

Your Link to the Department of Civil Engineering

# CE CONNECTION

SUMMER 2017 | ISSUE 23

*Dr. Ghazan Khan (far left) attends the CSU Systemwide Student Research Competition alongside other Sac State faculty and students — Pg. 18*



## INSIDE

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- ▶ CE 190 Final Project Presentations  
Adapt to Maximize Experience for All
- ▶ Alumni Spotlight: Derek Minnema



**SACRAMENTO STATE**  
Department of Civil Engineering

# CHAIR'S MESSAGE



**Dear alumni, colleagues and friends,**

I'm excited to share our summer newsletter with you to provide a brief recap of some of our spring activities and upcoming events.

The department hosted the annual Ken Kerri Endowment Fund Luncheon on April 12, with 132 attendees – one of our largest crowds since the event

began. Next year, we're looking to fill the alumni center with over 200 guests for the 10th anniversary of the luncheon.

The next event on the schedule is our golf tournament, taking place September 8, with an 8:00 a.m. shotgun start at Mather Golf Course.

**Click here to register:**

[www.ecs.csus.edu/ce/pdfs/ce-golf-registrationpack-2017.pdf](http://www.ecs.csus.edu/ce/pdfs/ce-golf-registrationpack-2017.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 Dr. Amir Motlagh, a new professor starting in Fall 2017 teaching in the environmental engineering area. Amir joins us from a post-doc position at the University of Central Florida. He received his Ph. D. from the University of Utah. We're excited for the expertise that Amir will bring to our department, as well as his passion for teaching.

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

**Ben Fell – Chair, Department of Civil Engineering**





## Support the Department

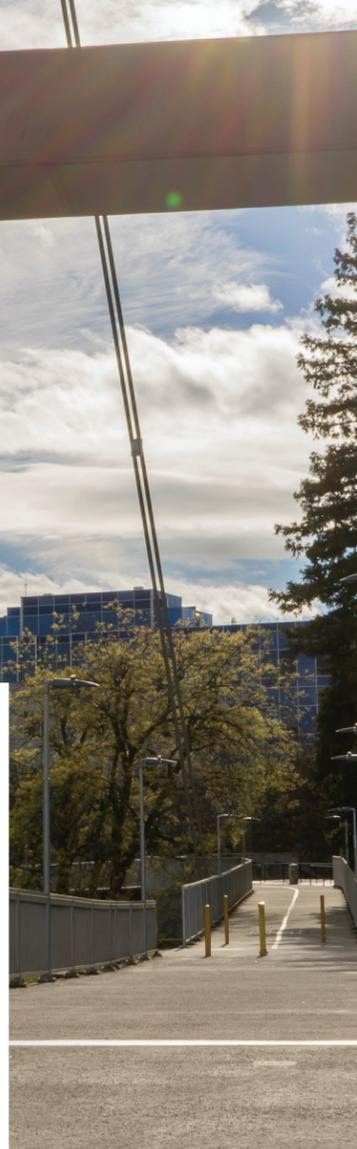
Looking for a way to support the Civil Engineering Department? We have four different funds that enhance our ability to educate students:

- ▶ **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](http://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



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## Upcoming Events

Gain access to all of these events through the Department of Civil Engineering Sponsorship Program! Information for 2017 sponsorship is now available at:

<http://www.ecs.csus.edu/wcm/ce/pdfs/sponsorship2017.pdf>

### September 8, 2017:

6<sup>th</sup> Annual Civil Engineering Golf Tournament

### November 3, 2017:

13<sup>th</sup> Annual An Evening With Industry

### April 10, 2018:

10<sup>th</sup> Annual Ken Kerri Endowment Fund Luncheon



## Ken Kerri Luncheon Honors His Legacy with Keynote on Water

THIS YEAR'S  
KEYNOTE SPEAKER



**David Gutierrez**

GEI Consultants, Inc.

With more than 130 people in attendance, the ninth annual Ken Kerri Endowment Fund Luncheon celebrated Dr. Kerri's contributions to the Sacramento State Civil Engineering community and offered a chance for alumni, faculty and industry friends to socialize.

Before introducing the keynote speaker, Dr. Ramzi Mahmood, Director of the Office of Water Programs, spoke about the endowment fund named after Dr. Kerri. "Years ago when Ken was here, we wanted to recognize his contribution to the university and the nation," said Dr. Mahmood. "He cared deeply about the department. Now it's about his legacy. All of us here, in one way or another, were affected by Ken."

Department Chair Dr. Ben Fell and Ken Kerri Endowment Fund Committee Chair Bill Busath ('90, MS '12) also gave remarks before the keynote address by David Gutierrez ('83, MS '88) of GEI Consultants. Mr. Gutierrez previously served as the executive program manager of the Sustainable Groundwater Management Act with the California Department of Water Resources (DWR). He discussed the history of groundwater management in the state.

"The biggest challenge for California is that all the precipitation is in the north, but most people live in Southern California or the Bay Area," said Mr. Gutierrez. "The second challenge is the climate. There's no such thing as a normal water year in California."

He spoke about early dams and aqueducts built in the state, and the establishment of DWR's Division of Safety of Dams.

"Groundwater in California is a major storage facility that gets us through droughts," said Mr. Gutierrez. "But one of the adverse impacts is subsidence; we've lost about 30 feet of depth in the last 30 years."

Mr. Gutierrez also touched on the incident that took place in February when the Oroville Dam spillway sustained major damage. He explained the origin of the spillway and how the damage compounded once it began showing problems on Feb. 6.

"As the flow began over the emergency spillway, there was lots of erosion," he said. "It's tough to calibrate the erosion of rock with water on top of it. Another big problem was the debris sent downstream."

The luncheon was concluded with a visit from Sacramento State President Robert Nelsen, who thanked Dr. Kerri's family members in attendance. "You should be so proud of what he accomplished and his legacy here," he told them.

President Nelsen explained that he judges each day on how he can answer two questions: Did I learn anything today so I can solve a problem? Did I help anyone today?

Congratulating the engineering students in the room who had received scholarships, President Nelsen said, "These scholarships make a difference. They can help students get the opportunity to solve problems like the Oroville Dam. It will be Sac State students who will solve those types of problems. We're going places because of people like the Kerri family."

## DEPARTMENT OF CIVIL ENGINEERING KENKERRI Endowment Fund

### Endowment Fund Purpose

- ▶ 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
- ▶ And much more!

**Save the date for our next Ken Kerri Endowment Fund Luncheon on April 10<sup>th</sup>, 2018!**



## 6<sup>th</sup> Annual CIVIL ENGINEERING Golf TOURNAMENT

Friday · September 8, 2017 · Mather Golf Course

Proceeds support the Sacramento State  
Department of Civil Engineering

For more information or to register by phone please contact  
Ashley Mihok at (916) 278-6982

The registration deadline is  
**Friday, September 1.**

Sponsorships available at:  
[www.ecs.csus.edu/ce/sponsorship.pdf](http://www.ecs.csus.edu/ce/sponsorship.pdf)



**REGISTER  
TODAY!**



## Sacramento State Transportation Team Comes Out On Top at Mid Pac

A team of seven students who were mostly new to the American Society of Civil Engineers Mid-Pacific Conference (“Mid Pac”) took the top ranking in the Transportation Challenge during the competition at Chico State in April.

The topic of the challenge was given to students in fall 2016, but the Transportation Challenge team didn’t fully form until January. This year’s challenge honed in on the actual Chico location at E. 20th Street and Business Lane near Chico Mall, an intersection where there is no left-turn movement.

“We had to design an intersection that would allow left-turn movement from both sides and be able to keep up with capacity for 20 years of traffic at 2 percent annual growth,” says Ashley Arreola, one of the Transportation Challenge team members. The team examined existing conditions and analyzed traffic flow, using a program to simulate what it would be like in 20 years.

Their initial solution proved impractical, so the team came up with another design: combine the Business Lane and Chico Mall intersections. Since Business Lane was a private road, the team opted to widen it to enable more traffic.

At the Mid Pac competition, all the Transportation Challenge teams privately presented their project posters to a professional panel, then answered questions. In the end, some of the other schools came up with the same idea as Sacramento State’s team, and others came up with different designs.

“What set us apart was the level of detail we put in, especially in geometric drawings,” says Ashley. “I work for a transportation company and I saw what their plans look like, so I replicated how it should look as a finished product. We also went a little

beyond; one of our team members did outside research and tried to find a similar intersection. And we did 3D modeling using Google SketchUp.”

Dr. Ghazan Khan served as the team’s faculty advisor, offering guidance throughout the team’s learning process. “Our students secured the first position at Mid Pac by a huge margin,” says Dr. Khan. “[They competed with] UC Davis, UC Berkeley, Tongji University – they are pretty strong and committed, so having secured first place was a great achievement for our students. It goes to show their commitment to activities outside the classroom even though they require a considerable amount of time.”

Mid Pac is not only a valuable team-building project, but it gave students the chance to observe how students from other schools tackled the same problem. Team member Sam Lee noticed different schools cheering for one another. “Participating in Mid Pac taught me teamwork skills to further help me in my studies,” said Sam.

Ashley, a recent graduate whose win was particularly sweet since it was his first and last Mid Pac, was impressed with the other schools’ approaches, particularly Tongji University. “Their poster blew judges away,” says Ashley. “I got a chance to talk to them about how they came about their design. That’s what Mid Pac is about: sharing ideas with other schools and getting to know them – and making connections.”

*The Mid Pac Transportation team included Michael Almazan, Ashley Arreola, Julian Banez, Sam Lee, Gabriela Lopez, Osmar Macias and Jose Pirir. Faculty advisor: Dr. Ghazan Khan.*



## SWE Shadow Day Continues to Grow

The gains made last year in recruiting young women to attend the Society of Women Engineers’ (SWE) Shadow Day at Sacramento State have paid off in the form of continued robust attendance.

Shadow Day was held on campus March 9, with more than 110 middle and high school girls from the region convening for a day of education about engineering majors offered at Sacramento State. The event is hosted by SWE, whose officers helped increase participation in 2016’s Shadow Day by visiting high schools to inform science teachers about the event.

“Since we reached out to high schools in person last year, this year teachers knew about us and some approached us right away,” says Margarita Kovalchuk, the 2016-17 SWE President. “We essentially did not have to do any advertising. We were at our cap and couldn’t take any more people.

“One school heard about us and came all the way from Yuba City,” she continues. “And one girl searching for outreach programs found us through Google. She was the only student from her school who attended and now that she did, she’s going to go back and wants her classmates to attend. It’s interesting to see we had both word-of-mouth communication and an online presence that allowed us to be found by an individual student.”

At the start of Shadow Day, girls in attendance received an introduction to engineering by the Dean’s Office, with Dr. Fell speaking specifically to the civil aspect. They then were assigned sessions based on their interests. The day wrapped up with a professional panel, including Rebecca Solomon, (’14), taking questions from the attendees.

“What stood out this year was how involved the [Sac State] students are,” says Margarita. “In the past, we’ve had a concrete lab demonstration but a key faculty member couldn’t be there, so the Concrete Canoe club stepped up and ran that program. It was really great to see civil engineering students taking the initiative in the demonstrations and the club exhibits.”

During the 2016-17 academic year, the Sacramento State chapter of SWE was led by Margarita, Vice President Mary Sanchez and Professional Coordinator Sonja Croce. “In addition to the three of us, there were lots of other officers, members, and friends who really stepped up and put in a lot of effort to make sure everything ran smoothly,” says Margarita.

The blessing of a full attendance list included the reality of planning activities and running logistics for such a large-scale event. But it’s all worth the effort, she says.

“We now have students coming in who are alumni of Shadow Day and are reaching out to get involved. It’s great to know there’s a pipeline of SWE leadership and students who are interested.”





## PRECAST CONCRETE INSTITUTE

### Student Chapter Enjoys Unique Experience

The recent retirement of a key figure in the precast concrete industry provided a chance for students to witness the culmination of a successful professional career, while also hearing valuable presentations by industry professionals.

The Precast/Prestressed Concrete Institute (PCI) student chapter at Sacramento State is one of only a handful of such chapters in the country. Established only a few years ago, the campus chapter has been steadily growing and regularly participates in PCI's Big Beam Competition. In May, Dr. Eric Matsumoto, PE (who serves as faculty advisor to the PCI student chapter), invited students, faculty and industry members to an educational symposium that doubled as a surprise retirement celebration for Doug Mooradian, AIA.

"I knew Doug was retiring as Executive Director of PCI West," says Dr. Matsumoto, referring to PCI's regional chapter. "He represents all precast concrete [companies] in California and Nevada. He's been a leader in the industry for over two decades and we wanted to honor him."

Dr. Matsumoto designed the event after symposia held by some research universities when a professor retires. Even though

Mr. Mooradian is not a professor, his influence in the specialized field of precast concrete – and his service to students – made it a fitting tribute.

Mr. Mooradian was invited to give a presentation to the PCI student chapter as one of several guest speakers at the symposium. "Every semester he comes to my class to give a presentation, and he's the main sponsor for the student chapter," says Dr. Matsumoto. "I gathered together key figures that reflected his impact on students and on the industry. We surprised him, then showed a video of a PCI competition where the students did a really good job. It showed how they worked as a team."

The event's speakers included Brent Koch, the Chief Engineer for Con-Fab California, a precast/prestressed concrete manufacturer, who gave a presentation about California's High Speed Rail project. Glen Underwood, Chief Structural Engineer for Clark Pacific, wowed students when he showed a video and discussed his firm's role in the construction of the new Apple headquarters in Santa Clara. Precast Concrete Specialist Jim Ma from Caltrans gave an introduction to bridges for the students in attendance.

"They told me afterward they had no idea it was going to be that fantastic. They were blown away."

— Dr. Eric Matsumoto



"A typical PCI club meeting has between 20 and 30 students," says Dr. Matsumoto. "This event had double that due to free food and my offer that if they wrote up what they learned, they'd get extra credit. I told all my students about it. They told me afterward they had no idea it was going to be that fantastic. They were blown away."

Dr. Matsumoto explains that the PCI student chapter focuses on precast/prestressed concrete, a subset of structural engineering, which is a subset of civil engineering – a niche that can make it challenging to recruit students who are already involved in other campus engineering organizations.

"Some people don't know what they want to do, they may go into this field or not, while others are really into it and know this is what they want to do," he says. "We're giving students exposure to relevant fields so they can make decisions. Even if they don't [choose this avenue], it becomes a tool in their toolbox."

Participation in the Big Beam Competition is the main reason for the student chapter's existence, but the chapter benefits students in other ways. "We design pretension beams, and that's

a dangerous operation," says Dr. Matsumoto. "When they see a beam fail, it's an explosive and dynamic experience they never forget. The experience they get in design, construction and precasting is incomparable."

Students in the chapter enjoy regular guest speakers, field trips to job sites and even a plant tour at Con-Fab where they saw sections of a bridge being built. "Besides the competition, we're trying to extend the education beyond just theoretical to hands-on experience that bridges them to industry," says Dr. Matsumoto.

That means atypical events like the symposium may be one of many for the PCI student chapter. Dr. Matsumoto contends that maximizing the educational experience for students is threefold: "The teaching side, research side and industry side," he says. "They all produce a synergetic relationship. It has to involve all three aspects, otherwise you don't properly equip students for practice. The industry wants people that are qualified for its needs."

## CE 190 FINAL PROJECT

Presentations Adapt to Maximize Experience for All



Every graduate of Sacramento State's Civil Engineering program no doubt remembers his or her final senior project presentation, which is the culmination of the CE 190 class as well as the undergraduate degree itself. Though nerve-wracking, many students consider it one of the most valuable experiences of their college career.

Because of their significance, CE 190 presentations are held in a public forum on campus where student groups present the problem and their solution in front of an audience and a panel of professional mentors. The mentors then ask questions of the students, who must defend their findings.

"CE 190 has always constantly evolved," says Dr. Matt Salveson, PE, a Senior Engineer at Dokken who also teaches the CE 190 course at Sacramento State. "It's not a typical class with a syllabus that's the same each semester. We find a real project somewhere in the greater Sacramento region and partner with the project sponsor – this last time it was the city of Sacramento. A real civil engineering project might take six years to complete with all the environmental processing, planning and design. We take some liberties to adapt those real parameters into something that can be processed and delivered by the students in a semester. We have to reinvent what we do each semester based on the project."

Many local engineering firms and government entities like Caltrans provide professional staff members (some of whom are alumni of Sac State's Civil Engineering program) who mentor the CE 190 students throughout the semester as they navigate the project. As the faculty chooses the project each semester, "we recruit professional mentors that have the appropriate experience to help students," says Dr. Salveson. "Each team has two to three mentors, so we have 15-20 each semester. Some are the same and some are new; all those dynamics make for a unique class experience."

In the spring 2017 semester, CE 190 students worked on "Franklin Boulevard Complete Streets," an actual city of Sacramento project aimed at transforming a blighted section of Franklin Boulevard into an environment that encourages pedestrians,



"They have no notes, no one to help them up there. That's the reality of what professional engineers need to do: step up to the plate, say 'here's why I did it,' and defend it."

— Dr. Matt Salveson

bicyclists and transit. For the final presentations, the College of Engineering and Computer Science made some changes to increase attendance and to make the event more beneficial to students and their mentors.

Rather than students of Civil, Mechanical and Electrical Engineering presenting their final projects in entirely separate events, they were scheduled in simultaneous evening sessions on campus "to get a better critical mass for people to attend and alumni to come back, as well as for professional partners in industry to come," since the previous afternoon sessions made that difficult, says Dr. Salveson. He gives much of the credit to Associate Dean Dr. Kevan Shafizadeh for spearheading this effort.

"The attendance was much better and really made it a more fulfilling experience for students, although maybe more stressful because of the larger audience of current and future colleagues," says Dr. Salveson. He said the new format allowed attendees to check out what other engineering departments are doing, boosting outreach and interaction.

Another big change was that the department invited engineering firms that have provided mentors for CE 190 to have booths at the event to promote networking. "This really highlights firms that are providing these indispensable resources to the course

in the form of mentors," he says. "They were there with flyers and representatives to answer questions about what it's like to work for them."

Each CE 190 student group presented for 10-15 minutes and then answered questions from the panel of mentors. "Students are on the spot and being asked to be accountable for all they've done over the last semester," says Dr. Salveson. "They have no notes, no one to help them up there. That's the reality of what professional engineers need to do: step up to the plate, say 'here's why I did it,' and defend it. While the questions are hard, it is still a classroom exercise. It's their last chance to be in an environment where it's safe to make and learn from mistakes."

Dean Dr. Lorenzo Smith and Dr. Shafizadeh were in the audience for the spring presentations, asking questions of the students. Although he acknowledges how stressful the presentations are, Dr. Salveson says many students tell him afterward they can't believe what they accomplished.

"It's fun to watch the students who really flourish in that type of environment," he says. "As an instructor, it gives me goosebumps when it happens. They're doing things they had no idea they could do three months earlier. It's different than anything they've ever done."

## Derek Minnema



**Y**ou could say that the newly named Executive Director of the Capital SouthEast Connector Joint Powers Authority (JPA) has been preparing for the role his entire life. Derek Minnema ('02) spent time as a child drafting floor plans in hopes of one day building his own home. But rather than architecture, Derek preferred the more technical aspect of building, and by the time he got to Sacramento State, he was ready to declare civil engineering as his major.

Although he's an accomplished engineer with a portfolio of achievements spanning multiple branches of the profession, he finds the most fulfillment in transportation. "The future of transportation is electric vehicles, autonomous vehicles, and on-demand mobility," says Derek. "Basically, the future of transportation is on our roadways. The Connector project is as much about today's traffic needs as it is an investment in Sacramento's future."

Sacramento's Capital SouthEast Connector Expressway is the region's largest approved transportation project, with a 34-mile long stretch that will serve as a beltway through the southern area of Sacramento County connecting Elk Grove, Rancho Cordova, Folsom and El Dorado Hills.

In 2014, after more than 11 years at Mark Thomas & Company, where he was an owner in the firm and managed individual projects along the Connector alignment, Derek was hired by Drake Haglan & Associates. There, he became fully dedicated to the Capital SouthEast Connector project as a Program/Project Manager for the entire corridor. The JPA Board of Directors appointed him Executive Director in May.

"My charge is to lead all aspects of delivery and get this project to construction," says Derek. "But engineering aside, the Executive

Director is responsible for good governance, communication, legislative advocacy, and building strong relationships with the JPA Board and member jurisdictions."

The Connector project is large enough that a Joint Powers Authority (JPA) was created in 2006 for the sole purpose of delivering the project, and its Board of Directors consists of elected officials from the five cities and counties. The U.S. Department of Transportation considers it a Project of National and Regional Significance.

Projects of this scope usually take years to complete and face a number of challenges. "Typically, there are four major keys to success," Derek says. "Political will, funding legitimacy, navigating ongoing regulatory hurdles and avoiding environmental pitfalls. We've generally done quite well in all four of those. But finding sufficient funds for construction is a continuous challenge that we work on every day."

The Capital SouthEast Connector project is partially funded by Sacramento County's Measure A, the sales-tax measure that passed in 2004 and took effect in 2009 to fund multiple transportation

**"It's a very exciting time right now. I view it as a rocket moving to the launching pad. To be at the helm of it is a privilege."**

— Derek Minnema

projects. In 2016, Measure B would have authorized an additional countywide half-cent sales tax to provide further funding for this and other projects, but it failed to reach the required two-thirds percent of the vote.

"That measure would have been like a shot in the arm for construction funding, but just because it didn't pass doesn't mean our project is in jeopardy," says Derek. "Measure B still had 65.7 percent of the vote, less than 1 percent away from the required 66.6 percent. For any normal ballot proposition, that's a solid victory, but a tax increase has a higher bar."

Numerous other opportunities are on the horizon, though. "At the state level, there's legislation that has me optimistic on the funding outlook, and the conversation at the federal level is very positive for infrastructure," says Derek. "Our project will compete quite well with these new funding opportunities because of how important and unique it is."

The Connector project has a long list of benefits, including that it's a true multi-modal facility – it will construct a dedicated bike trail along its entire length, making it the longest bike trail in the region, two miles longer than the American River bike trail. "Depending on the funding source, we strategically emphasize certain characteristics of the project to be competitive," says Derek. "There's always a story to tell with public works projects, you just have to know your audience."

An ability to navigate the political arena began in Derek's undergraduate years, when he was elected to represent the College of Engineering and Computer Science as a student director for Associated Students, Inc. After graduation, he was elected by Sacramento County voters to serve as a trustee of the American River Flood Control District from 2004-2012, an experience that certainly laid early groundwork for him to navigate his new position leading the Capital SouthEast Connector project. "Engaging our elected officials to champion the project and obtain funding is essentially in the job description," he says. "Every year includes at least one trip to Washington, D.C. and we're fortunate to have the State Capitol in our backyard. Big transformative

public works projects can't be funded with local dollars alone. Nor should they when they benefit so many different users."

Somehow, with a full work plate, a wife and 3-year-old son, and a second child due in September, Derek finds time to mentor Sacramento State students and young engineers at Drake Haglan and Associates. Returning to assist the Civil Engineering Department, he's been a panelist and a keynote speaker at An Evening With Industry, and serves on a professional panel judging students' CE 190 final projects.

"I knew I was ready to graduate during senior project because I really enjoyed that course," recalls Derek. "It was everything I loved about engineering wrapped up in that last class. When I was going through school, coworkers and family friends who were engineers would give me advice and perspective on the industry. When given the opportunity to do that at Sac State, I said 'absolutely.'"

Looking forward to the fullness of his life in the coming years, Derek's focus is on "trying to be a really good father and husband. And in the next several years, I want to dedicate myself to this project; I want to see many miles of construction. It's a very exciting time right now. I view it as a rocket moving to the launching pad. To be at the helm of it is a privilege."



**Students**

**This Year's Scholarship Recipients**

**2016-17 Outstanding Student, Department of Civil Engineering**

Jen-Ann Lee

**2017 Civil Engineering Freshman Scholarship**

David Rivas



**Jennifer Langford**

**Javed and Amna Siddiqui Scholarship**

John Gabriel and Sam Lee

**Water Resources/Environmental Engineering Graduate Scholarship**

Kirk Van Rooyan and Ashley Moran

**2017 ASCE Golze Scholarship**

Cesiah Diaz, Taylor Myers, Ram Sah, Jasraj Singh and Khalid Kanaan



*In this feature, we spotlight a recent civil engineering graduate. Jennifer Langford graduated cum laude in May and quickly transitioned to her new job at Dokken Engineering in Folsom.*

**What drew you to civil engineering?**

Originally, I was a hydrology major and was planning on UC Davis, but when I looked at career paths I felt civil engineering had greater opportunities and a broader range. So I decided at the last minute to change to civil engineering and when I looked at cost differences, I chose Sac State. I am a math and science person.

**Where do you work now, and what's your area of focus?**

I'm working for Dokken Engineering. Matt Salvesson recruited me, and I was lucky enough to get hired. I've worked on two projects already; one is in Apple Valley, and the other is a Caltrans project in Eureka. My senior project had a transportation and traffic engineering component; that tied me into where I'm working now, which is roadway design.

**You are a mom of a young daughter – how did that affect your completing a degree?**

I was able to graduate cum laude in my class, and I think being a single parent really helps you focus. I have my priorities; you have to have them straight. There's not a lot of room to work in extracurricular activities. I did do Tau Beta Pi, but you have to stay so focused because family comes first, then school, and then work, so there's hardly any time left over.

I worked for a while in an internship and had two or three jobs at a time. I pieced it together, but I also went into debt. Another reason I chose civil engineering is that I didn't have to get a master's [degree] and I'm still able to create a career path that has greater job security and career opportunities.



**2017 ASCE Golze Scholarship**

**Khalid Kanaan**

"In my three years at Sacramento State, I took pride in being involved with the student organizations offered by the department," says Khalid. "I started going to a few meetings and helping my friends with their ASCE club competition projects, and

then the spark ignited and I began to pursue higher positions in these organizations to help spread this feeling of excitement I had. My last semester at college, I was elected to be the ASCE student chapter president; that's when I felt I had been noticed by my peers for my efforts. When I was awarded the Golze Scholarship, that's when I felt I was noticed by industry, and the joy was overwhelming. This award validated a lot of late nights and hard work, and I'm honored to be a recipient."



**2017 ASCE Golze Scholarship & American Public Works Association Scholarship**

**Mohammad Yaser Basharat**

"These scholarships indicate that I am worthy of confidence and can be expected to perform well in competitive environments," says

Mohammad. "By reducing financial concerns, scholarships mean more time for studying and learning, which can lead me to better grades and retention of knowledge and increase my chances for continuing on to a higher degree and helping me achieve the career I want."



**Javed and Amna Siddiqui Scholarship**

**Sam Lee**

"Winning this scholarship has helped me afford to work less, so that I can spend more time on studying," says Sam. "I appreciate those who have chosen me to receive this scholarship and I am honored to have received it."



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

**Diana Villegas Sanchez**

"Winning this scholarship makes me proud to represent Latinas in the field of engineering," says Diana in appreciation of being chosen by the ASCE Ladies Auxiliary. "It is reassuring to know that I have the support of the

ASCE Ladies Auxiliary. I hope to continue gaining the support of other engineers as I progress in the civil engineering field. I thank you for believing in me."

— Continued on page 19

### Students (continued)



#### Sacramento State Faculty Senate Scholarship

##### Margarita Kovalchuk

"The scholarship allowed me to continue doing research as opposed to working part time, so it was a very big help," says Margarita. "I'm so grateful for Dr. Poindexter's continued mentorship and

nomination for this scholarship."

In the spring, CE Connection reported that Margarita was one of 10 engineering students chosen from across the globe by the American Society of Civil Engineers for its 10 New Faces of Civil Engineering. Since then, she was named the #1 "Top New Face" on the list. Congratulations, Margarita!

Margarita is currently conducting research on environmental fluid mechanics at Texas A&M University on an undergraduate summer research grant she received.

### Faculty

**Dr. Ghazan Khan** recently attended the California State University Systemwide Student Research Competition, held this year at California Polytechnic State University, San Luis Obispo. The 31st annual competition was an opportunity for each CSU campus to showcase outstanding student research by undergraduates and graduates in all fields.

Dr. Khan attended the event as a member of a multidisciplinary organizing committee for next year's competition, which will be hosted by Sacramento State.

"The Office of Research Affairs and a few others on our campus got together and solicited interest from faculty to constitute a committee that would guide and organize the student research competition that we will be hosting next year," said Dr. Khan. "I was previously involved in some activities related to undergraduate research, so I volunteered to serve."

The Office of Research Affairs sponsored the committee's travel to Cal Poly to attend the competition. "We wanted to observe

how it's organized, see what works and doesn't, try to bring back experiences so we can organize our event next year successfully."

Committee members also sat in on the presentations of the nine Sacramento State students who presented at the competition, three of whom won awards in their respective categories.

"This competition brings the best of the best from all the campuses to a single place where you can see what kind of diverse research students are working on," says Dr. Khan. "It helps bring together a sense of unity amongst all the systemwide campuses. Research, especially undergraduate, has been documented as 'high-impact practice': it helps students develop critical thinking and problem-solving skills."

The committee is already working on arrangements for the 2018 Systemwide Student Research Competition, including reaching out to faculty from other educational institutions and industry representatives to serve as judges for the students' research submissions (Sacramento State faculty cannot serve as judges since the campus is hosting).

"We want this to bring all students together to show unity within the system," says Dr. Khan. "But we're also giving businesses and industry folks in the Sacramento area access to the best students our system has to offer, so potentially they could one day hire these students, and students can build connections with industry."



### Alumni - 2016



After graduation, **Casey Engmark** continued to work for the structural design firm for which he had previously interned. In this role, he was responsible for design and structural analysis of a variety of solar panel arrays for residential and commercial use. "Since solar was a relatively new industry, our firm was on

the forefront of design and third-party reviewing for the solar industry," says Casey.

After nearly a year, he realized that he wanted to be outside, ideally working in wet infrastructure. Casey became a Project Engineer for a general engineering contractor that specializes in large-scale underground pipes. "At my current position, I am assisting in the project management of an approximately \$6.5 million public works job for Caltrans and the city of Livermore," says Casey. "Although I am not designing the systems, I am utilizing general engineering and water resources knowledge in the field daily. I am constantly discussing changes with designers and Caltrans engineers. I will be starting a new project at the end of this year: the installation of a force main and pump station located in Elk Grove."



—Jennifer Langford  
Continued from page 17

#### Does your daughter understand what your achievement means?

I think she gets it. There was a moment in the graduation ceremony where she stood up when they recognized the children [of graduates]. She was so proud of me, and that felt really good. It was so much work. I hope she'll remember it. I had three nieces there and I want them to grow up knowing they can do whatever they want to do.

#### What classes and professors did you enjoy most?

Land Surveying with John German was one of my favorites. Being outside was fun for me. I do have a place in my heart for geotech, so I really enjoyed taking classes with Dr. Aryani.

I only took one class with Kim Scott-Hallett and if I could do it over, I'd have taken more classes with her. She's an excellent professor who knows how to reach a wide range of students and learning styles. I really enjoyed Dr. Johnston's Environmental Engineering. It's the hardest class in all of engineering, but he made it enjoyable because he's such a nice guy. I'm a pretty good student and do well in my classes, but I had to put a lot of time and work into that one – double or triple [the effort]. It requires you to remember stuff from early on in your college career.

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Alumni (continued) – 2016



Enjoying the sunshine in San Diego is **Patrick Sanford**, an Engineer for Clark Construction working in construction management. “The project I’m currently on is the San Ysidro Land Port of Entry Phase 3 Project,” Patrick says. “The scope of work for the project is to re-route the I-5 freeway into Mexico at the San Ysidro Land Port of Entry, which is the largest port of entry in the world. Over 100,000 cars cross this border every day, along with 50,000 people walking across. Currently we have the largest de-watering operation in the United States to draw the water table down far enough to install a vehicle tunnel. The red tanks I’m pointing to in the picture are part of this system.”

“I’m doing fantastic and would like to thank Sacramento State for the education I received. I may not be directly involved with civil engineering, but it’s more about how to solve a problem and the critical thinking process, which has served me well thus far.”



After interning with the U.S. Army Corps of Engineers throughout her college career, **Jenna Peterson** accepted a full-time position at graduation and is celebrating eight years with the Corps. “I am currently working as a Civil Engineer in the Operations - Technical Section of the Sacramento District,” says Jenna. “The majority of my job is to manage the emergency planning exercises and emergency action plans for 17 dams in California. I also get to go out and inspect dams once in a while, and work on other contracting actions such as road repair work at our parks. My work is always changing, which I enjoy because I get to do new things all the time. With all the water this past winter, we have definitely been busy!”

“I enjoyed my time at Sac State and think it is a great school, especially for Civil Engineering. I’m glad I chose this career path and am loving life after graduation! Here’s a photo of me at the Folsom Dam Auxiliary Spillway.”



During her time at Sacramento State, **Juana Tellez** interned at the Sacramento Suburban Water District (SSWD) under the leadership of Assistant Engineer Dave Jones. She credits him with connecting her to her current employer, Domenichelli and Associates, Inc. (D&A) in El Dorado Hills. “We are a small water resource engineering firm,” says Juana. “Currently, I’m working on a water main replacement project for SSWD. AutoCAD was not my specialty, but the firm has given me an opportunity to learn AutoCAD. In the past year, I have worked with HEC-RAS, H2ONET, H2OSURGE, XPSTORM and other programs. Also, I have helped with proposals for future projects, just like in CE 190.”

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Now that you’ve graduated, what’s your impression of the Civil Engineering program at Sac State?

As someone who was recruited and got a job in my last semester of school, I can’t complain. The program is practical, and the community involvement allows students to see a practical view of what engineering is about and how to get a job. Education is not worth as much if you can’t get a job out of it in the end.

I think some of the most valuable courses are not engineering-related. I worked on a minor in communications studies for a while and I think for engineers that’s really important. I was in two group projects and proofread a lot of other students’ writing. There’s a big opportunity [there for the department]; we have to be able to communicate effectively, both written and verbally.

Any parting thoughts?

If you want to do it, do it. I’m proof of that. Something I’d like to have in my future is encouraging girls in STEM to really go for it. It still is a bit of a boys’ club in STEM career paths and college education. I want to help make sure that we as women are the example for the next generation, so they know that it is a woman’s place to be there too.

“My work is always changing, which I enjoy because I get to do new things all the time.”

— Jenna Peterson

“If you want to do it, do it. I’m proof of that. Something I’d like to have in my future is encouraging girls in STEM to really go for it.”

—Jennifer Langford



## Alumni (continued) – 2016



“I have been keeping pretty busy within the last year,” says **Emily Greene**. Working as a Civil Engineer for the U.S. Army Corps of Engineers since graduation, she’s participating in their Recent Graduates Program, a two-year developmental assignment during which she will rotate working through numerous sections to help jumpstart her career with the Corps. “It is absolutely an amazing program,

and I would highly recommend it to any Sac State graduates!” says Emily. “Within the last year, I have spent time working in Operations, Civil Design, and Hydraulics & Hydrology. I am currently working a six-month rotation at Hill Air Force Base in Utah, where I am working as a Project Engineer. I provide quality assurance and engineering support to a wide variety of military construction projects including aircraft flight simulators, aircraft hangars and fire stations. Upon completing my two-year developmental assignment, I will permanently be positioned in our Construction-Operations Division.”

After the Oroville spillway failure, Emily spent time inspecting the Feather River banks downstream. “The sporadic reservoir releases resulted in severe bank failure at many locations due to rapid drawdown,” she says. “I also had an opportunity to inspect the two damaged [Oroville] spillways. This past winter was a very exciting time to be a civil engineer working in flood protection!”



**Armando Martinez** recently celebrated one year with Affinity Engineering, where he is an Associate Project Engineer. “I’ve primarily been involved in well facility rehabilitation projects working with various water districts,” says Armando. “We have a few new well facilities that we will be designing that will include either ground or elevated reservoirs, booster pumps, and water treatment.”

**Tatevik Barakazyán** reports that last fall he became an Assistant Engineer for Salem Engineering Group, Inc. in Rancho Cucamonga. “I have been learning a lot about the site development aspect of engineering and am taking on more responsibility now that the company is expanding,” says Tatevik. “My supervisor wants me to learn more of the design work – grading – so they can assign me my first project by the end of the first year of my employment.”

“This past winter was a very exciting time to be a civil engineer working in flood protection!”

— Emily Greene

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