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- Mid-Pac Teams Bring Home Honors
- APWA Traffic Lab Up and Running
Dear Colleagues and Friends,

It has certainly been a remarkable year during my first official year as Department Chair. The highlights of the year easily stand out as the department continues to flourish and reach new heights in terms of accomplishments and achievements by our students and faculty.

Highlights from the past academic year include:

- The Concrete Canoe Team and the Steel Bridge Team were both invited to compete at nationals – the first time both teams reached nationals in the same year. (See story on pages 6-7.)

- Professor Ben Fell was selected to receive the President’s Award for Research and Creative Activity, the highest such award on the Sacramento State campus. (See story on page 3.)

- Students Luke Fuson and Max Hardy received top honors in the graduate and undergraduate categories, respectively, at the University Student Research Symposium. Max went on to represent Sacramento State in the CSU system-wide competition, and placed second. (See story on page 14.)

- The Ninth Annual Evening With Industry, Fifth Annual Ken Kerri Endowment Fund Luncheon, and Second Annual CE Golf Tournament all had the most participants and industry sponsors ever.

- Despite continued budgetary constraints, enrollment in civil engineering continues to steadily increase. Civil Engineering remains the largest department in the College of Engineering and Computer Science with over 750 students. The Department graduated close to 130 students last academic year, and close to 200 students are expected to enroll as incoming freshman or transfer students. As many as 50 new graduate students are expected to enroll in Fall 2013 alone.

As Department Chair, I want to share the news of these accomplishments with all our alumni as well as the greater civil engineering community. The problem is that our e-mail distribution list is still relatively new, and we need your help to reach out to alumni and department supporters who may not be receiving this newsletter.

Furthermore, during the upcoming 2013/2014 academic year, the Department will be celebrating its 50th anniversary as a department. We need your help to reach some of our earliest alumni, particularly those who graduated during the “Golden Years” between 1963/64 and 1973/74. If you know someone who can share stories about life in the Department during its formative years, we want to hear from them (or you). Please send a quick note to CEConnect@ecs.csus.edu or call (916) 278-6982 about who they are and how they can best be reached, and we will do the rest. We hope to compile these stories for a special feature in an issue of CE Connection next year.

Have a wonderful summer and thank you for your continued support,

Kevan Shafizadeh, Ph.D., P.E.
Chair, Department of Civil Engineering
Top Campus Research Award Goes to CE Professor

When Dr. Benjamin Fell was recognized with the President’s Award for Research and Creative Activity in April, it was a well-deserved honor for a professor who has worked hard to inspire students, win major federal grants, and break new ground in structural engineering.

That’s the assessment by Dr. Kevan Shafizadeh, chair of the Civil Engineering Department, who describes the award as the highest honor that a new professor can achieve for research at Sacramento State. The award, which is reserved for professors who have been on the faculty for less than 10 years, is based on significant contributions to a discipline.

In the five years he has been at the campus, Dr. Fell has brought Sacramento State into two federally funded collaborations that are working to make structures safer during earthquakes. The first project, in conjunction with Stanford, the University of New Hampshire, and SUNY Buffalo, studied the impact of earthquakes on steel structures.

The second, an ongoing project with Stanford, UC Berkeley and UC San Diego, is exploring new construction methods for increasing the seismic resistance of walls. In both cases, students have been given the opportunity to engage in research locally, as well as work with counterparts at the other institutions.

“I was honored to receive the President’s Award,” Dr. Fell says. “My first five years at Sacramento State have been busy and quite hectic, so it provided an opportunity to step back and reflect on my work thus far. Of course, the next day, it was back to the grind, but it was a very nice moment that I will always remember.”

In addition to honoring Dr. Fell, the President’s Award highlights the Civil Engineering Department’s commitment to excellence, according to Dr. Shafizadeh. The department prides itself not only on preparing students well for civil engineering careers, but also on applied research that is valued beyond the academic world.

“Ben’s research brings together many of the elements that the California State University system is known for,” Dr. Shafizadeh says. “His work engages students in research, it requires collaboration with other universities, and it has real-world applications.”

He adds that other professors in the department also are engaged in research that contributes to the greater body of knowledge in civil engineering, as well as providing students with research opportunities.

“I’m proud that we have a dynamic department, with a faculty that is leading growth and progress in all five disciplines of civil engineering,” Dr. Shafizadeh says. “The President’s Award is an honor that belongs to Ben, but it is also Sacramento State’s recognition for how much we are achieving as a department.”

On the cover...

Dr. Benjamin Fell, shown at the computer in his structures lab, has multiple research projects under way that earned him a top campus honor.
Luncheon Draws Crowd for Bay Bridge, Department Updates

The stereotype of a civil engineer is a person more comfortable with numbers and calculations than socializing and networking. Someone apparently forgot to tell that to the 140 attendees at the Ken Kerri Endowment Fund Luncheon in April.

The crowd was so busy chatting with fellow professionals, faculty members and students that they had to be called to the tables several times before the event could get started. Then they settled in to hear an update on Civil Engineering Department activities and listen to the keynote speaker about the Bay Bridge construction project.

The luncheon began with a welcome to the campus from Sacramento State President Alexander Gonzalez, followed by remarks from Professor Emeritus Ken Kerri, who encouraged industry professionals to continue to support the department and civil engineering students.

Department Chair Kevan Shafizadeh also announced that the Society of American Military Engineers (SAME) has donated $1,000 to the Ken Kerri Endowment Fund, as well as setting up a $2,000 annual scholarship in honor of Ken Kerri. This year's scholarship went to senior Troy Hart.

The highlight of the luncheon was a keynote speech by Dr. Brian Maroney, PE, Caltrans' Chief Bridge Engineer for the Toll Bridge Seismic Retrofit Program. Dr. Maroney brought a roomful of elaborate displays that provided extensive background on the Bay Bridge construction project. He also brought samples of bolts and testing equipment that are at the center of a controversy over management of the bridge construction and quality control.

During his remarks, which covered the long journey from the damage to the bridge during the Loma Prieta Earthquake to current plans to complete the project later this year, Dr. Maroney gave a nod of appreciation to the Civil Engineering Department. He noted that about 20 percent of the engineers working on the bridge were educated at Sacramento State.

It was a statistic that resonated with the audience, many of whom attend the luncheon each year to reconnect with their roots, stay in touch with fellow professionals, and celebrate the contributions the Department makes to the civil engineering community.
The days when transportation labs were held in an unused closet are far behind – and ahead is the possibility that the Civil Engineering Department will become an active player in the integration of a central management system for the various transportation agencies within Sacramento County. The key is the new APWA Traffic Lab in Santa Clara Hall.

What was once a geotechnical lab has been completely overhauled to provide dedicated space for the Department’s half dozen undergraduate and graduate transportation courses. The room provides classroom necessities (tables, chairs, whiteboards), as well as equipment that some students have never encountered before – hulking traffic controller cabinets, sophisticated light boxes, and advanced modeling and analytical software.

The process of winning and upgrading the space began in 2010 when a generous grant was provided by the local chapter of the American Public Works Association (APWA). By using other donations and campus resources, that grant has been stretched to the point that it will now be used to purchase equipment that will allow Sacramento State to keep pace with Sacramento County as it moves to an integrated traffic management system.

Department Chair Kevan Shafizadeh, who is also the department’s transportation faculty member, says the prospects are exciting.

“Sacramento State could become the central training location for many local transportation agencies,” he says. “At the very least, students will have greater educational and research opportunities using real-time, real-world data that the system provides.”

Currently, the Department is working with Sacramento County to provide the students with read-only access to the entire advanced transportation management system (ATMS). The county expects to have workstations for management activities in Folsom and Rancho Cordova. Sacramento State would have the third workstation under such an agreement.

In addition to participating in the county’s integrated system, the transportation program has other projects under way or in development:

- Sacramento State is part of a research consortium with UCs and CSUs in a regional University Transportation Center (UTC). The UTC is one of only 10 such organizations in the United States. This research consortium already has led to two successful grant proposals.

- The Department is also holding a summer Transportation Academy for undergraduate students to explore graduate studies and careers in the transportation field (see Faculty News for more detail).

- The next faculty member to be added early in the 2013-14 academic year will be a transportation specialist.

“In the past, Transportation was only a small part of our Department,” Dr. Shafizadeh says. “Today we are growing and expanding this part of our program, which will provide great opportunities for students in the classroom, new facilities for researchers, and a greater pool of well-trained transportation engineers for the community.”
Mid-Pac Teams Qualify for Nationals

Capping a strong showing against 14 other universities at Mid-Pac in April, Sacramento State’s Concrete Canoe and Steel Bridge teams both earned the right to represent the university at national competitions. The double honor in the same year is a first for the Civil Engineering Department.

The wins were far from the only victories the students brought home from ASCE’s annual regional competition, which draws universities as far away as Canada and China. Sacramento State won the Spirit Bell, a prize determined by vote of all the competitors to acknowledge the university that displays the best professionalism, camaraderie and sense of fun.

In addition, in what are known as mini-games, Sacramento State students took first place for Concrete Bowling, which challenges students to design, build and bowl with a concrete ball. The students also took second place in volleyball and third place in both the tug of war and the relay race.

More than 50 Sacramento State students attended Mid-Pac, held in San Jose this year, with many participating on the different teams and others making the journey to provide enthusiastic support. Although teams tackling the water treatment, geotechnical and transportation challenges did not bring home trophies, captains for those efforts reported the teams performed well and laid a strong foundation to do better next year.

The Mid-Pac weekend was not without drama. The Concrete Canoe and Steel Bridge teams both overcame unexpected challenges to achieve their national invitations.

The Concrete Canoe team placed second behind University of Nevada-Reno (UNR), but only after a near-catastrophe, according to Kyle Cameron, co-captain of the team. During the last race, the UC Berkeley canoe left its lane and rammed into Sacramento State’s canoe, dubbed Imperium. As a testament to the strength of Sacramento State’s design, the impact ruined the bow of the UC Berkeley canoe but barely damaged Imperium, even though the blow came at a spot that should have caused the design to fail.

Although UC Berkeley beat the Imperium in the rerun of the race, it was not enough to keep Sacramento from coming in second overall. Since UNR placed in the Top 5 at the Nationals student focus

The Steel Bridge team with their Mid-Pac project.
last year, under ASCE rules the second-place regional winner gets the invitation to the national level. The national competition took place at the University of Illinois campus at Urbana-Champaign in late June.

The Steel Bridge team placed third overall to earn a spot at the national competition, where the rules provide inviting the top three teams. They competed in Seattle in early June.

Only some last-minute scrambling enabled the Steel Bridge team to do so well at Mid-Pac, according to Cole Bianchini, co-captain of the team and president of the campus student chapter of ASCE. At the last minute, the team discovered a rule change that would have precluded the way they planned to assemble the bridge. The team came up with a new strategy and were in the hotel parking lot late into the night practicing the new approach.

With the Mid-Pac successes behind them, students are determined to do even better next year by getting their teams together earlier and focusing on incorporating what they learned this year. In the meantime, they plan to bask in the glory of this year’s national competition invitations.
Mentors for CE 190 Get Almost as Much as They Give

This is the final story in a series on CE 190, the senior project class. To read the prior stories, go to http://www.ecs.csus.edu/wcm/ce/newsletter.html and click on the Fall 2012 issue for the academic perspective and the Spring 2013 issue for student insights.

Every professional who role models as a client or serves as a technical mentor for CE 190 knows the focus is giving students a realistic feel for work they will soon be doing as they graduate and embark on their careers. It is well understood by professors, students and the industry that students benefit from a senior class project that mimics the demands of teamwork, the stress and even the hurdles they will someday encounter.

Perhaps the less-obvious beneficiaries are the mentors themselves. Brian Poole, CCM, PE, is currently Deputy Resident Engineer for the U.S. Army Corps of Engineers Sacramento District. As a Sacramento State alumnus who took CE 190 just before he graduated in December 2001, Poole remembers how challenging the senior project was – and as both a client and technical mentor every semester for the past three years, he can see it still is.

“The class is divided into teams that each have their own scope of work – but then they have to pull all of that together in one overall project report,” he says. “One of the challenges is to own all that information so that you can make a presentation as if all of the work were your own.”

The presentation process itself is also challenging, providing a realistic opportunity to feel the pressure of thinking on your feet and communicating clearly. Making a mistake in the class may earn a poor grade, Mr. Poole says, but performing poorly in the real world may mean your firm loses a contract.

The selected projects for CE 190 sometimes coincide well with Mr. Poole’s expertise as an engineer heavily involved in Sacramento’s flood control efforts. The Spring 2013 class examined the Sacramento Weir, and a year ago students tackled a levee project similar to one for which the Corps just

“" For me, it’s very beneficial to be exposed to that fresh enthusiasm... Students who are just getting out of college know a lot. They challenge those of us who have forgotten things or who may be stuck in a rut."”

— Brian Poole, CCM, PE
awarded a contract. But the benefit of participating for Mr. Poole is less about specific projects and more about making connections.

“For me, it’s very beneficial to be exposed to that fresh enthusiasm,” he explains. “Students who are just getting out of college know a lot. They challenge those of us who have forgotten things or who may be stuck in a rut.”

He also believes firmly, as a professor once told a class he was in, that being a professional includes the obligation to give back to the profession, including helping mold the next generation of engineers. In addition, he enjoys spreading the word about the Corps as an employer that provides a wide range of opportunities and multiple paths for career growth.

Like Mr. Poole, Rick Liptak, PE, is an avid admirer of the Department’s practice of involving professionals in the student experience. Although not a Sacramento State alumnus, he is active on campus, giving presentations to classes, organizing Alumni Week guest speakers and serving on the industry advisory board to the Department.

As President of Dokken Engineering, he also knows that his firm benefits from a close connection with students, especially in the CE 190 class. Mr. Liptak encourages Dokken engineers to become mentors.

“We offer our offices for the CE 190 client meetings, so both the students and the mentors come here... It’s great for our engineers to get to know the students and the other professionals – they benefit from working with them all.”

Getting to know the students, both through CE 190 and other events on campus, allows Dokken to spot impressive talent early and familiarizes students with the kind of work environment Dokken offers. Dokken hires student interns every year, as well as graduates for full-time positions.

“The civil engineering program at Sacramento State is so great – we do everything we can to support them in developing the students,” Mr. Liptak says. “There is no end to what the benefits are, for us and for the students.”

— Rick Liptak, P.E.
Alumni Week: Professionals Bring Life Lessons to Classes

Each April during Alumni Week, the Civil Engineering Department puts out the red carpet for past graduates, inviting them back to campus to serve as role models and mentors for the latest generation of students. This year, 10 engineers spoke to 9 different classes.

However, bringing professionals into classrooms is not limited to Alumni Week. It is a technique used in several classes to help students understand the practical side of civil engineering and the many career options available to them.

Kathy Marks, PE, Vice President at Carollo Engineers and a double Sacramento State graduate (1981 BS and 1986 MS), knows the drill well since she is a frequent speaker in CE1A, the introductory civil engineering class. This year, her presentation coincided with Alumni Week.

“I like to use a portion of my talk to address some of the things that I wish I had known when I graduated and was getting ready to look for a job,” she says. “When I was a student, I didn’t have the opportunity to meet many engineers before I graduated.”

As a member of the Environmental and Water Resources Engineering Graduate Program Advisory Board, Ms. Marks stays connected with the Civil Engineering Department as an advisor. And since there are proportionately fewer women available to return to campus and offer insight to students, she makes time to share her perspective in classes.

Each time she visits a class, she finds a different aspect of her presentation that draws the most student interest. Some are focused on finding internships, while others want to hear about the usefulness of a master’s degree. Still others want to talk about the water quality issues that Ms. Marks deals with on the job.

“I tell them I expected to be a structural engineer when I graduated, but the openings were in water resources,” she says. “Now I’ve been doing it for 30 years, and after all that time you would think there isn’t anything new for me to learn. But every single time you do a project, there is always a surprise – it keeps it interesting.”

Alumni Week Speakers

Those individuals who contributed their time in different classes during Alumni Week were:

Rebecca Neves, PE (BS ’04)
Emad Ehsani, PE (BS ’08)
Keenan Booker, PE (BS ’07)
Lance Schrey, PE (BS ’87)
Steven Johnson, PE, SE (BS ’04, MS ’11)
Sarah Staley, PE (BS ’01)
Dan Wolfe, PE (BS ’03)
Theron Roschen, PE (BS ’86)
Jeremy Zorne, PE, GE (BS ’97, MS ’03)
Rob Burns, PE (BS ’08, MS ’11)

“When I was a student, I didn’t have the opportunity to meet many engineers before I graduated.” — Kathy Marks, PE, Vice President at Carollo Engineers
Jeremy Zorne: Career Path Is Down to Earth

When Jeremy Zorne was little, he liked to go outside and build dirt roads with his Tonka trucks. As he grew older, his mathematical ability and an ingrained interest in solving problems made civil engineering a natural fit for his major at Sacramento State.

A college internship at Caltrans easily could have put him on the road to a career in transportation. But fate intervened. Caltrans had a hiring freeze when Mr. Zorne graduated with his bachelor’s degree in 1997. Instead, he answered an advertisement that Geocon Consultants, Inc. was running for a soils lab technician.

“I was always interested in geotechnical engineering,” he says. “It was fascinating to me that you could be an engineer and play with dirt! I’m also an outdoorsy kind of person so it really appealed to me that Geocon wanted someone who didn’t mind going outside and getting dirty.”

Fast forward 16 years and Mr. Zorne is still playing with dirt, only now he is the Geotechnical Group Manager for Geocon’s Sacramento office. In the intervening years, he earned the right to put PE and GE after his name, as well as completed his master’s degree at Sacramento State in 2003. He has also had time to reflect on his career and offer good advice to the next generation of aspiring civil engineers.

“It was fascinating to me that you could be an engineer and play with dirt!”

— Jeremy Zorne, PE, GE

“One story I like to tell students is that I was working at REI as a bicycle mechanic during college,” he says. “When Geocon hired me, the pay was less than I made at REI, but I jumped at it. Within two weeks, they had promoted me from lab technician to staff engineer.”

The moral of the story? You have to be willing to start at the bottom – and sometimes you even have to take a step down in order to move up. It’s the kind of lesson Mr. Zorne says was embedded in his Sacramento State classes. Professors did not just teach theory but were always focusing on the practical application of what students were learning and the real-world aspects of a civil engineering career.

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Today, Mr. Zorne takes an active role in bringing the real world to Sacramento State classrooms. He visits the introductory CE 1A class each semester to present a recent project and talk about geotechnical engineering as a career. He has served on the professional panel at An Evening with Industry, and Geocon is a repeat sponsor of the popular event. He also has served as both a client mentor and a technical mentor for students working on senior projects in CE 190. He even taught a soils lab one semester.

He knows he has had an impact. When he was interviewing a candidate recently for an internship, he asked the student why he was interested in geotechnical engineering.

“He said it was me – that he remembered the presentation I made in his CE 1A class a few years ago and that the project I talked about really interested him,” Mr. Zorne reports. “It made me proud, plus it really brought it all together. I’m very appreciative of the education and benefits I got from Sacramento State, so it feels really good to give something back to the campus and 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.
- The Department Trust Fund – These resources support student attendance at conferences, senior project team expenses, and equipment for labs when other funds are not available.

To add your support to any of these funds, go to http://www.ecs.csus.edu/wcm/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
(Below, top) Professor Shafizadeh and Mike Penrose, PE (MS ’93) welcome the Second Annual CE Golf Tournament attendees to the awards luncheon, where winners for all categories were announced.

(Bottom, left) Bill Busath, PE (BS ’90, MS ’12) putts the ball in to finish out the day strong.

(Bottom, right) Teams enjoy their lunch as winners received their awards.

(Below, top to bottom) Two players anticipate the outcome of their friends’ long-range putt.

The Magnus Pacific Team of Alan Walker, Mark Spurgeon, Scott Spurgeon, and Brad Quon, PE smile as they received their trophies for the First Place.

Dr. Ken Kerri’s team relaxes after a long, hot day out on the course.
Students

Student Outreach…
A student outreach event was held by students in the civil engineering professional organizations in March. The evening gathering was designed to encourage undergraduates and transfer students to get involved in department activities and continue to pursue civil engineering degrees. Difficult classes can discourage students if they feel isolated or don’t understand the full range of opportunities the major brings. Dylan Farver, who led the organization of the event, said it fulfilled its goals and drew about 100 participants, who shared food, posed questions to an expert panel, and participated in a raffle.

Statewide Competition…
Max Hardy, who received a Student Research Symposium award from Sacramento State earlier this year, represented the Civil Engineering Department in May at the CSU system’s 27th Annual Student Research Competition. His presentation, which was based on his research into construction methods that reduce earthquake damage to houses, was one of several second place winners.

One World Initiative…
Students from the Water Treatment Team gave a presentation as part of Sacramento State’s One World Initiative in April. Inaugurated this year to focus students throughout the campus on global sustainability issues, the theme for the 2012-13 One World Initiative was Global Perspectives on Water. The team used their expertise gained from a water treatment boot camp earlier this year and the Mid-Pac competition in April to put together an engaging demonstration for interested students and other members of the campus community.

Crossing the Stage…
The Civil Engineering Department had 68 students earn their BS degrees in May, including two who graduated magna cum laude and four who graduated cum laude. In addition, there were 15 who received their MS degrees.

Faculty

Summer Transportation Academy…
Dr. Kevan Shafizadeh, PE, is inaugurating a Summer Transportation Academy that will provide undergraduate students with more insight into the field of transportation engineering. The academy will be conducted on Thursday afternoons over a 10-week
period from June through August. Participants will learn about transportation graduate programs in both the UC and CSU systems and career opportunities in the transportation field. They will go on field trips, hear presentations by transportation researchers and industry professionals, and participate in workshops on preparing for graduate school and a career in the transportation field.

Alumni

2012
Paul Shipman, BS (Fall), has been hired by the Regional Planning Branch of the California Department of Water Resources as a Water Resources Engineer. “I’m really excited as it’s a full-time engineering position and thus I’m looking forward to taking my P.E. two years from now,” he reports. “One thing the people who interviewed me said was that out of the 60 people that applied, the top three were all recent Sacramento State grads. They were impressed with how well we did!”

Tyson Pelkofer, BS (Fall), has accepted a position as a Water Resource Control Engineer with the National Pollutant Discharge Elimination System (NPDES) Permitting unit of the Central Valley Regional Water Board. He is looking forward to getting to work again, although the job search gave him time to focus on family. “The boys are getting bigger and smarter by the day and we have been cherishing our time spent together as a family,” he reports.

1983
Andre Boutros, PE, BS, has been appointed Executive Director for the California Transportation Commission. He comes to the position with more than 28 years of involvement in the development and preservation of California’s transportation infrastructure. Prior to joining the Commission in 2007 as a staff member, he held a variety of positions with Caltrans. As the Executive Director, he will report to the 11-member Commission and is responsible for administering the Commission’s oversight of billions of dollars in transportation planning and projects.

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Special thanks to all of our 2012 industry sponsors!

The companies or agencies above have made donations or sponsored events of the Civil Engineering Department during the 2012 calendar year. There is still time if your company or agency is interested in sponsoring an event in the 2013 calendar year.

Mark your calendar now for next academic year's important opportunities to network with colleagues, get involved with the next generation of civil engineers, and support the Civil Engineering Department.

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