ECECONNECTION

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Your Link to the Department of Civil Engineering



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CHAIR'S MESSAGE



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Dear Colleagues and Friends,

A change in leadership can bring uncertainty in any organization. However, as our Civil Engineering Department prepares for such a change, I am delighted to report that I see a future that builds on our current strengths and

deepens the connections that we've made between the Department and professional communities.

When I started as a Department Chair in 2003, my main objective was to connect the Department to the professional community and the alumni. The Department strengthened the Civil Engineering Program Industrial Advisory Committee (CEPIAC), which was instrumental in establishing many of the programs and initiatives that the Department embarked on:

- The "Evening with Industry" (EWI) which has been a very successful event for the students, alumni, and the professional community. Our most recent, the 8th EWI, was a huge success (refer to the article inside this newsletter for the details).
- The Freshman Scholarship was established to retain and encourage students in the program.
- The Ken Kerri Endowment fund was established in 2007 to strengthen the Department (see more details at <u>www.ecs.csus.edu/ce/endowment.html</u>).
- The Ken Kerri Luncheon was initiated in 2008 (for more details on the upcoming one, see the green box on page 3).
- The Department published its first newsletter, CE Connection, in Fall 2009.

- Alumni Week was initiated in 2010 to bring alumni to the classrooms to present to students. (If you are interested in participating this year, please contact Neysa Bush at <u>nbush@ecs.csus.edu</u>).
- Most recently, the Alumni Golf Tournament is being planned this year for April 13 (see the details on page 3 of this newsletter).

The Department also strengthened our Graduate Environmental/Water Resources Advisory Committee (GEWRAC), which was instrumental in focusing on the curriculum of the graduate program in Environmental and Water Resources and organizing our efforts with the Ken Kerri Endowment fund-raising activities.

After nine years as a Department Chair, I have decided it is time for new ideas and leadership for the Department. I will continue to be a faculty member and Director of the Office of Water Programs. My role will change in the Department, but my commitment to the Department and its mission will not change.

I am delighted to announce that the Department's future is great under the leadership of our new incoming Department Chair, Dr. Kevan Shafizadeh. Starting in Fall 2012, Kevan will bring a lot of energy and enthusiasm to this position.

Please join me in offering full support to Kevan as he navigates the Department into its brighter future.

Sincerely,

Ramzi J. Mahmood

Alumni Week Grows To Include Golf Tournament

Four years ago, it all started as a simple luncheon to raise money for the Ken Kerri Endowment Fund. Three years ago, Alumni Day was created to bring professionals into a number of classes to give students a better idea of the many options in civil engineering careers. Last year, the "day" became a week so that more classes could hear from volunteer industry guest speakers.

Now a well-established mid-April event, Alumni Week will be capped this year with a golf tournament, with the proceeds going to the Civil Engineering Department. The event will be held at Mather Golf Course on Friday, April 13, starting with an 8 a.m. scramble and followed by lunch.

"We are excited about the golf tournament and see it as a great opportunity for alumni and students to interact," says Michael Penrose, PE (MS, '93), who is coordinating the event. "It is also a positive way to provide support to the Civil Engineering Department."

The highlight of the week, however, remains the Ken Kerri Endowment Fund Luncheon on Wednesday, April 11. This year's keynote speaker will be G. Hardy Acree, Director of Airports for the Sacramento County Airport System.

For the past 12 years, Acree has overseen the growth of the airport, including "The Big Build" – the billion-dollar new terminal that opened in October and that was the largest capital improvement project in Sacramento County's history. The terminal is three times the size of its predecessor and has two parts connected by an automated people mover.

The luncheon, which runs from 11:30 a.m. to 2 p.m. offers an opportunity for both professionals and students to network both before and after the keynote address.

Similarly, the classroom presentations bring professionals and students together. Rick Liptak, PE, President of Dokken Engineering, is looking for volunteers to speak in classes throughout the week of April 9.

For details of how to participate in the various events during Alumni Week, please see the box.



Alumni Week Events

Classroom guest speaker presentations: Monday through Thursday, April 9 through 12, various times. To volunteer, contact Rick Liptak at 916-858-0642 or <u>rliptak@dokkenengineering.com</u>.

Ken Kerri Endowment Fund Luncheon, Wednesday, April 11, 11:30 a.m. to 2 p.m., Sacramento State Alumni Center, \$25. For reservations, contact Neysa Bush at 916-278-6982 or <u>nbush@ecs.csus.edu</u>.

Civil Engineering Golf Tournament, Friday, April 13, 8 a.m., Mather Golf Course, includes lunch. To participate, contact Neysa Bush at 916-278-6982, or <u>nbush@ecs.csus.edu</u>.

How to Donate

The Ken Kerri Endowment Fund, which is designed to enhance the education that the Civil Engineering Department provides students, stands at \$75,446 as of January 2012.

To add your support to this worthy cause, you can:

Send a check made out to the "Ken Kerri Endowment Fund" to Department of Civil Engineering, Attn: Neysa Bush, California State University, 6000 J Street, Sacramento, CA 95819-6029.

■ Go online to <u>www.ecs.csus.edu/ce</u> and click on "Support the Department" to use a credit card to donate. (Please be sure to designate your donation for the Ken Kerri Endowment Fund.)

AN INDUSTRY

Big Turnout for Evening with Industry

The Civil Engineering Department's annual An Evening with Industry last November drew its largest crowd ever, a sign that the event is becoming increasingly popular with both students and professionals.

The event drew more than 200 students, eager to hear about job opportunities and network with professionals. In addition, 16 industry sponsors sent representatives to meet students and an swer their questions.

Joseph F. Sheley, Provost and Vice President for Academic Affairs at Sacramento State, welcomed



attendees. The Provost is a proponent of regional partnership roles for universities and an advocate of the systematic application of university teaching and scholarship to issues of regional, social, and economic development.

The highlight of the evening was a keynote speech by Col. William J. Leady, commander of the Sacramento District for the Army Corps of Engineers. He not only talked about a massive Corps project to add another spillway to Folsom Dam, but also remained after his speech to hear a panel of industry professionals answer student questions and to talk to interested students.









ALUMNI SPOTLIGHT

Ruben Robles: Clean Water is His Career



When he began his civil engineering career 20 years ago with the Sacramento Regional County Sanitation District (SRCSD), Ruben Robles was fresh out of college, with only limited experience as a surveyor and construction inspector. Today, as Director of Operations for SRCSD, he oversees 350 people, 168 miles of interceptor pipeline, and the daily treatment of 150 million gallons of wastewater.

Especially challenging is his responsibility for mapping out the strategy for a 10-year, \$2 billion project to upgrade the region's wastewater treatment capability. Even as SRCSD challenges some of the new wastewater discharge permit requirements that are driving the project and as it argues for a lower-cost alternative, Mr. Robles is moving ahead to help the district meet the permit's standards.

"We must proceed even though the issue is still pending," he explains. "When the permit was first issued in December 2010, we estimated that the treatment plant improvements would take 12 years, but the project needed to be compressed into 10 years to meet the regulatory deadline."

He is already in the process of hiring consultants to help with planning. Eventually, he expects the work to be divided into at least eight large construction projects, each with its own consultants, designers, planners, estimators, contractors and much more. Overall, many dozens of professional engineers will be involved and hundreds of jobs will be created over the life of the project.

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Mr. Robles presumes that at least some of those jobs will go to students from Sacramento State, his alma mater for his BS ('91), MS ('93) and MBA ('99).

"I feel a very real debt of gratitude to the university, and I look for opportunities to give back," he says. "Students are good for us because they are the future generation of engineers, and we are good for the university because of the great hands-on practical experience and resources we can provide."

I feel a very real debt of gratitude to the university, and I look for opportunities to give back.

— Ruben Robles

Although he has his hands full now and is less able to spend time away from his duties, Mr. Robles has been active with the Civil Engineering Department at Sacramento State for some time. At Dr. Ken Kerri's request he was a technical reviewer for the Office of Water Programs publication titled "Utility Management." He also participated on Dr. Kerri's translation team for Operator Training Manuals used to train wastewater treatment plant operators in Mexico.

In addition, he has participated on the Civil Engineering Program Industrial Advisory Committee, has given presentations in engineering classes, and has supported the MESA Engineering & Computer Science Program (MEP).

"Sacramento State gave me the foundation I needed to achieve what I've been able to do," he says. "They gave me the tools, and with hard work, I've had a wonderful career. I'm very grateful, so I am happy to do what I can to help the University."



FIRST JOB

Poor Economy, Few Jobs? **Persistent Grads Beat the Odds**

When the recession sent construction into a tailspin, the ripple effect impacted civil engineering jobs - particularly for recent graduates trying to get that first foothold into what they hoped would be lifelong careers. Openings have been difficult to find, and job seekers have found plenty of competition each time they apply.

6 6 Tap into your resources and attend career fairs... 🤊 🤊

— Jerry Lynch

But even in a tough economy, many Sacramento State graduates have been able to land positions, using tactics they learned from classes, internships and mentors on campus. Several shared their stories with *CE Connection*.

Jerry Lynch (BS, December 2009) is a firm believer in attending career fairs and networking with the contacts you make at these meet-andgreet events. It certainly paid off for him. Jerry began work with Granite Construction in the Bay Area last June even as he was finishing up his master's degree at UC Davis.

"Tap into your resources and attend career fairs," he advises. "I stayed in contact with Granite HR representatives over the months and years, and it finally paid off when a position opened up. I

even attended Sacramento State career fairs after I graduated, just so they were physically reminded about me."

The tale from Patrick Wilson (BS, 2011) also begins with a Sacramento State career fair, but is also shaped by a strong work ethic and plenty of persistence.

"It started in 2008 at a career fair where I landed an internship at El Dorado Irrigation District," he explains. "I worked there for six months before I was laid off due to budget problems."

He parlayed his experience with the district into a grant-funded job with a small engineering firm doing an assessment of the district's pump stations. But then the grant ran out. His next job came in May 2009 when he was hired as a "summer" intern by the South Tahoe Public Utility District – a job that lasted two years.

"I worked there through school and especially during winter break when I was off from school," he says. "Basically, any day I had off from school I worked for them. In May 2011, I was given a pay raise and a new title - Assistant Civil Engineer. But on December 1, I was let go, once again due to budget constraints."

During his time with the South Tahoe district, he had worked with an outside engineering firm, JDH Corrosion, to complete a project involving cathodic protection. As Patrick notes, he must have made a good impression on them; they hired him the week after he was let go by South Tahoe.

Ramon Ruiz Jr. (BS, December 2010) sees both internships and making a good impression as the key to getting that first job. An intern at the State Water Resources Control Board from his junior year on, after graduation he was hired by the Board's Division of Water Rights, despite a state hiring freeze that made openings extremely scarce.



Ramon's strategy was to ignore the lateral-transfer-only notation in state job postings and apply for every opening he could find. When the Division of Water Rights was granted an exemption from the freeze, he was ready. And then his hard work and effort as an intern paid off.

"What made the difference for me was making a good impression with the people I worked with as a student," he says. "The day I came in to meet my future supervisor, I was told my references were 'phenomenal.' The supervisor I had worked for as an intern even came down a few floors to recommend me face-to-face rather than doing it over the phone."

Ramon says every student should find an internship during school and then stick with it, even if they have to continue taking classes after graduation to remain eligible as interns. "Guess who will be hired when and if jobs become available in those places where you've interned?" he asks. "Probably not the outside applicants who have no relevant experience and who have to be trained still!"

Another hallmark of the Sacramento State Civil Engineering program besides internships is CE 190, the class that provides students with hands-on experience working with a client on a real-world project.

Joe Forbis (BS, 2011) says his senior project experience gave him the foot in the door he needed to be hired by the U.S. Army Corps of Engineers (USACE) - although it was sheer luck that brought it about.

"Someone from USACE was filling in for a CE 190 client on the day we were having public presentations," he explains. "Members



of our team were taking turns walking visitors through our project display, and I just happened to give this substitute

Beating the Odds

How tough is it out

there? One graduate who was happy to be hired recently said the numbers were intimidating. Out of 300 applicants, only 75 were invited to take a qualifying examination. Of those who took the test, only 18 were interviewed. In the end, only three people were hired – and two of them were already working as contractors for the employer.

the presentation. Afterwards, she asked for my contact information."

She helped him get an internship with GEI Consultants to work on the International Levee Handbook, a multi-national project in which USACE is heavily involved. When the GEI position expired, another USACE official lined him up with a federal contractor job. When an opening was available, USACE hired him. After only 10 weeks on the job, they sent him to London for an international conference on the levee handbook project.

"I'm enjoying my life and career after graduation," Joe says. "And all of this stems from a well-prepared presentation for a fake public meeting!"





Students Teaming Up for Mid-Pac Competitions

A concrete canoe has already been poured, and rowers are busy practicing their strokes. Various plans for treating wastewater and building a stable earthwall are being suggested, tested, and fine-tuned. A steel bridge is taking shape, and a spaceport is being designed.

It's all part of the fun and games – with a serious purpose – that make up the Mid-Pacific Regional Conference. Hosted by Sacramento State last year, Mid-Pac moves to UC Berkeley this year, with students from 11 universities competing from March 22 through 24.

Erikson Betts, current president of the Sacramento State ASCE Student Chapter, reports that students have been teaming up since the fall semester to put together plans for the various competitions (see box for the list of events).

"A lot of students are involved with the preliminary work," he says. "And we expect to send full teams to Berkeley for each of the events."

Students have been working hard to make their entries more competitive this year, drawing

from the work they've done in classes and getting some extra help from mentors. For example, in the fall 17 students attended a Saturday workshop hosted by Dr. John Johnston and then participated in a mock competition to sharpen their thinking about how to treat wastewater. "Both the lecture and the competition were really helpful," says Justin George, who is cocaptain of the water treatment team with Kevin Varnum. "Since the first of the year, we've been meeting twice a week to plan our strategy, and then spending Saturdays in the lab trying out different designs."

Similarly, the Geo-Challenge team has been testing theories about how to reduce the paper reinforcement used in building

a Mechanically Stabilized Earthwall (MSE) that must support a load without collapsing.



"Last year, we used seven grams of paper and the winning team used only 3.5 grams," explains Hoda Alinasab, the team captain. "We also didn't know last year that we could use a compaction tool, so we are testing how much that will allow us to reduce the reinforcement."



Like the Geo-Challenge team, the concrete canoe team has also taken a close look at last year's performance to identify what can be done to improve the design and the team's chances of winning. Zachary Jojolla, co-captain along with Dexter Early, says a new area of focus is the technical report and presentation that are counted as part of each university's concrete canoe score.

"We've talked to veterans of Mid-Pac and national competitions and it is clear that the technical report and the presentation usually provide the winning edge for a team," Zachary says. "So we are improving our preparations for those two parts of the competition."

Besides finding time between classes, projects and jobs to work on the competitions, students are also working on finding resources to cover the cost of materials. Each team has a budget and some funding provided by ASCE, Erikson says, but extra funding is always a plus. Donations may be made by contacting the Department at (916) 278-6982 or by e-mailing Neysa Bush at <u>nbush@ecs.csus.edu</u>.

"We appreciate any help we can get," Erikson says, "whether it is a donation of materials or money, or simply support for our teams when they head for Berkeley at the end of March."



Photo by CE student Blake Dolve



MID-PAC

Mid-Pac Events

Concrete Canoe – The team designs, builds and races a concrete canoe that must comply with 76 pages of specifications.

Geo-Challenge – The team designs and builds an MSE wall to withstand a 50-pound top load and a 25-pound side load, using the least amount of reinforcement possible.

Steel Bridge – The steel bridge design must meet "client" specifications and optimize both performance and economy. The bridge, which is tested with various loads, is built on site.

Transportation – A spaceport is designed that addresses land use, operational, sustainability and financial factors. The team submits a paper in early March and makes a presentation during the competition.

Water Treatment – The team designs a filtration strategy in advance, constructs a filter for the competition, and is judged on a number of factors, including the quality of contaminated water after it has passed through the filter.

In addition to the five team events, individual students can submit a Mead Paper, a technical paper on ethical issues facing civil engineers. This year's topic is "Ethics and Globalization."



NEWS & NOTES

Students

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Women's Scholarship...

Kira Davis, who interns with Mark Thomas & Company,



Molitoris Leadership Undergraduate Scholarship awarded by the Sacramento Chapter of the Women's Transportation Seminar (WTS). WTS gives the \$2,000 award to to women pursuing undergraduate studies in transportation who demonstrate leadership skills, ability, and interest.

has won the Louise M.

SEAOCC Scholarship...

The Structural Engineers Association of Central California (SEAOCC) awarded a \$750 scholarship to Joel LeCureaux last fall. Joel, who received his bachelor's degree in December, won the scholarship based on essays he submitted, his resume and his GPA.

Fall Graduates...

In December 2011, 40 Civil Engineering students received their bachelor's degrees.

Alumni

2010

Philip Buehler, BS December '10, moved to Willets, California, in July to begin working at BioEngineering Associates, an engineering/ construction firm that specializes in watershed restoration, with a particular focus on streambank stabilization/revegetation, in-stream fish habitat structures, and nonpoint source sediment control. Philip says he has many roles including civil engineer, project manager, grant writer, and marketing/ salesman. "In fact, one of the best parts of my job is that my duties vary depending on the time of the year," he writes. "Another great part of my job is that the civil engineering work that I perform encompasses all aspects of civil engineering."

Zachary Craig, BS '10, received his MS in Structural Engineering and Geomechanics from Stanford University in Spring 2011 has been working at Thornton Tomasetti's Fort Lauderdale, Florida, office since November. Currently, his project is a stadium/arena being built for the 2018 World Cup in Moscow. "It's been very interesting to work within Russian codes, and I have the opportunity to work out of our Kansas City office for a month so our team can work more closely with the architect," he writes. "Once this project is complete, I will be working on a large resort in Miami. The coolest part about working for Thornton Tomasetti is the huge network of talented structural engineers that I have been learning from." Zach notes that graduates looking for jobs should check out Thornton Tomasetti, a 500-person company with offices across the country that currently is hiring entry-level civil engineers.

Byron Tang, BS '10, was hired by the County of Santa Clara Roads & Airports Department as an assistant civil engineer in July 2011. He works in the Traffic Engineering and Operations unit. "I've been working on improving the performance and safety of the County's busy expressways," he reports. "Projects like the implementation of traffic responsive coordination along expressways, software that allows our existing camera infrastructure to do automated traffic counts, and pedestrian microwave sensors that extend crossing time when needed. In addition, if residents call to complain about a traffic signal in regards to its timing, function, or safety, I will often be one of the engineers to help troubleshoot the problem." Byron notes he enjoys his job because he gets to work with some of the latest technology in transportation engineering. **Rich Godina**, BS '10, was hired shortly after graduation by Kiewit's Bridge and Marine Division. He moved to Seattle to work in the firm's estimating office, where he was part of a team that successfully bid on complex jobs valued at more than \$100 million. He currently is working on a \$1.2 billion project to rebuild the longest floating bridge in the world, the SR 520 freeway that connects Seattle with Redmond. "I am part of a team that is responsible for building 33 concrete pontoons that are in excess of 360 feet long, 75 feet wide and 30 feet tall," he reports, giving an indication of the magnitude of the work to be done.

2007

Greg Sokolis, PE, BS '07, passed the PE exam in Spring 2010 and obtained his Qualified Storm Water Pollution Prevention Plan Developer certificate in January 2011. He worked for the U.S. Army Corps of Engineers Civil Works construction office for two-and-a-half years before recently transferring to engineering duties in the Levee Safety office. "I believe the construction experience provides a valuable basis for any engineer, as you're able to see where designers make mistakes and avoid those mistakes yourself," he says. In his current position, he will be conducting thorough inspections of several federal levee systems, looking for bank erosion, seepage, and other potential problems.

Camille Kelly, BS December '07, worked in bridge engineering for a year before going to the University of California, San Diego for a master's degree in Structural Engineering. In September 2009, she completed her master's thesis on hybrid precast bent cap systems in seismic regions, the same project she worked on at Sacramento State under Professor Eric Matsumoto. After traveling in Asia for a year, she returned to California to work at Ben C. Gerwick in Oakland on marine structure projects. She passed the PE exam in 2011 and got engaged, with a 2013 wedding planned.

2005

Scott Jones, PE, TE, BS December '05, is working as a project engineer developing roadway projects for a transportation firm, Drake Haglan and Associates, in Rancho Cordova, not far from Sacramento State. He designs roadway improvements for various public municipalities throughout California, including developing plans, specifications,

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and estimate (PS&E) documents, utility coordination, drainage analysis and design, as well as some project management duties involving managing sub-consultant schedules. He reports that since graduation, he married (September 2006) and he and his wife have "an absolutely adorable two-and-a-half-year-old boy." He began his career with the County of Sacramento but recently moved to Drake Haglan for a promotion. He passed the PE exam in 2009 and the Transportation Engineer test in 2010.

Christina (Prescott) Rheaume, PE, BS '05, moved to Highland, Illinois, after graduation because of her husband's job. Once there, she found a job with the City of Maryland Heights, a suburb of St. Louis, Missouri. She works in the construction division of public works, managing various public works projects, including new road construction, road re-construction, creek stabilization and road maintenance work. She obtained her PE in October 2011. "I have three amazing little girls, ranging in age from 5 to 11," she reports. "As a family we enjoy camping, traveling, spending time with friends and family, and playing sports. I belong to a local civic organization that raises funds for various groups around our town and I am a Girl Scout leader for my daughter's Brownie troop."

Faculty

Professor Benjamin Fell hosted the 19th annual Structural Engineers Association of Central California (SEAOCC) Student Competition on the Sacramento State campus in the fall. The home team came in third, outscored by UC Davis for first place and CSU Chico for second place. The competition requires students to design and build a wood structure to certain specifications. Teams are scored based on the load that their structure is able to support and on the quality of their design presentation.

Left: Raphael Torres, PE, BS '79, has retired from the California Department of Water Resources, where his career spanned from a 1977 internship to his last position as the Deputy Director responsible for the State Water Project.





FACULTY UP CLOSE

Professor Kevan Shafizadeh

Delivering a high-quality university education in the face of funding cutbacks is not easy for a department



chair. However, a professor who enjoys piloting planes, riding motorcycles, scuba diving, snowboarding and kayaking isn't likely to be put off by a challenge.

Dr. Kevan Shafizadeh was recently elected by his colleagues to follow in Dr. Ramzi

Mahmood's footsteps as chair of the Civil Engineering Department beginning next academic year. It is an honor that leaves him both humbled and excited.

"It is a challenging time to assume this role, given the difficult budgetary climate and the impact on our students, faculty and staff," he says. "I also think it will be difficult to follow Ramzi, who has been an outstanding department chair. I can only hope to live up to his model of serving the best interests of our students and department and representing those interests to the greater civil engineering community."

Among his priorities are continuing to build a strong relationship between the Civil Engineering Department and the professional engineering community.

"We will continue popular programs, such as Evening with Industry, our Alumni Week and CE Connection, and explore ways to expand our ties," he says. "Students benefit from our relationship with the industry, and professionals benefit from the resources we can provide, so keeping that linkage strong is important." Dr. Shafizadeh, who has led the transportation engineering program at Sacramento State since August 2004, is a registered civil engineer (PE), a certificated Professional Transportation Planner (PTP) and Professional Traffic Operations Engineer (PTOE). His research focus is the application of statistics and econometrics to various issues in transportation engineering and planning. He has conducted research in a wide range of subject areas in the transportation field, including pavement management, air quality mitigation, non-motorized transportation, traffic impact analyses, and telecommuting.

His academic and professional lives have been intertwined. He earned both his BS ('96) and MS ('99) degrees in Civil and Environmental Engineering at the University of California, Davis, before completing his PhD at the University of Washington in 2002. He was a post-doctoral researcher and instructor at UC Davis for two years before joining the faculty at Sacramento State.

During those same years, he collected practical engineering work and project management experience as a transportation engineering researcher, a project engineer working with local engineering firms, an independent consultant, and an expert witness for a variety of public and private sector clients. Dr. Shafizadeh hopes to utilize this unique blend of experiences as department chair.

Today, Dr. Shafizadeh remains an active member of the American Society of Civil Engineers (ASCE) and is a member of national technical committees with the Transportation Research Board (TRB). He is also a member of the Institute of Transportation Engineers (ITE), serving on both the Transportation Education Council and the Transportation Expert Witness Council.

His busy professional life does not keep him from spending time with his wife, Tracy, who is a product development professional in the biotechnology industry, and their two young sons. Kevan and his family live in East Sacramento near the campus.