

CE CONNECTION

FALL 2012 | ISSUE NO. 9

Your Link to the Department of Civil Engineering



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SACRAMENTO STATE
Department of Civil Engineering



CHAIR'S MESSAGE



Dear Colleagues and Friends,

It is with great enthusiasm and optimism that I welcome you to this issue of CE Connection, our alumni newsletter. This column is my first as the new department chair, and I hope to use this space as a venue to let all of you know about accomplishments and upcoming events, as well as challenges facing the future of our program.

The former chair, Dr. Ramzi Mahmood, remains an active member of the faculty and director of the Office of Water Programs. I want to reassure you that he has not left the program but has decided to spend more time on his other endeavors. I also want to take this opportunity to publicly thank Dr. Mahmood for his significant contributions to the Department over the past nine years.

Budget Challenges

As we look into the future, I am optimistic about the trajectory of the program despite budget challenges and structural changes to the program. The CSU system, Sacramento State, and the College of Engineering and Computer Science are all faced with unprecedented budget cuts that have translated into fewer course offerings within the College of ECS and Department of Civil Engineering. Enrollment continues to be very strong in the Department, the strongest in the entire College of Engineering and Computer Science, as we have more student demand than we can satisfy. At the same time, we now have enrollment "limits" to accompany enrollment "targets." We have a "target" of students that are supported by the university and a "limit" of excess students that we can continue to accommodate before incurring a budget penalty by the University.

Curriculum Changes

Despite these difficult times, the Department faculty and staff continue to work hard to become more efficient while maintaining high-quality instruction. In the past year, the Department has removed six units from its total unit requirement, which now stands at 132 semester units. After receiving feedback from our industrial advisory committee and alumni focus groups, Circuits (Engineering 17) was eliminated as a major requirement from the program. Reinforced Concrete Design (Civil Engineering 164) has been reclassified from a required course to a design elective, and students are still required to complete two design electives out of three electives before completing the program.

On the cover...

As part of her master's thesis work, Amy Hopkins builds a wall that will be tested for earthquake-resistant sturdiness.

Read about this important research project on Page 8.



With additional unit reductions expected from university general education (GE) requirements, we hope to increase our efficiency as a Department and improve student graduation rates without sacrificing the high quality of instruction for which we are known. The goal remains to produce outstanding engineers that are able to compete in the workforce and fill the needs of the local civil engineering community in less time.

Closing Thoughts

In this issue of the newsletter, you will learn more about: this semester's CE 190 (Senior Design) class project, important student-based research projects such as the seismic wall research lead by Dr. Ben Fell, and news about our graduates and our alumni. Our graduates continue to do well and serve as leaders in the engineering community (see Alumni Notes on page 15 and the Alumni Spotlight on Rick Land on page 11).

Finally, I hope that you will make note of the upcoming "Evening With Industry" on November 8 (story on page 4). I am excited to be joined by many of our alumni and friends from local industry for this festive annual event.

As you can see, there is a lot to report and there are many reasons to remain optimistic about the future. The Department's response to the challenges ahead will determine our success. I truly believe that the future of the Department, and that of the College of Engineering and Computer Science, will be defined by the collective work that we do to preserve the quality of instruction and access by students. By acting in the best interest of our students and responding to feedback from our alumni and our industrial advisory committees, as well as the gifts from donors to the Department, we have all contributed to the current successes of the Department. As chair, I hope you will join me in continuing to build on those successes.

Sincerely,

Dr. Kevan Shafizadeh, P.E.



At the beginning of the semester, the Department held meetings with all Civil Engineering students to introduce them to the new Department chair, explain curriculum changes and answer any questions.

An Evening with AN INDUSTRY

Keynote Speaker to Focus On Central Valley Flood Risk

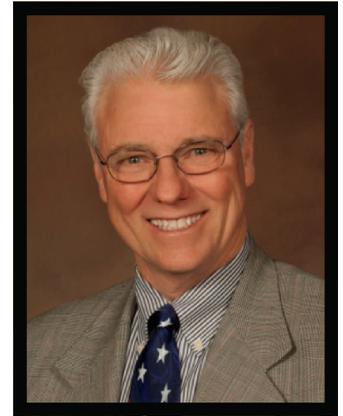
Last season may have been a dry year for California, but everyone recognizes that at some point torrential rains will return, as they have in the past. In fact, in August the Department of Water Resources began mailing flood risk notices to 275,000 property owners to make sure they understand just how vulnerable they are behind state and federal levees in the Central Valley.

Those notices and the recent adoption of a Central Valley Flood Protection Plan are just some of the steps that the state's flood experts have been taking to address the risk in the Central Valley. One of those experts, Joseph Countryman, PE, will provide an update on their activities at An Evening with Industry.

The evening is the Department of Civil Engineering's annual gathering that provides an opportunity for professionals and students to come together on campus. Mr. Countryman's keynote speech will be followed by an industry panel that will answer student questions. The networking segment of the evening allows companies and public agencies to set up displays that provide information to students looking for jobs or considering career choices.

Mr. Countryman, who retired from MBK Engineers in 2010 after 22 years, previously worked for the U.S. Army Corps of Engineers, where he began his career as a junior engineer in 1966 and rose to become chief of the civil design branch from 1983 to 1987. He was appointed to the Central Valley Flood Protection Board in April.

Joseph Countryman,
Central Valley Flood
Protection Board



In June, the Board unanimously approved the Central Valley Flood Protection Plan, which describes a comprehensive framework for improving public safety, ecosystem conditions and economic sustainability. In September, the Department of Water Resources and the Central Valley Flood Protection Board were recognized with an Award for Excellence by the Floodplain Management Association.

Sponsorship at An Evening with Industry, which costs \$300, can be arranged by contacting Neysa Bush by October 31 at nbush@csus.edu or 916-278-6982.

An Evening with Industry

When: 5:30-8:30 p.m., Thursday, Nov. 8

Where: Sacramento State Alumni Center

Sponsorship: \$300 (Oct. 31 deadline)

Contact: Neysa Bush, nbush@csus.edu,

916-278-6982



STUDENT INTERNS

Students Dig Deep to Find Internships Following State Cuts

An agreement between the State of California and public employee labor unions resulted in the elimination of about 1,800 student assistant positions across most state agencies in September. While the new policy interrupts a long history of Civil Engineering students beginning their careers with state internships, there are still a number of avenues for students to pursue to find work, according to Cici Mattiuzzi, Director of the Career Services Office for the College of Engineering and Computer Science.

“The Civil Engineering Department puts on so many great events, like An Evening with Industry, where students can meet people in the profession and establish a personal connection,” she says. “Students should also check with the Career Services Office. There is a tremendous network of alumni and people associated with Sacramento State, so we often hear about internships and jobs before anything is posted.”

It helps that employment opportunities at private firms are picking up as the economy improves and their workload increases, Ms. Mattiuzzi says – a trend that may include more private-sector internships. She points out



Students connected with internship opportunities last year at the annual **An Evening with Industry**. This year's event is being held on Nov. 8.

that internships benefit both students and employers. They give companies an edge in identifying top students, getting to know them in a work environment, and then attracting them to a full-time job once they graduate. Students often stick with a career path that begins with an internship.

The key for students is reach out to a large number of sources, both to look for openings and to let people who may hear about jobs, such as professors, know they are interested in working. Among the resources recommended by Ms. Mattiuzzi are:

▼ The Career Services Office website at www.career.ecs.csus.edu. This site has useful information on connecting with jobs. Students and alumni can post resumes for employers to view and employers can post

continued on page 6 ➔

➔ Continued from page 5

jobs for student and career positions. Job fairs and interview schedules are also found on this site.

- ▼ Indeed.com, a Google aggregator of job postings that allows a student to enter keywords, such as engineering intern, engineering student assistant and engineering graduate student to identify opportunities.

- ▼ State departments that may have suggestions for alternatives to student assistant jobs. For example, the Department of Water Resources is encouraging students to apply for Scientific Wildlife Aide positions.

- ▼ City, county and regional public agencies. For example, in early September the City of Elk Grove was looking for a waste/recycling student assistant.

“Engineers have the lowest unemployment rate of any discipline because these are essential services,” Ms. Mattiuzzi says. “If students do their homework, they will be able to find openings.”



Capstone Course Takes on DMV Rehab

This is the first in a series of articles about CE 190, the senior project class. Future articles will highlight the experience of both students and industry mentors.

No one crosses the stage at Sacramento State to pick up a bachelor’s degree in Civil Engineering without first completing CE 190, the class that challenges students in the final semester of the program to demonstrate what they have learned. Challenging by design, the course also offers immense benefits for students, including the possibility of an introduction that will lead to a first job or a defining moment in figuring out a lifetime career direction.

“CE 190 pulls everything together and requires the students to synthesize what they have learned,” says Dr. Matthew Salveson, PE, one of two professors who teach the course each semester. “The class is way beyond just defining and describing engineering processes. The students need to identify a solution, develop it, and then articulate what their solution is and why they have done whatever they have done. It requires a very sophisticated skill set.”

The class also benefits the alumni and industry professionals who participate as mentors, either role modeling as clients who define the parameters of the project or acting as technical experts who can advise students on the engineering details that will make a solution work for a specific project. Mentors get a front-row view of the up-and-coming talent that will soon be looking for jobs. They also stay connected to the academic world, where the latest research and new techniques are discussed and studied.

“The class would not be able to function without a huge amount of support in terms of time from local industry and alumni,” Dr. Salveson says. “We actually don’t have difficulty getting people to volunteer because a lot of them find it very satisfying. That doesn’t make us any less appreciative,

STUDENT FOCUS

because we recognize how fundamentally important they are to our success.”

Each semester, Dr. Salveson and Dr. Ed Dammel, the other professor who leads CE 190 classes, design an assignment based on a real project within driving distance of the campus. For Fall 2012, the project is planning the rehabilitation and seismic retrofit of the Department of Motor Vehicles headquarters in Sacramento. Although the real-life project has been completed, the two professors will change some of the design parameters to reinvent the project and give the students an opportunity to be creative.



Oral presentations by students are a highlight at the end of CE 190.

“These projects are designed to really push the students,” Dr. Salveson says. “They don’t get the assignment and instantly know how to do it all. They have to take the fundamentals they’ve learned, figure out how to apply them in a professional setting, and then deliver the project plan in a professional manner.”

Each class has about 30 students who will be separated into teams of five to seven students to take on different aspects of the project. One team might draw up a site plan, while another may do a geotechnical report. The final outcome at the end of the semester is an oral presentation plus a final general engineering report that integrates all of the issues raised by the project.

Sometimes the chosen project has a strong structural engineering component, while other semesters the project may focus on transportation, water treatment or another facet of civil engineering. Student preferences help guide how teams are created so that most are working in areas that interest them.

“Every semester, even though the students seem overwhelmed at the start, we have teams that deliver truly professional-grade products,” says Dr. Salveson. “Dr. Dammel and I are always blown away by the work they do.”

““ These projects are designed to really push the students... They have to take the fundamentals they’ve learned, figure out how to apply them in a professional setting, and then deliver the project plan in a professional manner. ”” — *Dr. Matt Salveson*



SEISMIC PROJECT

Earthquake Research May Shake Up Construction Methods

Years from now, houses in earthquake-prone California may be built with a “unibody” method that takes advantage of gypsum sheathed walls for greater strength. If it happens, a Sacramento State professor and two students will know that their research played a role in changing construction methods in a major way.

Their part of the research is the initial phase in a multi-year project, so they cannot be certain the end result will be what they expect. However, that’s not uncommon when it comes to research, where theories are tested, modified and refined, depending on the results.

No matter what eventually happens, graduate student Amy Hopkins and senior Max Hardy are delighted that Dr. Benjamin Fell, PE, invited them to be part of the project, which is being funded with a \$1.2 million grant from the Network for Earthquake Engineering Simulation (NEES), a subsidiary of the National Science Foundation (NSF). The project teams Sacramento State with Stanford University in a multi-phase testing program at Sacramento State, UC Berkeley and UC San Diego to expand upon a study conducted at Stanford University over the previous two years on smaller experimental specimens.

“Since I’m interested in structural engineering, this is a great opportunity to do a master’s thesis that is very practical and meaningful,” says Amy, who has been busy for the past year organizing the project, designing a testing



Amy Hopkins, left, and Max Hardy work on their test structure.

rig, and gathering data that she will analyze and write about in her thesis. “It’s very exciting to take something from the design phase, make it real, predict what will happen when you break it, and then tell why it happened.”

Max, who had an early career in construction before deciding to attend college for a civil engineering degree, joined the project six months after Amy got started. Although in some ways she is his mentor, both see their work as a solid partnership.

“I’m doing a lot of the construction, but also some of the data analysis,” Max explains. “It’s really interesting – because I’ve had so much construction experience, I can provide some insight into how these ideas might be implemented in the field.”

“These ideas” include improving how gypsum board is attached to wood and steel framing by using enhanced screw connectors or possibly adhesive; using stronger joint taping at wall corners and wall/ceiling connections; using stronger/more ductile gypsum board; and using supplemental tie-downs at wall ends and openings to resist uplift forces.



Amy and Max are using these methods as they construct walls. They put them to the test with a loading rig that replicates quake pressure on structures and then measure the results. In February 2013, the experiment will move to UC Berkeley where full-sized rooms will be built and tested. Then in April 2014, UC San Diego will begin its part of the experiment, constructing a two-story house on a shake table.

Professor Fell says the initial experimental and analytical work at Stanford was very promising. He likened it to the shift in the automotive industry from a chassis-mounted design to a much more durable unibody construction.

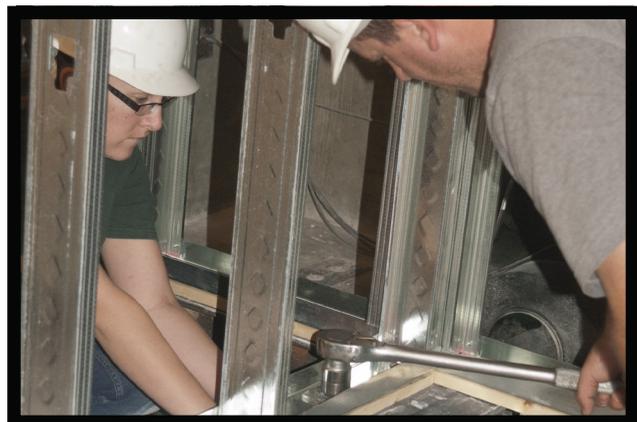
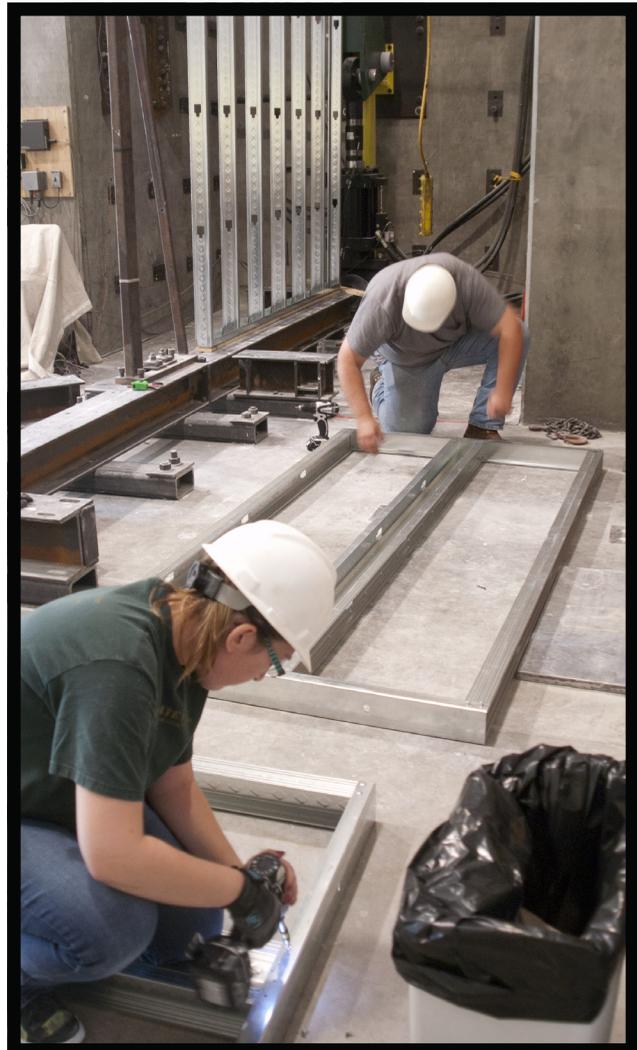
“There is substantial evidence this approach has tremendous merit,” he says. “The design methodology may result in additional construction costs, but they should be minor, especially when compared with savings on insurance premiums in high seismic areas. If it works as we expect it to, this may change the design of residential structures in seismic regions in the years ahead.”

It is already changing the college experience for Amy and Max.

“We are working on an idea that doesn’t follow today’s building codes, and we have the opportunity to test this new approach to see if it works,” Amy says. “We are the point of the spear, and we will be passing on our research to others who will try to duplicate it. Eventually, if we prove the concept, other individuals will figure out how to implement it.”

The unibody construction research is the second grant-funded project that Dr. Fell has secured for Sacramento State. The other involves testing the impact of earthquakes on steel structures. He has also involved students in that project. For Max, those are the kinds of opportunities that make the Civil Engineering Department stand out.

“I think one of the key things is that Sacramento State is right in there with Stanford and UC Berkeley,” says Max. “It just demonstrates that we have a premier program with many opportunities for students who are passionate about civil engineering to do serious work. There is so much that students can do – I love it here!”



FACULTY UP CLOSE

Professor Karen Hansen

When Dr. Karen Lee Hansen, DBIA, took a sabbatical last spring to collaborate on sustainability research in the United Kingdom, she was returning to familiar territory. Shortly after completing a doctorate in Civil Engineering at Stanford University in 1993, she spent three years at Scottish and English universities as part of a National Science Foundation (NSF) Post-Doctorate Research Fellowship and as a Senior Research Fellow on Engineering and Physical Sciences Research Council (EPSRC)-funded investigations.



This time, besides her meetings with academics and industry professionals, high on her list of priorities was a visit to the Institution of Civil Engineers (ICE). There, she discovered that her work had preceded her.

“The ICE is a venerable institution that was established in 1818 and is currently located in London, one block from Parliament,” she explains. “When I met with ICE Director General Nick Baveystock, he began our conversation by saying his staff regularly prepares a list of books for him to read, and that the book I coauthored with adjunct professor Kent Zenobia was not on the list – because he had already read it! To know that our book has resonated with both the ASCE and ICE is truly gratifying!”

The book, *Civil Engineer’s Handbook of Professional Practice*, was published in April 2011 jointly by John Wiley & Sons and the ASCE Press and has been praised for helping students to gain mastery of the business

side of civil engineering, including skills in project management, teamwork, ethics, leadership and communications.

“Our single-source guide is the first to take the practical skills defined by the ASCE’s Body of Knowledge 2 (BOK2) and provide illuminating techniques, quotes, case examples, problems and information to address the many challenges facing civil engineers in the real world,” Dr. Hansen says.

The book was inspired by her interactions with students at Sacramento State, where she has taught since 2004. A former engineering manager for The Boeing Company, she came to the university following more than 25 years of experience in industry, including work with a variety of organizations spanning from Bechtel and the City of Los Angeles to the Tokyo Institute of Technology and Ecole Alsacienne in Paris.

Her research and teaching focus is on the professional practice of civil engineering and construction management, as well as sustainability and innovation. In addition to her doctorate, she holds a bachelor’s degree in architecture from UC Berkeley and a Master’s degree in Construction Engineering and Management from Stanford. She is a Certified Design-Build Professional (DBIA), as well as a member of the America Society of Civil Engineers (ASCE) and the American Institute of Architects (AIA).

Dr. Hansen was familiar with the capital city long before she joined the faculty at Sacramento State. A fifth-generation Californian, she graduated from high school in Sacramento. Her interest in engineering came naturally – her mother was the only woman in UC Berkeley’s 1944 graduating class of engineers.



ALUMNI SPOTLIGHT

Richard Land: 2nd in Command at Caltrans

When Richard Land, PE, was named Chief Deputy Director of Caltrans this summer, he could look back on more than three decades with the department that oversees California's transportation system, including more than 50,000 miles of roads. During that time, he spent 25 years in the Divisions of Structures and Engineering Services, heavily involved in design and construction management of the State's major infrastructure projects.



He began his career at Caltrans in 1978, soon after receiving his bachelor's degree in Civil Engineering from Sacramento State. It's been a long journey in a single state agency – and not one that he anticipated when he started thinking about careers in high school.

"At first, I thought I wanted to be a math teacher," he remembers. "But there was an elective class in high school in basic surveying. I realized how much I enjoyed applying math to practical things like surveying, so that's what led me to civil engineering."

Even then, he might have ended up at the Bureau of Reclamation instead of Caltrans. As a Sacramento State student, he worked on survey crews for the Bureau mapping the future foundation of the never-built Auburn Dam. When it came time to graduate, however, the Bureau could only promise him an intermittent job. PG&E had an opening for a field engineer at their geyser fields, but he discovered a career with the public utility would probably mean frequent moves around the state.

Caltrans looked appealing compared to his other options, so he became a junior civil engineer in Marysville. A year and a half later, he accepted a Sacramento assignment and never looked back. From 2001 to 2005, he was Chief of Statewide Structure Design and the Caltrans State Bridge Engineer. Since that time, he has taken on progressively more responsible leadership roles, including becoming the Caltrans Chief Engineer in 2005 and then the Acting Chief Deputy Director in 2011.

"I've had a different position with a different focus about every five or six years throughout my career," he explains. "Caltrans is a large organization with plenty of opportunities – I've really enjoyed the many different assignments."

continued on page 12 ➔

“ California has a lot of significant infrastructure challenges – transportation, water, power generation, waste treatment – so the state will need plenty of dedicated, talented engineers ”

— Richard Land, P.E.

Construction Management Becomes Separate Department



Construction Management, which has been a major offered in the Civil Engineering Department since 1972, is now operating as an independent department within the College of Engineering and Computer Science. Professor Mikael Anderson has been selected by his colleagues as the inaugural chair for the department.

The new department status allows the program to work more closely with industry and leverage resources to support professors and enhance the student experience. The curriculum will remain the same, and the business administration minor attached to the Construction Management major will continue to be available to students.

“The construction industry and alumni from the program have played a large role in the success of Construction Management at Sacramento State,” Professor Anderson says. “Since 2003, the Sacramento Construction Management Education Foundation has given industry a way to contribute to the program. We’re very grateful to the Foundation for raising the necessary funds to support the establishment of the Construction Management Department.”

Dr. Kevan Shafizadeh, chair of the Civil Engineering Department, says the transition is going smoothly because the Construction Management Program was already acting independently, with its own courses, curriculum and accreditation requirements. One change is that Dr. Karen Hansen has been granted a joint appointment in both departments.

“We wish the Construction Management Department well in its independent endeavors!” Dr. Shafizadeh says. “Civil Engineering and Construction Management will continue to work together on common goals, such as increasing the visibility of its programs to the surrounding engineering community.”

➔ Continued from page 11

The variety of opportunities that a civil engineering career offers is one of the things that Mr. Land advocates students should explore by becoming active in student chapters of national organizations, such as the American Society of Civil Engineers (ASCE).

“Student forums and activities can put them in touch with industry representatives and leaders, which will allow them to broaden their perspective of the profession and the opportunities within the profession,” he says. “And then they should stay active in the profession. As State Bridge Engineer and Chief

Engineer, I served on many national committees, and I have participated in ASCE leadership forums – and it’s been an important part of my career growth.”

As a member of the Industry Advisory Board for Sacramento State’s College of Engineering and Computer Science, Mr. Land has also been active in encouraging a focus on attracting students into the profession.

“California has a lot of significant infrastructure challenges – transportation, water, power generation, waste treatment – so the state will need plenty of dedicated, talented engineers,” he says. “We should do whatever we can to promote an interest in engineering and science. That’s why it’s important for alumni to stay involved with Sacramento State.”



NEWS & NOTES

Students

Traffic Bowl...

Sacramento State sent a team to compete in the Traffic Bowl at the Institute of Transportation Engineers (ITE) Western District 2012 Annual Meeting in Santa Barbara in June. The team competed against universities from around the western United States and placed 5th out of 15, a strong effort considering that many other teams also included graduate students. At the conference, students also attended technical presentations, field trips, and networking events.



Pictured left to right are Troy Adams, Russell Oyewole, and Joel Thornsberry.

Faculty

Transportation Workshops...

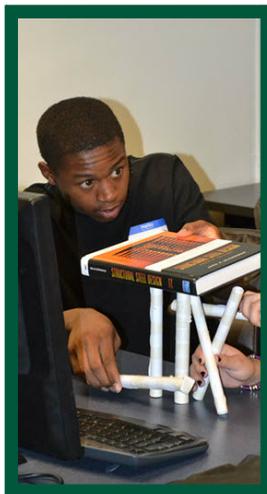
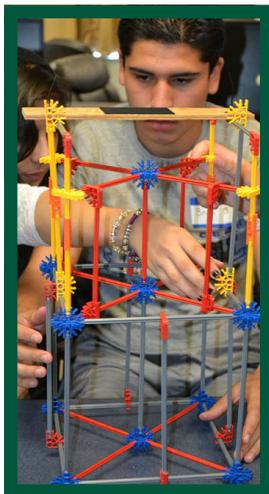


During the summer, Dr. Kevan Shafizadeh attended two noteworthy and unique transportation engineering workshops for faculty. The first workshop was a two-day meeting devoted to innovative bicycle and pedestrian practices and how to incorporate them into an existing transportation curriculum. Of the full-time faculty from around the country who applied to participate, less than a dozen were invited to the workshop. Held in Portland, the workshop included a field tour of innovative bicycle treatments around Portland, led by a faculty member at Portland State University and a city traffic engineer. Dr. Shafizadeh's attendance at this workshop was funded by a grant from the Center for Transportation Studies' Initiative for Bicycle and Pedestrian Innovation at Portland State University.

The second workshop, held at the University of Washington in Seattle, was devoted to full-time faculty who teach a required introductory course in transportation engineering, such as Sacramento State's CE 147 (Transportation Engineering). This workshop, attended by approximately 50 full-time faculty from around the country, was an opportunity for faculty to discuss common issues related to this fundamental civil engineering course. The focus was on developing hands-on, active learning modules to address common concepts in the course. Dr. Shafizadeh's attendance at this workshop was partially funded by a grant from the National Science Foundation.

Summer School...

For the second summer, Dr. Benjamin Fell conducted a workshop to expose K-12 students to the field of earthquake engineering. Last year, junior high students participated. This year, sophomores from McClatchy High School learned about the difference between flexible and stiff structural systems during earthquakes and the advantages of using a diagonal bracing system. Hands-on activities included building paper structures to support a stack of books and making a K'Nex structure that could withstand a shake table test.



Alumni

2012

David P. Harden, BS, has been employed by Bennett Engineering Services as a project engineer since graduating in June. Among the interesting projects he has worked on are upgrading three small diversion dams and the intake structures for the Placer County Water Agency.

2007

Arianna Raymundo, BS, who has been working for the U.S. Army Corps of Engineers Sacramento District since graduating in Fall 2007 and who began the CSUS master's degree program in 2009 on a part-time basis, reports in from Afghanistan: "After completing the master's degree coursework, I decided to take a break and to take advantage of a career opportunity while the timing was right. I deployed to Afghanistan in July 2012 to work as a Project Engineer for the USACE Afghanistan Engineer District. The experience has been wonderful. This is my first time overseas, and working in a field office has been a very challenging and rewarding experience. I definitely credit my involvement in professional organizations—through my college days and into my early career—for having the ability/desire to assimilate into new work assignments and to jump at new opportunities. Before deploying, I interviewed for and landed a new position. When I return to the USACE Sacramento District, I will be working on the Folsom Auxiliary Spillway project."

1962

Ellis J. Jones, BS, PE, GE, who has started two successful companies and "retired" twice, continues to work part-time as a consultant to his last firm. He provided this rundown of his long career: "While attending Sacramento State, I was employed by the Bridge Department, California Division of Highways, now known as Caltrans. After graduation, I continued working for the Bridge Department as a bridge design engineer and performing oversight of bridge construction projects in Sacramento, the San Francisco Bay Area and San Diego. In 1971, I left government service to join a nationwide consulting engineering firm, rising to executive positions and serving as Managing Officer of its Las Vegas and San Francisco offices. In 1982, I was co-founder and subsequently President of a Southern California geotechnical and environmental engineering firm, which grew in size to over 100 employees. Upon sale of the firm to an international consulting company, I retired and traveled extensively.

In 1993, after leaving retirement, I joined a nationwide consulting engineering firm and served as manager of special projects. In 1996, I was co-founder and President of a geotechnical and environmental engineering firm in the Southern California area. I continued as President until semi retiring in 2005. I continue as a consultant to the firm on an intermittent and part-time basis.

I have been a Registered Civil Engineer for over 49 years and a Registered Geotechnical Engineer for over 20 years. My wife, Eugenia, and I have been married for over 55 years and have a daughter, a son and two grandchildren."

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