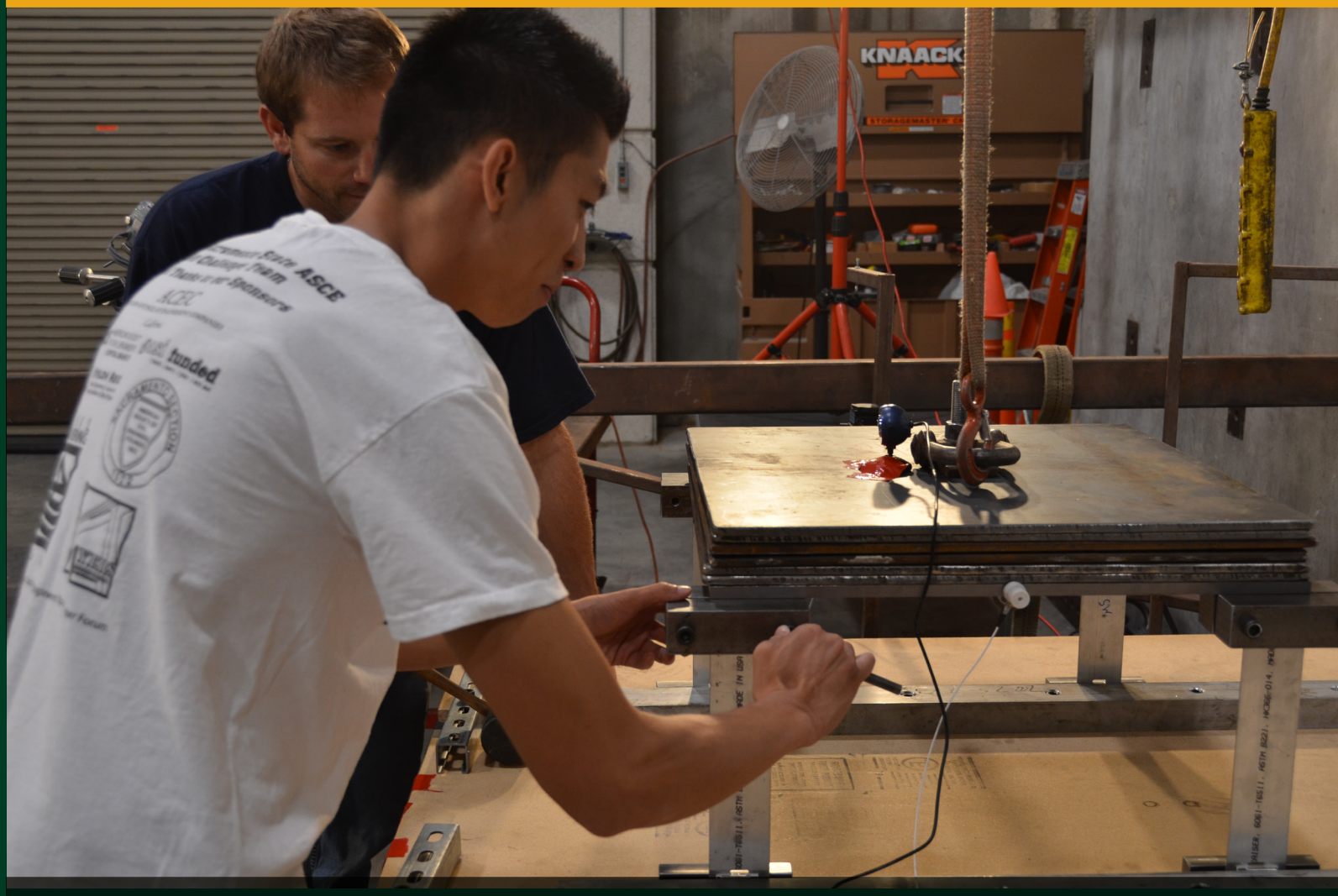
# CE CONNECTION

Fall 2011 | Issue No. 6

*Your Link to the Department of Civil Engineering*

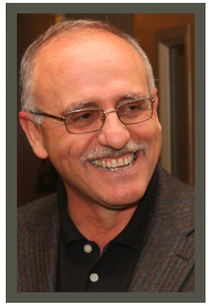



## Inside



Sacramento State
Department of Civil Engineering

# Chair's Message



## Dear Colleagues and Friends,

The 2011-12 academic year is underway. Our classes are full and our enrollment continues to be strong. As I watch faculty and staff work together to get our year off to a good start, I am reminded of how much teamwork is involved in our success.

As you know, teamwork is an important aspect of engineering practice – in fact, it is an important aspect of any human endeavor to accomplish goals. For the Civil Engineering Department, both internal and external teamwork comes into play as we work toward accomplishing our goals.

Externally, the Department has been actively pursuing its goal of connecting to the community by organizing our Evening with Industry, the Ken Kerri Endowment Luncheon and Alumni Week, and publishing our CE Connection newsletter. Our aim is to keep the Department active and visible so our students can seize opportunities to interact with the professional community and enhance their educational experience as they pursue their Civil Engineering degrees.

Each of these activities is accomplished by teams that organize and bring the events to reality. Our teams include staff and faculty from the Department, staff from the University, and the members of our two advisory committees, the Civil Engineering Program Industrial Advisory Committee (CEPIAC) and the Environmental/Water Resources Advisory Committee (EWRAC).

Of course, these events would not be possible without strong community support. And this is where you come in. If you want to become part of our team, you can become involved by:

1. **Participating in one of the advisory committees**
2. **Becoming a guest speaker during Alumni Week**
3. **Serving as a client or mentor involved with our senior projects**
4. **Thinking of opportunities that can benefit our students (internships, tours, specialty workshops, etc.)**

If you are interested in helping in any way, please contact me directly at (916) 278-7375 or via email at **ceconnect@ecs.csus.edu**. One way to get started is to encourage your organization to become a sponsor of the upcoming Evening with Industry event, which is covered in detail in this newsletter.

Please keep in mind that at Sacramento State, our strength as an academic program is derived from the strength of our alumni and industry support; it is a team effort. The Department would love to hear from you and any suggestion you have to improve our outreach program.

Sincerely,

*Ramzi J. Mahmood*

# An Evening with Industry

## Keynote Speaker to Provide Folsom Spillway Update

When Col. William J. Leady became commander of the Sacramento District for the Army Corps of Engineers last fall, he inherited a flood control project that was finally getting underway to add another spillway to Folsom Dam. A $126 million contract for the project, authorized by Congress in 1999, was issued in mid-2010.

Col. William J. Leady

Writing about it in the Fall 2010 edition of The Prospector, a Corps publication, Col. Leady noted that the project is important to both the region and the Corps' Sacramento District.

"For the region, it will improve our ability to manage water during high-water events," he wrote. "And for the district, this massive project is a great opportunity to build the team and pass on experience from one generation of professionals to the next."

The Civil Engineering Department has invited Col. Leady to bring that hands-on-learning perspective to An Evening with Industry, the annual fall event that brings professionals and students together to network and hear from prominent engineering leaders. The event is from 5:30 to 8 p.m. on Thursday, November 3 in the Sacramento State Alumni Center.

Col. Leady, who holds a bachelor's degree in mechanical engineering from the U.S. Military Academy and a master's degree in environmental engineering from Purdue University, will provide an update on the spillway project. A registered professional engineer in Virginia, the colonel has been deployed in Iraq, Afghanistan, Somalia and Haiti. Before becoming leader of the Sacramento District, he was commander of the Detroit District and was deputy commander of an engineering brigade at Fort Lewis, Washington.

His keynote speech will be followed by an industry panel that will take student questions. The networking segment of the evening allows companies and agencies to set up displays that provide information for students looking for jobs or considering career choices.

### An Evening with Industry

**When:** *5:30-8 p.m., Thursday, Nov. 3*

**Where:** *Sacramento State Alumni Center*

**Sponsorship:** *$300 (Oct. 31 deadline)*

**Contact:** *Neysa Bush, nbush@ecs.csus.edu, 916-278-6982*

The Folsom spillway project

## Students Take Advantage of Bay Bridge Tour

Commuters who cross the Bay Bridge each day are most concerned about when construction finally will be completed on the multi-billion-dollar seismic retrofit project that has been underway for several years. But civil engineers see the project as a complex and fascinating undertaking that has combined innovation and tested techniques to protect this vital transportation link when the next earthquake hits the San Francisco Bay Area.

Two Sacramento State students, Justin George and Drew Taylor, recently joined one of the Caltrans tours sponsored by the Sacramento Section of the American Society of Civil Engineers (ASCE) for an up-close look at the engineering aspects of the massive project. Both are juniors in the Civil Engineering Department and interns at the Office of Water Programs.

"I went because I thought it would be very interesting and provide a perspective on the construction that not many people get to see," Justin says. "They knew we were engineering students, so this wasn't a watered-down presentation at all. They talked in detail about the seismic retrofits and the innovative design for the new east span from Oakland."

Drew, who acknowledges that structural engineering is not his primary study of focus, was particularly interested in all the different aspects of engineering that come into play on such a huge project.

"It was amazing," he says. "There were all of the structural elements, but also the environmental aspects and how they dealt with the animal habitat under the bridge. I learned so much about this project that I hadn't even suspected was involved."

The three-hour tour, which is offered by Caltrans for groups upon request, begins with a talk about the scope and goals of the project, including a slide presentation on the various seismic retrofit measures being implemented. Then attendees board a barge and move into the San Francisco Bay for a close look at the self-anchored suspension tower and spans, the superstructure and columns for the new bridge section, and the temporary bypass structure.

# Student Focus

## Quake Internships Include Presenting Research in Buffalo

Professor Fell and student John Tran at the shake table

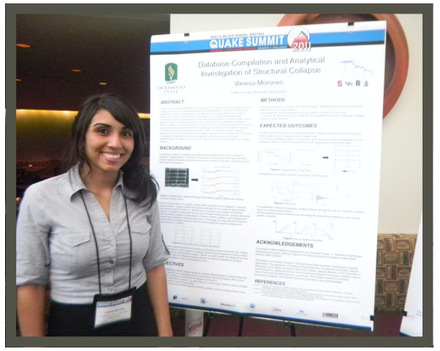
Complex, multi-institution research projects are often the launching pad for master's theses and doctoral dissertations. Most undergraduate students have little opportunity to participate.

This past summer, however, two Sacramento State Civil Engineering undergraduates joined Professor Benjamin Fell for internships that not only gave them significant experience in research and analysis but also led to a poster presentation at a conference in Buffalo. Both Vanesa Morones and John Tran say they found the experience eye-opening and valuable, as they met with experienced researchers, expanded their capabilities, and contributed to a National Science Foundation-funded study.

The internships were part of a study being conducted by a consortium of universities on the impact of earthquakes on steel structures. Two years ago, Professor Fell, whose doctoral dissertation was on fatigue and fractures in steel structures during earthquakes, was invited to bring Sacramento State into the consortium, which includes Stanford, the University of New Hampshire, and SUNY Buffalo.

During the summer, Vanesa and John worked together to analyze the collapse behavior of structures responding to different types of earthquake impacts, including steady, low-pulse ground motion and short-duration, high-amplitude ground motion. Vanesa manned the computer, creating a database and analyzing different characteristics of collapses related to building properties and types of motion. John designed models of buildings with different stability coefficients and tested their failure patterns on a shake table.

Both contributed to a poster they presented during a poster session at the Quake Summit conference in Buffalo, where the two met many of the other researchers on the project. As part of the conference, they also attended presentations




Vanesa Morones with her poster

that helped them understand the breadth of the research that is underway.

Vanesa, who will graduate with her Civil Engineering bachelor's degree in December, has worked as a student engineering assistant at the Department of Water Resources (DWR) for the past two years. She arranged for a leave from that job when the earthquake study internship became available.

"I wanted to do something different that would expand my knowledge, and this was a great

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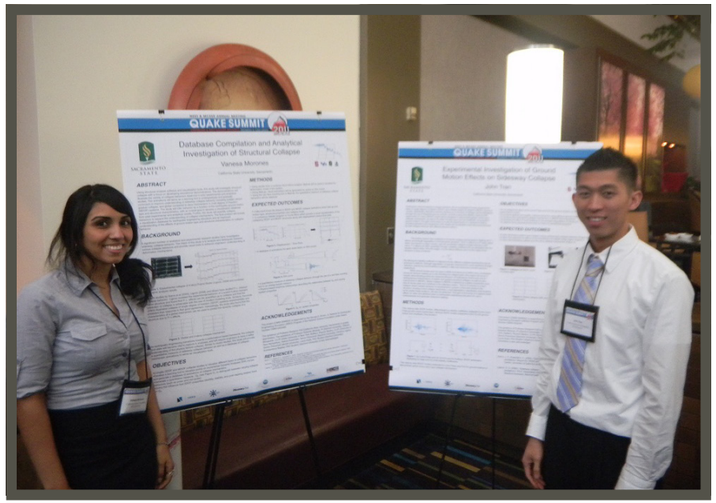
# Student Focus

## Quake Internships Continued...

opportunity," she says. "When you go out into the workforce, you need more than 'book smarts.' You have to have hands-on experience, and this was definitely a project that went far beyond what you are exposed to in class. It really helped prepare me for what I will face in my career."

Vanesa is still determining the direction that career will take, since she is interested in all aspects of civil engineering. After graduation, she plans to begin the master's program at Sacramento State while continuing to work at DWR.

For John, the summer was his first experience with an internship that required him to take responsibility for figuring out exactly what needed to be done, and then doing it. Guidance and mentoring from Professor Fell gave him the confidence to master the information in theses and dissertations that normally would have been beyond him.

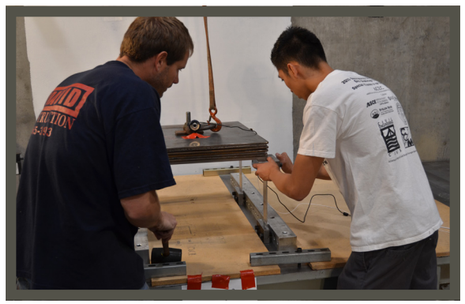



Both Vanesa and John presented posters in Buffalo

"Much of the research we were doing was at the level you normally see for master or doctoral degrees," John says. "Even though I had taken a seismic behavior of structure class, this went well beyond that. It was very challenging but slowly, as I dug into the research, I really began to understand what we were doing."

John adds that it was particularly helpful to meet with professors and researchers in Buffalo, who were less intimidating and much more welcoming of questions and conversation than he had expected. It was also the kind of networking opportunity that may help shape his future plans, which include enrolling in an MBA program and opening his own engineering firm one day.

Professor Fell, who praised the work performed by both Vanesa and John, is continuing his participation in the earthquake study consortium and expects to offer internships again next summer.



Some of the research was conducted on the Department's shake table

# Faculty Up Close

## Seminar Sharpens Teaching Skills

Lecturers who teach part time in the Civil Engineering Department add valuable expertise to the program. However, many of these adjunct professors may have less classroom experience than tenured faculty, and little opportunity to pick up the tricks of the trade that can make teaching more effective for students.

The solution was to bring a one-day version of the widely praised ExCEEd program to Sacramento State last summer. ExCEEd, which stands for Excellence in Civil Engineering Education, is a six-day summer boot camp sponsored each year by the American Society of Civil Engineers (ASCE). Five Sacramento State faculty members have gone through the program, and Professor Matt Salveson takes part each summer as an assistant mentor.

"We wanted to do a very condensed version of ExCEEd, selecting the most critical items that could be covered in eight hours," Professor Salveson says. "We invited all adjunct faculty, and more than a dozen came."

Full-time CE faculty and ExCEEd alumni presented different topics during the day, including ways to establish rapport with students, how to design a lecture for effective learning, and how to use board work to support lessons, among other topics.

The overall goal was straightforward: improve the quality of education for students. Salveson says the seminar not only provided part-time faculty with tools that they could put to immediate use, but also established a cohort of ExCEEd-trained faculty and lecturers who can network, share ideas and support each other to become better teachers.

One of the attendees was Peter Ouchida, an adjunct professor since 1982 who teaches CAD classes. He found the seminar well worthwhile and is already incorporating some of the practical tips in his classrooms.

"[The workshop] helped me focus on my teaching style and adjust it to fit in with the teaching culture that has developed in the Civil Engineering Department at Sacramento State," he says. "The presenters really knew the concepts they were covering and had used them in their classrooms, so they could answer questions at a practical level. It was very well organized and covered really useful topics."

Based on feedback from the attendees, Professor Salveson hopes to organize the day-long seminar again next summer.

# Alumni Spotlight

## Ed Nicholson: Transferring Skills to the Next Generation

Ed Nicholson, S.E. (BS '82, MS '86), has empathy for students graduating with their civil engineering degrees today. As a 1982 Sacramento State graduate, he knows what it is like to hit the job market when the economy is in the grip of a recession. His first post-college job was at Toys "R" Us.

His advice to students? Be patient. It may take time to find a job, but sooner or later one will open up, as it did for him. Now, 28 years later, he has both worked for others and made a success of his own business for the past 14 years. In addition, he is very involved in activities that will help the next generation of civil engineers develop their skills.

"If you look at the big picture, it's a great career," Mr. Nicholson says. "Hiring is very slow right now, but the jobs will come back – engineers are always needed."

> **"If you look at the big picture, it's a great career... Hiring is very slow right now, but the jobs will come back – engineers are always needed."** — *Ed Nicholson*

Rather than get discouraged, Mr. Nicholson used his time at Toys "R" Us to return to campus to begin working on a master's degree. When David A. Crane & Associates brought him onboard about six months later, he was able to work out a part-time schedule that allowed him to complete his master's degree in 1986.

By 1991, he had his Structural Engineering (SE) license in hand and a new job with Cole/Yee/Schubert & Associates. He worked on a variety of projects, including the women's prison facility in Madera. And he became heavily involved in the Structural Engineers Association of California, serving as president for the Central California branch in 1997-98.

With significant experience behind him and a wide range of contacts in the industry, he decided to go out on his own. He opened Edwin J. Nicholson Structural Engineer in 1997.

"Because of the great instructors I had at Sacramento State and the mentoring I received at my first two jobs, my technical skills were excellent," he says. "Times were good, and there was a lot of work available, and I felt opening my own business would give me more flexibility and different kinds of opportunities than continuing to work for someone else."

About the same time, he returned to the Sacramento State campus, first getting involved in senior projects as a client and then guest lecturing in classes on different topics, including concrete design. He helped form the Civil Engineering Program Industrial Advisory Committee (CEPIAC) in 1998, and has served on the structural advisory group that is a subset of CEPIAC. He stills serves on both and lectures every semester.

His commitment to investing time and energy in the Civil Engineering Department may seem unusual for someone in a one-person firm – after all, no one is "back at the office" to keep projects moving along when he is on campus. But Mr. Nicholson sees it as an opportunity to fulfill his obligation to the next generation of engineers.

"Students graduate feeling that they have learned a lot and they have, but the real way you learn is from old-timers on the job," he says. "Engineering as a profession is based upon teaching your skills to the next generation. Since I don't have any employees, I am happy to have the opportunity to help young engineering students progress within the industry."

One of that next generation will be his youngest son, who is studying civil engineering in college. He also has two other adult children and a grandson. Mr. Nicholson's wife, Cindy Long-Nicholson, stays involved with Sacramento State part time as well, teaching in the Kinesiology Department.

## Department Gathers ASCE Local Awards

A Sacramento State professor, three students and several alumni were among the recipients of the annual American Society of Civil Engineers (ASCE) awards for the Sacramento area this fall. They all were honored at a banquet in September.

Dr. Benjamin Fell received the Jonathan Burdette Brown Education Award for his role as faculty advisor for the campus chapter of ASCE during the year that Sacramento State hosted the Mid-Pacific Regional Conference.

Three students who were leaders in Mid-Pac activities also won awards. Current student Jeremy Herbert and recent graduate Jaimie Davis (BS '11), who now works at Dokken Engineering, played leading roles in organizing the annual conference and competition. They shared the Thomas A. Stanton Outstanding ASCE Event award. David Harden was honored as the Outstanding Civil Engineering Student. He was a co-leader of the water treatment team, which competed at both the regional and national levels.

### Other winners included several Sacramento State alumni:

- ***Alan Rozier, PE (BS '86), The LPA Group, Outstanding Civil Engineer in the Private Sector***
- ***Pamela Creedon, PE (MS '79), Central Valley Water Quality Control Board, Outstanding Civil Engineer in the Public Sector***
- ***Joyce Copelan, PE (MS '96), Caltrans, Joseph W. Gross Outstanding Humanitarian Achievement***
- ***Josh Wagner (BS '09), U.S. Army Corps of Engineers, Drury Butler Section Officer of the Year***
- ***Kit Miyamoto, PhD, PE, SE (MS '97), Miyamoto International, Frederik W. Panhorst Structural Engineering Award***

**Left to Right: Visiting scholar Dr. Hani Fahmi, Josh Wagner, Professor Ben Fell, David Harden, Jeremy Herbert, and Professor Ramzi Mahmood.**

# NEWS & NOTES

## Students

### Transportation Students Travel to Alaska…

Three student members of the Institute of Transportation Engineers (ITE) Student Chapter at Sacramento State joined Professor Kevan Shafizadeh at the ITE Western Regional Conference in Anchorage, Alaska in July.


Students Marvin Marshall, Darren Nguyen, and Mrudang Shah participated in the Kell Student Competition, which this year combined the video game "Guitar Hero" with video vehicle detection, and Traffic Bowl, a Jeopardy-style trivia competition. They also attended technical presentations by practicing transportation professionals. Marvin, who works as an engineering assistant for the City of Sacramento Department of Transportation, was awarded a scholarship to attend the conference through the professional Northern California Section of ITE. Professor Shafizadeh presented research findings from a study with civil engineering graduate student Mahesh Pandey which analyzed the traffic and safety impacts before and after the installation of Sacramento State's new digital billboard adjacent to Highway 50.

### Oklahoma Concrete Research…

Student Bryan Rinde participated in a structures research project at the University of Oklahoma over the summer. The project analyzed the behavior of a six-million-gallon shrinkage compensating concrete water tank. The research involved analyzing the results from monitoring 10 vibrating wire strain gages that were installed in the tank before concrete was poured. The tank was being constructed in Springfield, Illinois.

### CM Student Cycles to Success…

Construction Management student Matthew Obregon had two goals for the summer: secure an internship and perform competitively in cycling races. He achieved both, interning at Syblon Reid and participating in a half dozen races that covered between 30 and 100-plus miles. Earlier, he placed sixth in the 2010 Collegiate Cyclocross Nationals, riding for Sacramento State. His best performance for the summer was eighth in the 100-plus-mile Burlingame Criterium as a Professional/Category 1/2 cyclist. Matthew also raced as a Pro/1/2 in the Dunnigan Hills Road Race, the Leesville Gap Road Race, the Sierra Nevada Criterium, the Golden State Criterium and the Coopertown Circuit Race. Matthew is sponsored by Team Bicycles Plus/Sierra Nevada in Folsom.

## Alumni

### 2011

**Katie Oliver**, a 2011 graduate, reports on her success in finding a job after graduation. "I was lucky enough to meet the CEO of Clean World Partners at a Tau Beta Pi Green Tech Mixer on campus last April and was offered a job after graduation as an environmental engineer for the company.

"Working for a small, private company, I've been thrown into a diverse, fast-paced work load that has made me appreciate classes like environmental engineering, thermodynamics and circuits, which at the time I thought would never be directly applicable to me in my career. I feel especially excited to be working in the 'green tech' industry. I wasn't sure if a civil engineering degree would have a strong enough environmental background to allow me to work in that field straight out of college, but I realized while talking about my hands-on experiences in Senior Project and the Environmental Lab during my interview that the program had given me the tools to be a competitive candidate for a wide range of jobs."

### 2010

**Ramon Medina**, EIT, who completed his bachelor's degree in Fall 2010, has been hired by PG&E as an Associate Gas Engineer in Walnut Creek. He earned his EIT in May 2011. He lives with his family in the East Bay, where he coaches his daughter's U10 Girls soccer team.

**Ramon Ruiz**, a Fall 2010 graduate, has turned his long-time internship into a state job, despite a hiring freeze. He reports on the process: "After graduating, I applied for all Water Resource Control Engineer positions that were posted on the State Personal Board website for the State Water Resources Control Board (WRCB) only. I knew I wanted a career in water resources engineering and that I wanted to stay at WRCB. Although there was a state hiring freeze, I noticed that jobs were slowly being posted. "The Division of Water Rights was eventually granted some exemptions for their enforcement section…I applied, interviewed, earned a high enough score in the interview process, and was eventually offered a full time position with the Division of Water Rights." He adds that what seemed to make a difference was his experience that he gained as an intern and his focus on making a good impression with the people he worked with while he was a student.

### 1990

**David Yatabe**, a 1990 graduate, is a registered traffic engineer and is currently working for Willdan Engineering as traffic engineer for the City of Elk Grove. He, his wife, Debbie, and their children have lived in Vacaville since 1988. His daughter, Jennifer, is in her first semester at Sacramento State, majoring in kinesiology. His son, Keith, is a high school sophomore.

### 1981

**Marco Palilla**, P.E., a 1981 graduate, reports in on the 30th anniversary of graduating from Sacramento State with his bachelor's degree. "I went on to get my CE master's degree in 1985 with a focus on environmental engineering. I have spent my entire career in the environmental consulting industry, except for a short stint as an entrepreneurial engineer. I am currently the Northern California Water Marketing Manager for HDR Engineering, working from the Folsom office.

I have been involved with the CSUS Civil Engineering Department for many years and am currently the Chair of the Environmental & Water Resources Industry Advisory Committee. I am also fortunate to get the opportunity to speak to new engineering students in CE 1A on a regular basis. Giving back to the school and the engineering industry has been very rewarding for me.

Send your news to: ceconnect@ecs.csus.edu

## Training Bash

**The Civil Engineering Department hosted a "mini bash" by Bentley Systems in August for more than two dozen students and professional engineers. The maker of MicroStation offered two free, hands-on training workshops at Sacramento State: "MicroStation Tips & Tricks" and "InRoads Fundamentals." MicroStation is a software product for two- and three-dimensional design and drafting, while InRoads is software used more specifically for transportation facilities design.**