as Steffen, is a project right up his alley.

ALUMNI Spotlight

Coming Full Circle:
Life Beyond Sac State

In the winter of 2012, Ashley Moran took the Sac State walk of honor and received her B.S. in Civil Engineering. Since then, her career has taken her down many different roads, some of which were completely unexpected.

While an undergraduate at Sac State, Ashley became an engineering and architectural student assistant with the California Department of Water Resources and held the position from June 2010 until her graduation in December two years later. During this time, she participated in different campus organizations, including the highly prestigious honors society, Tau Beta Pi. She was also part of the ASCE leadership team, and the Mid-Pack competition teams, where she helped Sac State secure first place at the Water Treatment Competition at Mid-Pac Berkeley in 2012.

One particular curriculum-related highlight has stuck with Ashley since completing undergraduate coursework. "That was in my structural engineering lab, when we were tasked with designing a truss and estimating its failure conditions (load, mode, etc.)," Ashley explains. It was through these experiences that she nurtured her critical thinking skills and her ability to work under immense pressure. "I really felt like the hands-on aspect of the competition teams and curriculum was very beneficial and helped prepare me for the decision-making situations I have encountered in my career," she says. "I have found myself needing to make decisions quickly in the field."

After graduation, Ashley worked as a designer in the Division of Engineering (DOE), with the Department of Water Resources. She was hired to work in the Dams and Canals section, and during her 5 ½ years with the group she was able to see several of her projects all the way to completion. "Oftentimes design engineers are in the office providing support and only occasionally check in on the project once it's in construction," Ashley clarifies. "While I was with the Division of Engineering (as a designer), I was able to do design and see many of my projects through the day-to-day construction operations. Having a design engineer onsite can help facilitate…changes quickly and efficiently."

Her assigned projects were spread out all across California, including a two-year oversight at the Oroville Dam Spillway Project. The Oroville Spillway was one of Ashley's more extensive projects. "I was assigned to the spillway as a result of the incident. We went out during the response phase of the project. My group was one of the first engineering night shifts.

"The project was organized in two phases: response and recovery. It was an accelerated project that required staff to be onsite evaluating the conditions, and in the office designing solutions. During the Oroville project I remained onsite during the response phase and remained for a majority of the recovery phase. In 2017 I was a member of the onsite engineering inspection staff and was heavily involved in the concrete work. In the rainy months of 2017 I was a member of a few task forces related to the concrete work. I was able to participate in some of the trial batching, testing, and evaluation of the proposed mix designs."

In total, Ashley worked on the Oroville project more than two years. She returned to Sacramento in late March 2019 when she switched over to the Division of Safety of Dams, with the Department of Water Resources. Her current responsibilities include providing oversight of regulated dams, dam alterations, new dam construction, and dam enlargement projects where necessary.

When asked how she continually responds to the changing environment of the engineering world, Ashley is confident in her answer. "I think Sac State Civil Engineering students are very lucky because the Department does a great job staying connected with the professional industry and its alumni. I feel like hiring managers I have spoken with like Sac State alumni because of the practical and hands-on nature of the curriculum."

As if any further proof was needed of Ashley's faith in Sac State's program, she recently has taken the first steps towards her Master's degree and is now a graduate student. "I love the Sac State campus," Ashley beams, "and one of my favorite things is the sense of community that exists on campus. Once a hornet, always a hornet."

"Once a hornet, always a hornet."

Sneak Peak:

Sac State to Welcome New Professor

"I am very much looking forward to meeting and connecting with my students, learning about their aspirations and goals and guiding them in their educational journey at Sac State."

— Dr. Zoi Dokou

In the fall, Dr. Zoi Dokou will become newest member of the Sac State's Engineering Faculty. Originally from Greece, Dr. Dokou received her undergraduate diploma from the Technical University of Crete, Greece in Environmental Engineering, and her Ph.D. from the Civil and Environmental Engineering Department, University of Vermont. She has spent the last three years as a researcher and project manager of an NSF funded PIRE project (Partnerships in International Research and Education) in Ethiopia, which is led by the University of Connecticut. Dr. Dokou explains the project in her own words: "My role in this project is the development of groundwater models in the Blue Nile Basin and coupling them watershed and crop yield models to provide predictions of water availability and expected crop yields. The results can provide governments, farmers and development agencies valuable advance information to guide water-related decisions. This in turn will help local communities establish food security and growth, a prospect that makes this research work very rewarding."

Dr. Dokou is excited to begin her new adventure here in California. "I am very much looking forward to meeting and connecting with my students, learning about their aspirations and goals and guiding them in their educational journey at Sac State."To get here, she traveled across the country, visiting and exploring many of our nation's breathtaking state and national parks, including the Grand Canyon. Things she's looking forward to about California? A visit to Yosemite National Park, the warm weather, and a trip through wine country.

Stay tuned for our fall newsletter where we will check back in with Dr. Dokou and her first semester with us at Sac State.

N&N News & Notes

Scholarship Season

In addition to the scholarships awarded to Dante Khachadourian and Andrii Noga (see table of contents for their individual stories), the College of Engineering was pleased to award numerous scholarships to several students worthy of merit. Congratulations to the following individuals for their exemplary academic achievements.

Teresa Magana
Davis Higgins Memorial Scholarship

Mark Westbrook
Travis W. Smith Memorial Scholarship

Diana Rios
2019 CEPIAC Freshman Scholarship

Stephanie McCrumb
Javed & Anna Siddiqui Scholarship

Garret Hope
2019 CEPIAC Freshman Scholarship

Brianna Singh
Javed & Anna Siddiqui Scholarship

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