

CONNECTION

SUMMER 2015, ISSUE 17

Your Link to the Department of Civil Engineering



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CHAIR'S MESSAGE



Dear Friends and Colleagues,

I hope your summer is going well! This issue of the *CE Connection* is my last as Civil Engineering Department Chair. This summer, I assumed the role of Interim Associate Dean for the College of Engineering and Computer Science. At the end of spring semester, the faculty elected my successor, and I am pleased to announce that Dr. Benjamin Fell has been appointed the 11th chair of the Department of Civil Engineering at Sacramento State.

I am proud of my work as chair to help guide the Department through difficult economic times, streamlining graduation requirements while preparing for our upcoming accreditation visit – all while meeting the goal of steady growth of student enrollment. The Department remains strong, and, with three new full-time faculty members starting this fall, in a better position to meet student demand than when I started as chair.

It has been a pleasure to meet and interact with many of you, and I hope to continue to work with you to explore opportunities for our students and faculty. I wish you all the best in your personal lives and continued success in your endeavors within the professional engineering community.

Respectfully yours,
Kevan Shafizadeh, Ph.D., PE



On the cover...

CE148 Students work on tablets to assess traffic on the corridor just north of campus. See story, page 8.



Dear Colleagues and Alumni,

It is an honor to have been elected by my colleagues as the new chair for the Department of Civil Engineering at Sacramento State. The department has an outstanding tradition of producing well-prepared engineers who make immediate contributions to the local, state and national engineering profession. As chair, my priority will be to build on that tradition while finding new ways to deliver our curriculum to meet the ever-increasing body of knowledge in civil engineering.

The incredible rate of change in our field is amplified by an urgent need to replace our aging infrastructure. To meet these challenges, today's civil engineers are working with new materials and software, across multiple disciplines, with slim margins to deliver systems that are more durable, reliable, and energy-efficient than those they are replacing. As a department, our focus will be to continually improve the educational experience so that our graduating students are ready to meet these modern challenges. This is an exciting time in engineering education, and my goal is to merge necessary changes with traditional topics.

I'm also excited by the growth of our faculty as we welcome Dr. Richard Armstrong, Dr. Julie Fogarty and Dr. Cristina Poindexter as full-time tenure-track professors. Undoubtedly, they will strengthen our discussions in department and committee meetings, bring in fresh perspectives, and incorporate new approaches into our curriculum. However, with approximately 53 percent of our curriculum being delivered by part-time faculty, our ability to fully meet the needs of over 900 students, especially as we seek to develop our curriculum and maintain accreditation, is concerning. So, look for us to be adding more full-time professors in the coming years.

Thank you for your continued support of civil engineering at Sacramento State. Your support is very important to our mission of producing well-rounded, technically competent engineers.

Sincerely,
Ben Fell, Ph.D., PE

At a Glance: Department Chair Benjamin Fell, Ph.D.

Dr. Benjamin Fell is the new Chair of the Civil Engineering Department effective in June. Dr. Fell has been with Sacramento State since fall 2008 as a member of the Civil Engineering faculty and has taught structural analysis, structural dynamics and the design of steel structures.

He holds a Ph.D. in Civil and Environmental Engineering from UC Davis ('08), an M.S. in Civil and Environmental Engineering from Stanford University ('04), and a B.S. in Civil Engineering from Rensselaer Polytechnic Institute ('03).

His research focuses on the behavior of structures under seismic effects. Recent research endeavors include testing a simulated residential structure on a shake table, and the wine barrel rack research featured on page 7 of this issue. Dr. Fell says, "My research is focused on minimizing the effects of seismic loading on the built environment – bridges, buildings, pipelines and the like."

Dr. Fell is an advisor to several student engineering chapters: the American Society of Civil Engineers (ASCE) and Structural Engineers Association of Central California (SEA OCC)

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Ken Kerri Luncheon Keynote Centers on New Downtown Arena



Warm memories of a renowned professor were evident at the annual Ken Kerri Endowment Fund Luncheon last April, where more than 200 guests gathered to socialize, hear a dynamic keynote speaker, and of course, fundraise for Dr. Kerri's eponymous endowment fund.

Provost Fraka Harmsen spoke of Dr. Kerri's 40 years of teaching at Sacramento State before his retirement in 1997, when he shifted his primary focus to the Office of Water Programs, which he founded in 1972. "What an amazing legacy," she said of Dr. Kerri.

Dr. Ramzi Mahmood, Director of the Office of Water Programs, reminded attendees that continuing to support the department was the way to keep Dr. Kerri's memory alive. "There were two things Ken cared about," said Dr. Mahmood. "The department and students. He believed in making strong connections to the civil engineering community."

Mark Friedman of Fulcrum Properties – who is also part owner of the Sacramento Kings – gave the keynote address. He spoke about the new Downtown Arena that will not only serve as home court for the Kings, but will be a new city center incorporating dining, retail, housing and a hotel.

"What we're doing will set the tone and character for the next 30 to 40 years," said Mr. Friedman of the development, which is expected to be complete in October 2016. "We're using this project as a vehicle to show what's great about Sacramento."

Main goals of the arena building itself are technological sophistication and environmental responsibility. Mr. Friedman showed a sample of the embossed metal paneling that will comprise the outside of the building, with a pattern designed to reflect the shadow of the trees when seen from a distance. There will be a 10-foot "living green wall" stretching around the building,

“ I’m absolutely stunned by the power of this project to attract retailers we’ve never been able to get before in Sacramento. ” — *Mark Friedman*

Preceding the keynote speaker, Department Chair Dr. Kevan Shafizadeh announced Civil Engineering student scholarship winners (see page 14) and thanked all those in attendance.

"telling the story of Sacramento as the City of Trees," said Mr. Friedman.

Taking advantage of the pre-existing Downtown Plaza garage, the arena will be sunken in the ground with doors five stories tall, so that passersby can look down

into the arena and see the game. "When this building is shown on TV, there'll be no question where the game is being played," said Mr. Friedman.

As for the technological aspect, there will be exclusive tools and images viewable only to people in the arena on their mobile devices. "You'll see all the analytics the coaches get to see as well as nine different TV feeds and replays – all at the tap of a button," he said.

"Our biggest competition is your TV," Mr. Friedman continued. "To compete, [coming to a game] has to be an experience that includes the excitement of friends, bars, dining – and it doesn't end when the game is over." The project includes a banquet facility, bar, and a third-floor pool overlooking the arena. There will be a 250-room Kimpton hotel and 60 luxury condos for sale.

"I'm absolutely stunned by the power of this project to attract retailers we've never been able to get before in Sacramento," said Mr. Friedman. Another goal is to have about 190 non-sports entertainment events each year. The acoustics, loading functionality and spaciousness will all be greatly improved from those of Sleep Train Arena, making this complex a much more attractive venue for entertainment acts.

In response to a question about parking and traffic congestion, Mr. Friedman stated that a traffic influx already happens each day when workers commute into and out of downtown. "There's virtually no traffic mitigation needed because all events are off-peak and the system is already in place," with 2,700 parking spaces on-site and 1,700 across the street.

"Many people will already be downtown for work," said Mr. Friedman. The variety of dining, shopping and bars means that patrons "coming early to events and staying late spreads out the traffic."



Steel Bridge Team Makes Historic Sweep at Mid-Pac

Sacramento State's Steel Bridge Team achieved an unprecedented sweep of six out of seven categories in the Steel Bridge competition at the American Society of Civil Engineers (ASCE) 2015 Mid-Pacific Student Conference in Davis this past April.

Victory was truly savored by civil engineering students attending Mid-Pac, especially the six members of the Steel Bridge project team. Competing against 13 other universities, including UC Berkeley, UC Davis, several CSU campuses,



University of Nevada, Reno and three international universities, Sacramento State's Steel Bridge Team "blew the competition away," according to Michael Capili, a senior and the team's lead designer who was participating in Mid-Pac for the second time.

"Our goal was to come back strong from the 2014 competition where we took a dive," Michael continues. When forming the team last year, "They asked if I could design a bridge that could take us to nationals. I said, 'I'll design a bridge that won't fail.' So we designed a bridge using the coursework we learned at Sac State. Taking the concept from paper and pencil to actual full-scale bridge is an experience all on its own."

The journey to Mid-Pac began almost immediately after last year's Mid-Pac was over. The team spent the summer and fall 2014 designing a sleek structure that could withstand the increasing weights placed on it during competition. As the academic year went on, many other students assisted the Steel Bridge Team, including Aaron Allen, a transfer student who was discharged from the military less than a year ago and joined the fabrication team due to his valuable experience as a certified welder.

"I was interested in steel bridge because I wanted to observe the design process," says Aaron. "In the military, I had lot of experience in different parts of the construction process, project management and coordination."

The bridge was comprised of chromoly for its light weight, stability and rigidity.

Will Cope, the team's project manager, was part of the process "from the design of connections and counter bracing, to fabrication and build team," he says. Having such a key role in the Steel Bridge Team helped Will "learn how to be an effective leader. We all put a tremendous amount of work into the bridge, but no one expected us to sweep the competition. I am very proud of what my team was able to accomplish this year."

The team had a positive attitude from the start, naming the bridge Renovatio, which in Latin means "rebirth." The philosophy was simple: the rebirth of Sacramento State's ingenuity; setting the example for students to become involved and continue a legacy of competence.

2015 Steel Bridge PROJECT TEAM

Will Cope – Project Manager

Jeremy Nottnagel – Co-Project Manager

George Brown IV – Construction Captain

Khalid Kanaan – Assistant Construction Captain

Michael Capili – Lead Designer

Jaime Malagon – Project Coordinator

Dr. Ben Fell – Faculty Advisor

Dr. Benjamin Fell accompanied the team when they traveled to Kansas City, MO for the national competition, offering a professional perspective on improvements the team could make for next year's Mid-Pac. Will, who also participated in Mid-Pac for the second time this year, said, "We had a blast in Kansas City and learned there were many differences between regionals and nationals that will prepare us for future national competitions."

While some of those who participated on the Steel Bridge Team will graduate this year, the lessons learned will be useful for next year's competitors.

Said Michael of the national competition, "We wanted to be part of the general engineering community. It was a privilege to be around competent minds of the [ASCE] student chapters of the U.S. We didn't win at nationals, but we got to eat some good barbecue!"

Napa Quake Inspires Seismic Testing of New Wine Barrel Racks

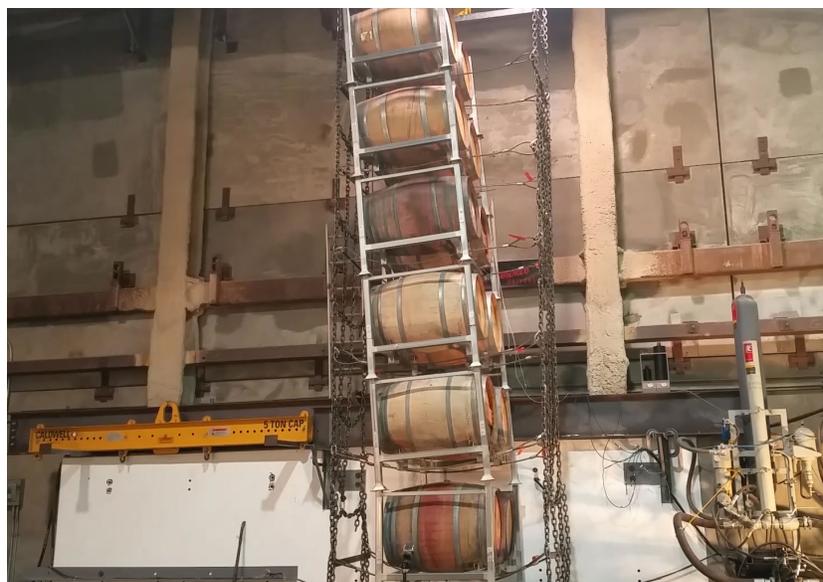
The August 2014 earthquake in Napa registered 6.0 on the Richter scale and cost the Napa wine industry more than \$80 million in damages, partly due to the practice of storing wine barrels on top of one another. Not only can that endanger cellar workers, but it provides minimal protection to wine barrels during seismic events.

Since the Napa quake, a small Sonoma company that distributes a new wine barrel rack system sought out Dr. Benjamin Fell to discuss seismically testing their product. "Instead of stacking barrels on top of barrels with minimal frame in between barrels, this is a rack-on-rack system," says Dr. Fell, "so the wine barrels don't support the load of barrels above them."

Designed by an Australian engineer, the rack system – if proven seismically sound – could offer considerable protection to more than 450 wineries in Napa County whose main asset sits in their cellars.

"The racks are specifically designed for quakes, but have never been tested in a lab setting, so the company approached me," says Dr. Fell. "The first phase of testing will be here at Sacramento State; we have a one-way shake table. Hopefully in the next few years we can test at another facility that has a three-directional shake table. The ground moves in three directions in a quake so it'd be nice to test it in those conditions as well."

Funded by the Sonoma company that distributes the racks, the research will benefit wineries and also the students who will learn from participating in it. "This is advancing our knowledge of an unknown, untested system that may prove to protect these wine barrels," says Dr. Fell. "The company wants a video of the system working while the ground shakes; if they have that video showing the racks survive, they'll show it to potential buyers as evidence that it works. In addition, the research helps us gain an informed understanding of system behavior; this is in line with our mission at the university – to advance knowledge and expose our students to research activities outside the classroom."



Students Use Grant-Provided Tablets for Campus Parking Study

What could be a more pressing issue in the day-to-day lives of Sacramento State students than the availability of campus parking? That's exactly what Dr. Ghazan Khan thought as he applied for and received a grant from University Enterprises, Inc. (UEI) to acquire tablets that students used in his CE 147 class to analyze parking on campus.

Students were assigned to study two particular parking structures and one lot on campus to determine whether assertions of inadequate parking were accurate. "They needed to find out which lots were performing at what capacity at what time of the day," says Dr. Khan. "So we did



some calculations to figure out parking demand: At what time during the day does a lot become full or half full? [Students] had to calculate the probability of finding parking in different lots at different times of day."

The six tablets acquired through the UEI grant have built-in GPS, making it easy to pinpoint specific parking areas. Dr. Khan negotiated with a developer of applications for transportation data collection, offering that students who become acquainted with the app now may use it later as professional engineers. So the app, along with the software, was provided free for students.

"This type of field data collection is usually done with pencil and paper; you write down how many vehicles and pedestrians are passing," says Dr. Khan. "Students loved using the tablets. They can collect the data, download it to an Excel file and it's ready to be processed." The data are also time-stamped to provide time of day accuracy.

The tablets are a huge improvement over the previous method of counting traffic with electronic count boards, which are expensive and require proprietary software that doesn't update the way an app does. So the tablets are cost effective, more efficient and more convenient. Plus, Dr. Khan says they were used in the CE 147 lab and will be used again in the GIS class this fall.

"It was a brilliant experience for the students," says Dr. Khan. "They went out and did something practical that you can't do inside the classroom. This is as real as it gets. What they did was exactly what they'd do if they were to find a job in the transportation industry."

Traffic Engineering Final Project Focuses on Key Corridor Near Campus

During the spring semester, students in Dr. Ghazan Khan's Traffic Engineering (CE1961) class were given a challenge to put themselves in the shoes of a consultant for the City of Sacramento. In response to complaints of area residents about the Carlson Drive/State University Drive corridor on the north entrance of campus creating a messy traffic situation, the assignment called for students to "analyze the corridor and determine if it is performing well or not" both in terms of operations and safety.



This project – serving as the final for CE 196I – was based on an actual study done about three years ago. “The first thing they needed to do was go out there and analytically approach the problem,” says Dr. Khan. “Then come up with performance measures to objectively make a decision whether traffic is actually bad or not at this intersection.”

Students found that there were some minor intersections within the corridor that weren’t problematic, but that there were some legitimate problem areas, particularly at the H Street and J Street intersections in the morning when westbound traffic is traveling downtown and into the campus.

“Students were to recommend improvements that were realistic and practical,” he says. “They weren’t allowed to recommend putting a diamond interchange or running a freeway through J Street; that’s not going to happen.”

Working with two professional software products, Synchro and Highway Capacity Software (HCS), the students worked in small groups to model the corridor and their suggested improvements. “The modeling of these intersections they had to do in Synchro was tough by my class standards and industry standards,” says Dr. Khan. “I took the risk and threw it at them, and they did quite well. This project gave them hands-on experience with software they’re going to use in their professional lives.”

(Students were required to use Synchro in CE147, Transportation Engineering, which was a prerequisite for this course.)

Dr. Khan was pleasantly surprised that students went “outside the box” to come up with innovative solutions. “If there’s bad traffic, don’t focus only on vehicles,” he said. “Students introduced other modes like buses or made it more pedestrian-friendly, or put in bike lanes so people come out of their cars.” Although CE196I focuses solely on vehicular traffic, students were not limited to vehicles to craft their recommendations.

“I pushed students really hard and asked them to do a lot for this project,” says Dr. Khan. “These were mostly graduating seniors focusing on their senior design

project, but the amount of commitment I saw was amazing. Sometimes students were frustrated and I’d help them if they got stuck on the software. But they felt they were learning something useful so they were willing to spend the time and make the effort.”



Continued At a Glance—Benjamin Fell

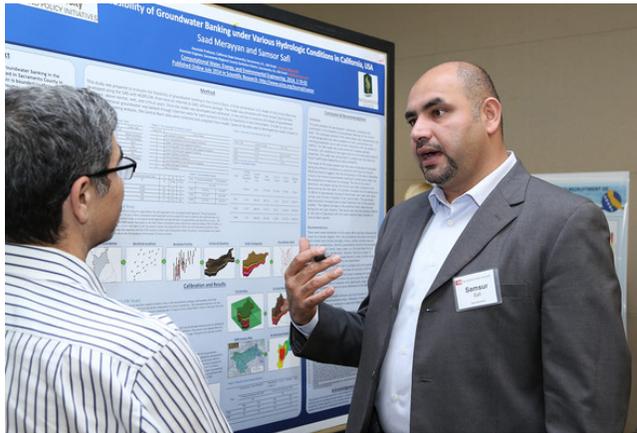
and regularly advises/mentors students as part of civil engineering student competitions, such as the Steel Bridge Team as part of the Mid-Pacific regional and national ASCE/American Institute of Steel Construction competitions.

Areas of scholarship include large-scale experimental techniques, light-frame residential structures, nonlinear structural analysis, earthquake engineering and structural dynamics.

“I’m excited for the opportunity to work collaboratively with my colleagues to continue to improve our degree programs in civil engineering,” said Dr. Fell. “It is noteworthy that we’re entering into a new era of campus leadership with Dr. Robert Nelsen as the eighth president of Sacramento State. As I was reading President Nelsen’s July 1 article in the *Sacramento Bee*, I realized many of his initiatives align with our top departmental priorities: teaching excellence, mentoring students, increasing graduation rates, and improving facilities.

“However, I’m acutely aware that continual improvement in these areas will necessitate resources. So, I remain focused on making sure our resource allocation meets the needs of our departmental growth, especially access to modern lab space, equipment purchases, and hiring full-time faculty. As a department, we should also be prepared to think outside of the box in terms of our engineering curriculum and fundraising. To this end, I welcome the opportunity to discuss new ideas with the faculty and our industry advisory board, CEPIAC (Civil Engineering Program Industrial Advisory Committee).”

Student-Faculty Research Poster Presented to CSU Trustees, Presidents



A research project originating in 2011 by Samsor Safi ('05, MS '11) and Dr. Saad Merayyan blossomed into a publication in a scientific journal, helped its student author secure a job, and recently received an audience at a meeting of the CSU Trustees and all campus presidents.

Titled "Feasibility of Groundwater Banking Under Various Hydrologic Conditions in California," the research – which took the better part of a year for Samsor ("Sam") and Dr. Merayyan to complete and served as Sam's master's project – was repackaged as a poster presented at the Student-Faculty Research Poster Reception at a meeting of the CSU Board of Trustees last March. The event was cohosted by the CSU Council on Ocean Affairs, Science & Technology (COAST) and Water Resources and Policy Initiatives (WRPI).

"The event was held in the Chancellor's Office," said Dr. Merayyan. "All the CSU presidents and Trustees were there. They had their meeting and then came to meet with the graduate students and talk about their research topics. It was amazing to have all the presidents in the same place, and we had some folks from the Governor's Office come and talk to us."

Said Sam, "This was a unique learning experience; it was such a grand idea to publish this paper and to capture the details in a poster presentation. The topic

was very relevant, with California being in a drought crisis. Lots of people stopped by to ask questions, including President [Emeritus, Alexander] Gonzalez; that was a special moment."

After Sam's graduation in 2011, he and Dr. Merayyan refined their research and submitted it for publication in the *Journal of Computational Water, Energy and Environmental Engineering*, published by Scientific Research. It was published in 2014. "Our research helped me get the job I have now," said Sam, who works as an associate civil engineer for the Sacramento County Regional Sanitation District Wastewater Treatment Plant. "I showed it during my interview."

According to Dr. Merayyan, other presentations at the COAST/WRPI event covered topics such as the drought, fisheries, coastal issues, water and the environment.

With recently enacted state legislation (the Sustainable Groundwater Management Act) intended to better manage groundwater in California, Sam notes that "more people are reaching out and asking questions about this topic. I work in policy and planning so the research helped me a lot. I appreciate this opportunity Dr. Merayyan gave me [to attend the COAST/WRPI event]. He's a great professor and we've had a lot of support from everyone."



Staff Profile



Neysa Bush

Read this and if you ever find yourself in a game of "Two Truths and a Lie" with Neysa, you might have a chance of winning.

How long have you worked at Sacramento State?

I've been here a total of 15 years, since June of 2000. I spent my first year in Admissions & Records, then four years in Student Financial Services. I've been in the Civil Engineering Department 10 years. Ramzi Mahmood, who was department chair at the time, hired me.

What do you enjoy most about working here?

I would have to say the people. The faculty, the staff, students – there's a lot of satisfaction in helping students. It's very interesting to work with our international group of folks.

I think that the big events we put on for students, like An Evening With Industry – they get so much out of it and I always hear lots of thanks from them. I also enjoy belonging to our two industry advisory boards (the Civil Engineering Program Industrial Advisory Committee, or CEPIAC, and the Environmental Engineering Water Resources Graduate Program Industrial Advisory Committee). My overall feeling here is that I've always felt very appreciated, so it makes the job easy.

What do you do for fun?

I'm sure people don't want to read that I garden. They want to hear that I shoot muzzle loaders. Yes, I shoot muzzle-loading rifles and pistols in competition. Think

Daniel Boone guns: they're replica guns from the 1820s through 1860s, and we shoot at paper targets.

We have a club with a monthly club shoot here in Sacramento. My husband and I also participate in the California state championships and the national territorial program. We shoot in California, Idaho and Oregon, and the National Muzzle Loading Rifle Association (NMLRA) holds a Winter National shoot in Arizona each year.

I am the reigning women's national champion based on the NMLRA territorial program. It's called the Top Gun Award, and in the last 10 years I've been women's Top Gun eight times, including the last six consecutive years (2009 through 2014).

How did you get started in that hobby?

Someone gave my husband a muzzle loader and took him to a club shoot. He thought I'd like to join him. I've been doing it about 20 years. There are probably 1,500 people who actually compete across the nation.

My hobby always works in "Two Truths and a Lie" [the party game in which players offer three pieces of information about themselves – one untrue – and others have to guess which item is false].

What do you get out of it?

I like the competitive part of it. In high school I swam so I could compete against myself for a higher score each time I was out there. This is something where I can compete with myself to get better.

We just went to the Winter Nationals this past March, and I actually placed first in the pistol competition in my classification. That's not a women-only one – I was shooting against men. They opened a women's competition and I still shoot both and have won the women's every year since it started, but have

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ALUMNI SPOTLIGHT



Bob Douglass: A Service- Oriented Life

When Bob Douglass graduated from Sacramento State in

January 1966, the country was embroiled in the Vietnam War. Though married and starting his career as a civil engineer, Bob didn't hesitate to volunteer for the Marine Corps that year. It was one of many times in Bob's life and career when he's stepped forward in service of the greater good.

Before his military days began, college was an idyllic time. "I always wanted to be a civil engineer, and Sacramento State taught me how," says Bob. "They trained me very well. It was the launching pad for my career and a very happy time in my life." He also participated on the track and football teams, and on the sidelines his favorite professor, the late Les Gabriel, often cheered him on.

"Professor Gabriel was very patient and thorough," Bob says, reflecting on the small class sizes in those days – 12 students was not unusual. "His office was always open. He took me under his wing; I think he did that to all students. He came to football games and would talk to me afterward. He was a very kind gentleman."

Upon graduation, Bob began working as a civil engineer for Placer County, but before long he decided to volunteer for Vietnam. Joining the Marines in 1966, he served for more than three years. "I was in Vietnam the whole year

of 1968," he says. "It was a difficult year, but I was very proud to serve my country. I learned a lot about leadership. The Marine Corps wanted me to be an engineer but I wanted to be on the battlefield, so I became an artillery officer and served with the infantry." He recalled there were a lot of mathematics and engineering principles involved in his military operations.

Bob had considered making the Marine Corps a career, "but in 1970 we weren't very popular," he recalls. "The mood of the country was ugly and I found I missed civil engineering. So I kept my commission as a reserve officer – a weekend warrior – and it was the best of both worlds for me. Those years put me behind, but I quickly got back on track and it was a worthwhile tradeoff."

While working for the City of Newark (California) and raising a family, Bob earned his master's degree from San Jose State University (SJSU) and went on to work for Greiner (a predecessor to URS Corporation) from 1973 to 1985. "I was the project manager for the planning, permitting, design and construction of two high-tech business projects that featured Fremont's first Silicon Valley-related businesses," says Bob. "Both projects used on-site retention of storm drainage before that was a common practice. The total project site covered 750 acres; 250 acres of new marsh were created that are now part of the San Francisco Bay National Wildlife Refuge."

In 1985, Bob joined Cargill Salt, where he stayed until his retirement in 2007 and continues to serve as a consultant. "I was the project manager for a business park in Newark that included on-site retention of storm water and landscaped drainage swales for pretreatment of storm water," he says. "A new tidal marsh was created with the project and it was awarded a Project of the Year for land development by the San Francisco Section of the American Society of Civil Engineers (ASCE)."

At Cargill, Bob also served as lead negotiator for the donation and sale of over 16,000 acres of salt ponds in Alameda, Santa Clara and San Mateo counties to the U.S. Fish and Wildlife Service and the California Department of Fish and Game (now “Fish and Wildlife”). The transaction was valued at \$220 million and took five years to complete.

Throughout his engineering career, Bob maintained his reserve status in the Marine Corps, serving during Desert Storm and retiring as a colonel after 30 years. His years of community service include being a guest lecturer for freshman engineering students at SJSU; a volunteer track coach at American High School in Fremont (ongoing); and serving on various boards and commissions for Ohlone College, Chabot College, the Treasure Island Museum and more. He also served on the City of Fremont Planning Commission for six years.

“The city council makes decisions but projects come before the planning commission,” says Bob. “As a civil engineer, I brought a good perspective and I really enjoyed it. In my consulting career, I spoke to many city councils and planning commissions throughout the Bay Area. It was a role reversal to hear my colleagues pitch their projects.”

In fact, Bob’s advice to young engineers aligns with that experience: “I would tell civil engineers to become involved with their community,” he says. “We have a unique perspective on the world; we know how it’s put together. We need a stronger voice in the community. We built it!”

Bob’s never idle for long: he’s an avid runner, bicyclist and reader of military history. “And a grandfather – that’s a big deal!” he says. He and his wife have three children and seven grandchildren.

Though he attended community college and SJSU, Bob reserves his greatest fondness for Sacramento State, returning for football games and Civil Engineering Department events like the Ken Kerri Endowment Fund Luncheon this past April. He often encourages the students on his track team to consider Sacramento State.

“I like to come back and see the programs the department hosts,” Bob says. “I had a wonderful collegiate experience at Sac State. I’m a loyal Hornet.”

Continued Staff Profile—Neysa Bush



placed in the Top 10 nationally in men’s pistol. That’s a big deal because there are close to 200 participants in that aggregate. To come in sixth or seventh in the nation in that one, I always feel good about that.

Tell us about your family.

I’ve been married 37 years and have two adult children – a daughter and a son. My son-in-law and daughter-in-law are great people.

If you could have any super power, what would it be?

Working here at Sac State, I would want to have enough classes and faculty to help our students make it through the program as quickly as possible. I just think locally.

Anything else?

I do actually like to garden and play bridge!

Editor’s Note:

Starting summer 2015, Ms. Neysa Bush will leave the Civil Engineering Department, having served as its Administrative Support Coordinator for the past 10 years, and start as the Director of the College of Engineering and Computer Science’s Career Services Office. Ms. Bush will continue to work with our students as they prepare for internships and careers in the engineering field as well as with industry representative who seek to hire our students.

NEWS & NOTES

Students

2015 Civil Engineering Freshman Scholarships

Margarita Kovalchuk
 (see page 18 for a special Student Profile on Margarita)



James Cortes

“I was surprised when I was awarded the scholarship,” says James. “I really didn’t think I had a chance. Getting any scholarship is great since the money is hugely important in paying university fees, but

getting the scholarship from the department of my major early in my education here at Sacramento State gives me confidence that I can continue to perform well in school since others are believing in me.” Over the summer, James participated in the Summer Transportation Academy, which is housed at Sacramento State but attracts undergraduate students from universities throughout Northern California.



2015 ASCE Golze Scholarship (\$1,500)

Brent Ducker (Spring '15)

As an active member of the American Society of Civil

Engineers at Sacramento State, Brent Ducker participated in many events during his time as a

Civil Engineering major and was awarded two previous ASCE scholarships.

“I became the president of ASCE while helping to build Sac State’s engineering competition teams like steel bridge and concrete canoe,” Brent says. “I had a lot of fun and made tons of friends while completing my education. Earning this scholarship allowed me to focus on completing my education because I did not have to work a part-time job to pay my rent and other bills. But the most valuable part of winning this scholarship is the connections that I made with working professional engineers who are members of the ASCE Sacramento Branch. This organization has many great civil engineers who are willing to help you succeed.”



Tim Fleming Memorial Scholarship [California Transportation Foundation] (\$1,500)

Spencer Ord, EIT (Spring '15)

Spencer graduated in May and accepted a full-time job with Mark Thomas & Company. Active in the Sacramento State Student Chapter of the Institute of Transportation Engineers, he was honored with the Tim Fleming Memorial Scholarship this past spring.

“Receiving this scholarship was easily one of the highlights of my college career,” says Spencer. “Tim [Fleming] was known for his integrity, honesty and his ability to lead, and I strive every day to carry the same qualities that Tim possessed. Tim was a former Principal of Mark Thomas & Company where I currently work, and it is clear that he had a profound effect on many people in my office. I want to thank Dr. Shafizadeh for urging me to apply for this scholarship but most importantly, Susan Fleming for awarding me with this honor. I hope that this scholarship can continue for years to come.”

2014 ASCE Sacramento Ladies' Auxiliary Scholarship (\$1,000)



Vinh Le Kha

With encouragement from Neysa Bush, Vinh applied for and was awarded the ASCE Ladies' Auxiliary Scholarship.

"Please allow me to say a big thank you from my heart to all ladies in the ASCE Ladies Auxiliary Sacramento

Section," Vinh says. "Because of your generous donation, more students like me are able to advance in our education. As an adult immigrant, college education is essential for me to ensure a sustainable future. As the mother of two young children with many family obligations, this scholarship means more to me than just money. It is a big encouragement for me to move forward in schooling. I greatly appreciate your bountiful donation to take me closer to my education goal."

2014-15 Outstanding Student: Department of Civil Engineering

2014-15 Outstanding Student: College of Engineering and Computer Science



Reaa Ali, EIT ('14)

Unlike many honors Reaa Ali received during her time at Sacramento State, the Outstanding Student awards from both the Department and the College of Engineering and Computer Science were unexpected.

"Being nominated for this honor was an accomplishment in and of itself," says Reaa. "It was like, 'Here you go, Reaa, you've earned this.' I was always hopeful that one day I'd do something good enough to receive an award for it."

Reaa has been featured in the pages of *CE Connection* several times during her undergraduate experience – for winning scholarships, for co-organizing events like the ITE Student Leadership Summit last spring, for competing in ASCE Mid-Pac, and for participating in the Society of Women Engineers (SWE), among many others.

Although she acknowledges having worked hard and that receiving these distinctions was a "very proud moment," Reaa shares the accomplishment with her parents, who have been immensely supportive of her studies at Sacramento State.

In the midst of planning her wedding (which took place in late July), receiving the Outstanding Student awards meant Reaa had the thrill of attending commencement ceremonies a second time in May – this time, sitting on stage with the faculty. "It was such fun!" she says.

Reaa graduated in December 2014 and soon after, resumed work at Kimley-Horn Associates, where she had interned during summer 2014. "These awards are sitting at my desk at work," Reaa says. "They're a constant reminder that I have to live up to the awards I've been given, both within my industry and with my peers. The way to do that is to pass the torch forward and to remember how I got here."

NEWS & NOTES

Other Scholarships Awarded

2015 EE/WR Engineering Grad Scholarships (\$1,500 each)

Kenneth Wright
Michael Bare

2015 Ronald W. Smith Scholarship (\$1,500)

Lidiya Sypyuk

Faculty

Dr. Ralph Hwang, PE, Professor Emeritus,



was honored with the 2015 Special Recognition Award at the UC Davis Conference Center during the California Extreme

Precipitation Symposium. "I was lucky to be selected by the majority of the water resources civil engineers practicing in California," says Dr. Hwang. "Previous recipients include the Hydrological Engineering Center, the U.S. Army Corps of Engineers and the California Department of Water Resources (DWR)."

Dr. Hwang was a faculty member in Civil Engineering for many years until his retirement from the department. He is a distinguished ASCE Fellow, and directed the Sacramento State Office of Hydrologic Studies.

The event coordinators arranged for Dr. Hwang's former graduate student, Melissa Collard (now a senior engineer with the DWR Division of Safety of Dams), to present him with the award before the symposium's audience of approximately 200 attendees.



Dr. Kevan Shafizadeh, PE

received the distinction of being named Fellow of the Institute of Transportation Engineers (ITE). To be recognized as an ITE Fellow, members must meet criteria approved by a review board, including attaining significant professional stature; responsibility for transportation or

traffic engineering work including scientific, educational and managerial activities for at least five years; and have a demonstrated commitment to ITE and the profession.

Dr. Shafizadeh has been an active member of ITE since the early 1990s and has served as the Sacramento State student chapter faculty advisor since 2004. He has received awards for distinguished service by the Northern California Section of ITE in 2006 and in 2014. In 2014, Dr. Ghazan Khan became the Sacramento State student chapter faculty advisor.

"The grade of ITE Fellow is the highest membership grade one can achieve in this professional organization," said Dr. Shafizadeh. "I appreciate being validated by other Fellows within the professional transportation engineering community and being recognized by an organization with which I have been involved most of my professional career."

Alumni



2011... Marc Martin began working for Viking Construction in August 2012, where his first assignment was helping with the Watt Avenue interchange widening project as a bridge and soundwall sub to O.C. Jones & Sons. Marc then served as the project manager for a small job on Brewer Road over Markham

Ravine in Pleasant Grove. Until recently, he was working on the Sacramento City College pedestrian overcrossing, the Roseville Road bridge replacement next to Haggin Oaks Golf Course, and the I-80/Hwy 12/680 project in Fairfield. Marc reports: "Unfortunately, I was laid off from Viking in late July 2015. However, I would love to be in *CE Connection*. I would appreciate hearing about any job openings looking for someone with experience." If you'd like to get in touch with Marc, contact him at mmartin88@sbcglobal.net.



2007... Since graduation, Paul Bradbury, PE, has worked in transportation engineering with an emphasis on roadway design, drainage design and utility coordination. He's worked on projects that have been or are being built in Granite Bay, Lake Tahoe, Lone and Apple Valley in California. For a

time, he moved to Illinois to work on the Chicago-to-St. Louis high-speed rail project.

"I just recently moved back to California and I currently live in the Fresno area with my awesome fiancé and our dog," says Paul. "Since graduation, I have raced mountain bikes, learned to play the violin and traveled to my childhood home in Massachusetts for the first time in 20+ years.

Civil vs. Mechanical Engineering Basketball Game - April 2015

In late April, the Civil Engineering and Mechanical Engineering Departments held friendly games of basketball and soccer. The Mechanical Engineering team won the basketball game, and Civil Engineering won the soccer match.



NEWS & NOTES



Student Profile



Margarita Kovalchuk

Margarita just completed her freshman year at Sacramento State as a civil engineering major. The recent recipient of a

freshman scholarship, she has some thoughtful observations that will serve her well as a future engineer.

What drew you to civil engineering?

I was always interested in government and public service; during high school I was the Board of Education student member for the Sacramento City Unified School District, but I liked math and science a whole lot more. I decided civil engineering would be a great way to serve people and stay involved with all the new things happening in water infrastructure.

How did you decide on Sacramento State?

At first, I wasn't interested in it at all! It was way too close to home and wouldn't be anything new, but when I actually researched what the engineering departments were doing and compared costs with other universities, I realized that here I'll be able to do the same exact things, if not better. I'll get a lot more

attention and get to know the professors. I probably wouldn't have that at a different university – or I could have that, but it'd be way more expensive.

You received a freshman scholarship. What was your reaction to that?

I'm excited! I worked a lot during the past school year and when I heard I'd be getting the scholarship I figured that I could get more involved in the ASCE competitions and have more evenings off to do that. This will help me not have to work as many hours. I'm looking to join water treatment teams for Mid-Pac.

Now that you've completed your first year, what is your impression of the Civil Engineering Department?

This past semester I had a chance to really connect with a lot of other civil engineering students. We happened to be in the same physics and math classes. I realize even though it's a pretty large university and department, there are a lot of connections you can make and the people are great. It's the experience you get working together to solve those late-night problems and then at 1 in the morning you're like, "Yes, I got it!"

What class did you enjoy the most?

That's hard! I like different things in every class. The intro to civil engineering seminar was really interesting—Dr. Shafizadeh invited engineers from industry to speak about what they do and it gave me a chance to hear about so many different options we have as civil engineering majors.

Do you find yourself leaning toward any one aspect of civil engineering?

I was always interested in the environment, but never one of those people who would approach it with an emotional aspect, like wearing a “save the planet” shirt or going to a rally. I like to think more practically: what are the per capita water reductions we have to make in a drought? The spring career fair gave me a chance to meet people in the water sector and afterward, I kept in touch with Kennedy/Jenks Consultants. This summer I started as their intern for the water infrastructure business unit so I get to see how, realistically, you can help save the environment and make people’s lives better without going and protesting but actually doing something about it.

We have a great Sac State alumni presence at the Sacramento branch: there’s Tracie Mueller, PE (MS ‘07), Sean Maguire, PE (‘03), Ken Wong, PE (‘82), Alex Peterson, PE (‘85), and Kennedy/Jenks Board of Directors Chairman Gary Carlton, PE (‘73). Alex Peterson often mentions Dr. Ken Kerri and the Office of Water Programs whenever he’s explaining some concept or calculation to me. I never had a chance to meet Dr. Ken Kerri, but it’s great to be learning from him through one of his former students.

2015 CE Golf Tournament

In case you missed it, the 2015 CE Golf Tournament had an excellent turnout, as usual. Many of our industry supporters were there to compete and have a great time. Students, faculty, alumni, and industry friends are encouraged to join us for next year’s tournament, scheduled for May 6, 2016.



Support the Department

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

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

To donate to any of these funds, go to www.ecs.csus.edu/ce/support.html and follow the directions for online donations. Or mail a check made out to the appropriate fund to the Department of Civil Engineering, Attn: Neysa Bush, California State University, 6000 J Street, Sacramento CA 95819-6029.

UPCOMING EVENTS

November 5, 2015:
12th Annual Evening with Industry

December 18, 2015:
Commencement

April 2–4, 2016:
Mid-Pac Competitions at University of Nevada, Reno

April 13–17, 2016:
Alumni Week

April 13, 2016:
Seventh Annual Ken Kerri Endowment Fund Luncheon

May 6, 2016:
Fourth Annual Civil Engineering Golf Tournament

May 15, 2016:
CE 190 Student Project Presentations

MAY COMMENCEMENT

