

# CONNECTIONS

College of Engineering, Computer Science, and Construction Management



CSU, Chico 2014



Higher  
**Learning**

O'CONNELL TECHNOLOGY CENTER  
ROOFTOP BECOMES SOLAR LAB FOR  
ENGINEERING STUDENTS

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# CONTENTS

04	Executive Lecturers	19	Smart Water
07	Distinguished Alumnus	20	Leading Faculty
08	Besotes Has the Final Word	23	Greene on Green
10	A Lifetime of Achievement	24	Looking Back
13	Tec de Monterrey Students	27	In Celebration of Philanthropy
14	Outstanding Student	27	Computer Science Alumni Reunion
15	Design Expo 2014	28	New Generation of Imagineers
16	Higher Learning	29	Students Take Home Gold
		30	Solid Service



## A WORD FROM THE DEAN

Interim Dean Ben Juliano

In this issue of *Connections* magazine, we share a collection of stories that highlight the work and achievements of our students, faculty, and alumni. The thread that binds these stories together is the way in which faculty, students, alumni, and our corporate partners all work together to continue our long-held tradition of excellence and accomplishment. Indeed, these strong connections characterize the CSU, Chico College of Engineering, Computer Science, and Construction Management.

Included in this issue are several stories that highlight our students' accomplishments in intercollegiate competitions, application of their knowledge to real-world problems, and dedication to serving the community. We feature the first-place finish of our preconstruction services team from our construction management program, the outstanding quality of this year's senior capstone projects, the outreach work done by our Society of Women Engineers, and a community service project completed by our Concrete Industry Management students. We also spotlight the leadership potential of our students as exemplified by the stories that feature our senior reflections speaker and our Outstanding Student Award recipient.

In this issue, you will read several stories about our talented and dedicated faculty, including five faculty in

civil engineering, computer science, and mechanical engineering who were promoted to full professor in recognition of their teaching, research, and service.

We also feature faculty collaborations with other institutions, like the one we have with Tecnológico de Monterrey to provide their students with courses in video game design and development. We also feature faculty who provide tools that enhance our students' learning experience, be it a textbook on sustainable plastics, a solar lab installed by our amazing staff, or research experiences in the use of smartphones for water management, real-time simulations, or earthquake risk mitigation.

Also included in this issue of *Connections* are stories that feature our distinguished alumni, including pieces on our 2014 Distinguished Alumni award recipient, our computer science alumni reunion event, our Celebration of Philanthropy event, and longtime student-faculty friendships.

We welcome you to not just read these stories, but to also join with us to create our stories for tomorrow. You will find contact information at the end of each story included in this issue. Please pick up the phone or send an email to learn more about how you can become part of our stories in the coming years. 

# EXECUTIVE

## *David Pritchard*

Entrepreneur and Emmy Award-Winning Producer of *The Simpsons* and *Workaholics*

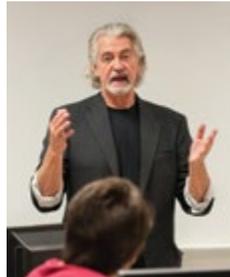
**M**oving among the 200 computer animation and game design students gathered in the O'Connell Technology Center, executive lecturer David Pritchard worked the room like the Hollywood cocktail party veteran that he is. Then, he began to speak and, as they say in the 1996 romantic comedy *Jerry McGuire*, he had them at hello.

The irrepressible Pritchard—entrepreneur, philanthropist, and Emmy Award-winning producer of *The Simpsons*, *Family Guy*, *King of the Hill*, and *Workaholics*—began his Sept. 26, 2013, lecture at the College of Engineering, Computer Science, and Construction Management by sharing a candid and highly entertaining account of his career path, one that led him to live and work all over the world. Armed with a multidisciplinary graduate degree in business and economics from Washington University in St. Louis, Pritchard has worked in the United States as a marketing executive for Johnson & Johnson; in South America managing the construction of breweries in Mexico, Venezuela, Brazil, and Colombia for Anheuser-Busch; in the Middle East running divisions of Chase Manhattan Banks in Beirut, Lebanon, and Amman, Jordan; and in Asia and Africa, where he managed projects in the operating field and created economic/operating risk management models for Schlumberger, a global oil field and information services company. “Along the way I got to affect a lot of people’s lives, and I got to change things that were happening in some of these places,” he said.

In 1990, Pritchard switched gears and moved to Los Angeles. Since then, he has been an operating executive or president/CEO of several publicly traded companies in the entertainment industry. He has produced several Emmy Award-winning primetime programs and has produced more than a dozen children’s programs. “At this point in time in my life,” Pritchard said to the students, “I’ve been in 140

countries and have worked in about 100 of them.”

Pritchard turned pensive as he spoke with the students about how fortunate they are to be at CSU, Chico. “It doesn’t get any better than this,” he said of the software programs used in the Computer Animation and Game Design Program. He urged the students to be interested in the bigger world and think beyond creating the next best video game. He also spoke about the potential of



gaming technology to reform the way children learn. “Use your education to use video games to teach,” he said. “Every school system is trying to figure this out.” Pritchard also cited 3-D animation’s great promise for medical diagnosis, such as solving illness relative to cardiovascular problems. “Figure out a way to do this,” he said, urging the students to view their education as a means to make a positive difference in the world.

Now in his 60s, Pritchard devotes much of his time to philanthropic endeavors. “I’m serious about fixing the things my generation screwed up,” he said. He is currently active in a highly regarded inner-city arts education program, a groundbreaking center for spinal cord injured adults, and Singularity University, a benefit corporation located in Sunnyvale, California, that provides educational programs, innovative partnerships, and a start-up accelerator to help individuals, businesses, institutions, investors, NGOs, and governments understand and use cutting-edge technologies to positively impact people throughout the world. 



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“Use your education to use video games to teach,” he said. “Every school system is trying to figure this out.”

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## Tony Perkins

Author, Entrepreneur, Tech Prophet

When students gathered in Ayres Hall on April 2, 2014, to listen to a presentation by executive lecturer Tony Perkins, they assumed that they would learn about new gadgets or apps they might look forward to purchasing. What they walked away with instead was a new awareness of the

Editor-in-chief of *Red Herring* magazine and the AlwaysOn network, Perkins is a regularly featured expert on CNN and MSNBC's *The Chris Matthews Show*.



seismic shifts that are occurring in the way people across the globe want to travel, what people care about, and how the definition of success in the workplace is changing.

Editor-in-chief of *Red Herring* magazine and the AlwaysOn network, Perkins is a regularly featured expert on CNN and MSNBC's *The Chris Matthews Show*. He is their go-to guy when the topics of digital media and entertainment, on-demand and cloud computing, mobile technology, and green tech come up. He makes it his business to know what's coming down the pike. Simply put, when he talks, business executives listen.

Perkins' reputation for making on-the-money predictions took shape when the book that he co-wrote with his brother Michael Perkins hit booksellers' shelves in November 1999. *The Internet Bubble: Inside The Overvalued World of High-Tech Stocks and What You Need to Know to Avoid the Coming Shakeout* forecasted the collapse of overvalued technology stocks. Within four months of the book's launch, the Perkinses' prediction became a reality.

When asked about the likely focus of tech companies in the future, Perkins points to companies like Uber, an Internet-enabled ridesharing service provider, and Airbnb, an online marketplace for people to list and book lodging in places all over the world. Companies like these are changing the way people get around and how they spend their leisure time. Perkins also predicts a major shift in the workplace as companies move away from time metrics (time spent on tasks) to productivity (how much is accomplished). "You will be measured by your productivity," Perkins told the students. [@](#)

To read some of the latest tech news, visit Perkins' website, the AlwaysOn network, at [aonetwork.com](http://aonetwork.com).

## Joe Schneider

Facebook Executive and Local Mentor

On March 27, 2014, students gathered in Selvesters Café-by-the-Creek to learn from Facebook executive Joe Schneider how to lead high-performance teams. A campus hotspot where faculty and students score their daily intake of caffeine, the creekside cafe was the perfect setting to hear about the high-octane environments where Schneider has worked for more than 25 years.

Schneider has held a variety of senior IT roles over nearly three decades in a variety of high-tech organizations, beginning with Apple Computer. He has managed technology companies ranging from tech start-ups to companies with large global markets, including the dot-com start-up Portera Systems, the first cotenant, subscription-based Software as a Service (SaaS) provider. Schneider joined Facebook in 2011, where he currently leads the organization's Internal User Operations worldwide.

While Schneider works on Facebook's Menlo Park campus four days a week, he calls Chico his home. He and his family came to Chico more than a decade ago



and they are here to stay. He is a tireless advocate for bringing tech companies to the Chico area and serves as a mentor to hopeful entrepreneurs working with ChicoStart, a local tech incubator, to fully develop and launch start-ups. [@](#)

# DISTINGUISHED

..... *Rob Salmon* .....

# ALUMNUS



In the spring of every year, California State University, Chico recognizes its outstanding alumni. Each alumnus or alumna honored during the annual Distinguished Alumni celebration serves as a role model for students, inspires faculty and staff, and in many ways large and small, makes the world a better place.

On April 11, 2014, computer science graduate (1990) Rob Salmon was one of eight distinguished alumni honored by CSU, Chico at the 21st annual Distinguished Alumni Recognition Dinner. With family and friends looking on, Salmon accepted the honor with his customary humility and grace. “Chico gave us a wonderful platform to build on,” he said as he reminisced about his experience as a young student at CSU, Chico. “We wanted each other to succeed. That’s why so many of us are still such good friends.”

Salmon came to Chico from the Fairfield area, choosing to major in computer science and minor in business. After graduating from CSU, Chico in 1990, he combined the disciplines of computer science and marketing, holding various sales positions at Sun Microsystems and Data General Corporation. In 1994, he joined NetApp, a \$6 billion tech company that develops and markets systems that store, manage, protect, and retain data.

NetApp was just a small tech company when he joined the team; he was employee No. 21 and the company’s first sales rep. Salmon hit the ground

running, laying the groundwork for the “customer success” sales culture that, even in the midst of a rapid growth and a continually changing global marketing environment, has persisted at NetApp over the years. As the company grew, Salmon led the sales operations through several critical transitions, and by 2004, he was leading NetApp’s expanding global field operations. Serving in that capacity for a decade, he saw the operations grow to a team of more than 4,000 professionals in 50 countries.

Most recently, on April 7, 2014, just one week prior to traveling to Chico to accept Distinguished Alumni honors, NetApp announced Salmon’s promotion to president and head of NetApp’s Go-To-Market Operations. He now supervises the work of more than 7,000 employees and \$6 billion in annual sales. His work takes him all over the world (he will likely log more than 150,000 air-miles this year), yet he still finds time to support several service organizations, including the Asian American Donor Program, the Fairfield High School Staff Scholarship Program, and the St. Baldrick’s Foundation, which supports the fight against childhood cancers.

# Besotes

## has the final

# Word

### Construction Management Graduate Delivers Farewell Address at 2014 Graduation Celebration

**F**riends, faculty, and family members joined graduating seniors in Laxson Auditorium on May 16, 2014, for the annual College of Engineering, Computer Science, and Construction Management's (ECC) Graduation Celebration. The crowd was buoyant as the graduating class of 2014 filed into the crowded theatre but turned more serious as construction management graduate Justin Besotes took the stage, donned in his graduation gown and signature cowboy hat, to deliver a farewell address to his fellow classmates.

"One of the many great things I learned during my enrollment at Chico State," Besotes began, "is that we have a responsibility to our communities, and to our world, regardless of our chosen majors or career aspirations. Whether we work in engineering, computer science, or construction management, we must not just focus on selfish ideals, prestige, or aspirations of grandeur; we must challenge ourselves as well as those around us to be civically engaged."

The students and faculty who worked, studied, and served alongside Besotes during the last three years nodded in agreement, quietly acknowledging the sincerity behind his words. Since arriving at CSU, Chico in 2012, Besotes has been a tireless volunteer,

taking central roles on three large and complex community service projects that were completed by the students and faculty of the Department of Construction Management during the last three years. As a new transfer student, Besotes had barely unpacked his bags when he joined other construction management students traveling to Joplin, Missouri, to rebuild five homes that had been swept away in 2011

by an EF5 tornado that left behind a 22-mile path of destruction. The tornado destroyed 8,000 structures, leaving many residents homeless.

"During that Blitz Build project, we encountered a record-breaking rainfall of four inches in a 24-hour period," recalled Besotes, who served as a crew chief on the project.

"Working in the rain, hand-in-hand with my peers and leaders in our College of ECC, I didn't hear a single complaint." Besotes credits that experience for opening his eyes to the tough work ethic, determination, and dedication to service that are integral to CSU, Chico.

With his first Blitz Build service effort under his belt, in 2013 Besotes helped to lead a second Blitz Build project, which resulted in the construction of a barn that now serves as a visitor entrance and display facility for the Patrick Ranch Museum. Located just south of Chico in Durham, Patrick Ranch is a historical site dedicated to preserving local history and educating





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**On April 6, 2014,  
Besotes received  
a 2014 CSU, Chico  
Outstanding Student  
Award for his  
dedicated service to  
communities both  
local and far.**

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visitors about the agricultural significance of the area. It serves as a popular field-trip venue for local elementary school children.

In 2014, Besotes led a \$1 million Blitz Build project to construct four transitional housing units and restore a historic home in Chico for the Salvation Army's Adult Rehabilitation Program. While at CSU, Chico, Besotes was also active in the Design-Build Institute of America and served as the treasurer of the student chapter of the Associated General Contractors of America.

As Besotes recalled his experience at CSU, Chico, it was clear that his most cherished memories were those of joining with faculty and fellow students to make a positive difference in people's lives. He concluded his remarks by issuing a challenge to his fellow students: "The lives we lead after we leave this auditorium should not be quiet, ordinary lives," he said. "I challenge my fellow graduates to take the connections you have made, the unique passions you have developed, and most of all, the degree you have so deservedly earned, and do something relevant and positive with that knowledge."

*Besotes graduated on Saturday, May 17, 2014, with a bachelor's degree in construction management.*

# A LIFETIME

OF  
ACHIEVEMENT



## EMERITUS PROFESSOR ROY CROSBIE HONORED FOR INNOVATIVE RESEARCH IN COMPUTER SIMULATION

**O**n Feb. 26, 2014, Roy Crosbie, emeritus professor of electrical and computer engineering, was recognized by California State University, Chico's Office of Research and Sponsored Programs (RESP) for his pioneering research in the area of computer simulation and his work with the U.S. Navy to develop simulations that can inform the construction and use of all-electric Navy ships.

We caught up with Crosbie a few weeks after the awards ceremony to talk about his work and what's next on the horizon for this prolific researcher. Only a few minutes into our conversation, it was clear that the work for which he has been honored is his lifelong passion. "I've been involved in using computers for doing simulations ever since I was a senior undergraduate," he recalls of his years as a young student in England at the University of Liverpool, where he earned both a bachelor's degree in electronic engineering and a doctorate in electrical engineering. "I built an old-fashioned vacuum tube analog simulator for my final project in 1957," he said with a smile.

After his graduation from the University of Liverpool, he joined the faculty of Salford University near Manchester, England. There, during the 1960s and '70s, he taught courses and got involved with professional organizations that focused on simulation. His work with these organizations continues even today. He is a former president and a lifetime member of the Society for Modeling and Simulation International and the recipient of the society's Presidential Award for Distinguished Service to the Society. He has also been recognized as a Simulation Pioneer by the Modeling and Simulation Professional Certification Commission.

In 1983, after more than 20 years of service at Salford University, he joined the Department of Computer Science at CSU, Chico, where he teamed up with colleague John Zenor to seek funding for simulation-related research. Since then, he has been involved in research that has attracted more than \$5 million in funding.



**"It would be wonderful if we could leave something behind that younger faculty can build on."**

Since 2001, the funding for the research has mostly been provided by the U.S. Office of Naval Research (ONR) and has been focused on the development of low-cost, high-speed techniques for the simulation of electric power systems for all-electric ships. This area of research started with a contact from a former



colleague from Salford, Narain Hingorani, who became a world-renowned expert in electric power systems at Palo Alto's Electric Power Research Institute. Hingorani has continued to make regular visits to Chico to advise on the research. This project brought together a faculty team including Professors John Zenor, Richard Bednar, Dale Word, and Kurtis Kredon II, and has also included collaboration with faculty from several other universities, including South Carolina, Drexel, Glasgow (Scotland), Hamburg and Aachen (Germany), and Cambridge (England).

When asked what has attracted the attention of the ONR, Crosbie explains that simulations are used to specify what equipment is needed and whether a power system as a whole will function correctly under varying situations. When dealing with power systems for naval vessels, the greatest concern is about damage during conflict. If one side of the ship is badly damaged, it's critical to know how to continue to support the essential functions using the half of the system that is on the undamaged side of the ship. "There are super simulators that are available that cost hundreds of thousands of dollars," says Crosbie. "We could never compete with that with a desktop system, but what we could do, and are trying to do, is to enhance the common PC and software that our students use here to build a description of the system you want in a graphical way. You put a motor here, and a converter there, and a resistor here, and you can put them together in a certain

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way, and the software will simulate it and tell you how it's going to behave under certain circumstances.”

Over the years, Crosbie and his colleagues have created techniques to run real-time simulations that proceed in a time-synchronous fashion with real events. “With power electronic systems where you have many switches switching very rapidly on and off all over the place, it's very difficult to build a simulation that captures all this running at the same speed,” says Crosbie. “If you can capture it in real time, you can connect it to some real hardware so the real hardware is receiving its inputs and sending its outputs. The hardware thinks it's connected to the rest of the real system, but it's actually connected to a simulator. Whatever you are testing doesn't detect the difference.”

Using relatively low-cost, commercially available components, Crosbie and his colleagues first used digital signal processors to run simple simulations in real time. They then switched from these devices to one that is more difficult to use but has a lot more potential: the Field Programmable Gate Array (FPGA), a programmable logic device containing as many as 2 million logic gates that can be programmed to create a custom computer architecture. By that time, the scope of the research extended beyond real-time simulation to the development of powerful, low-cost, simulation workstations. “At this point it was suggested that the technology was reaching the point at which it might be worth transferring to one of the Navy labs for more research and testing,” Crosbie recalls. A prototype system was delivered in July 2014 to the Ship Systems Engineering Station in Philadelphia. The next step would be to build a more powerful system and develop more powerful models.

Students have been involved in the research projects from day one. “When we are going full out, we have a maximum of five students, both undergraduate and graduate students, mostly from electrical and computer engineering,” says Crosbie. “It's

a wonderful educational experience for students who are working as members of a team.”

Crosbie is proud of the accomplishments of his students both during and after their involvement in his research. Many have gone on to top-tier graduate schools and others have secured employment with some of the nation's best employers. He and his colleagues make certain their students know how to work as a team, telling them that the work environment requires people to help others. “I think that's probably the most valuable lesson they learn apart from the actual technical knowledge that they gain,” says Crosbie.

When asked how the Navy might use his research to design and build the next generation of naval ships, he explained, “In a broader sense, this may well just be a way of producing a relatively low-cost simulation capability to greatly enhance the power of an ordinary PC, which may not currently be used to design a Navy ship. The more we can generalize what we are doing, the broader the potential capability.” He is also hopeful that the research will provide a foundation for other faculty. “It would be wonderful if we could leave something behind that younger faculty can build on,” he says.

So what's next for the vibrant Crosbie who shows no signs of slowing down? He's talking with Springer Publishing about editing a new simulation journal. “There are certainly a lot of simulation journals, but I have an idea for something a little bit different—something more applications oriented,” he says. He regularly writes articles for the Society of Modeling and Simulation International and is on the editorial board of a series of books on simulation. He has been pressed to write a book for the series. “There's plenty to be done,” he says. 

*Crosbie, now 78, lives in Chico with his wife, Mary. He is the proud father of four children and grandfather to nine. His son Paul is a Chico artist who is well known for his glass art, and his son John is a successful entrepreneur. His son Peter, a CSU, Chico graduate, works for Intergraph in Huntsville, Alabama, and his daughter, Mary, lives in England and works for the British government.*

**This project brought together a faculty team from CSU, Chico that includes Professors John Zenor, Richard Bednar, Dale Word, and Kurtis Kredon II.**



# TEC DE MONTERREY STUDENTS

## TAKE SUMMER COURSES AT COLLEGE OF ECC

On June 2, 2014, 33 students from Tecnológico de Monterrey (TEC) stepped into the O’Connell Technology Center to begin the first of two courses that they would complete during a special four-week summer session at California State University, Chico. They would leave the same classroom four weeks later with a new skill set in computer game design, a greater command of the English language, and many happy memories.

The four-week intensive summer session that brought the students from Mexico to Chico was the continuation of a partnership that began more than 20 years ago between CSU, Chico and TEC. Founded in 1943, TEC is one of the largest private university systems in Latin America, serving more than 90,000 students on 33 campuses throughout Mexico. CSU, Chico has partnered with TEC many times over the past two decades to offer courses that provided opportunities for faculty and students from both institutions to broaden their skills and experience cultures different from their own.

This most recent collaboration between the two universities began with three primary goals: to help visiting TEC students enhance their mastery of the English language, to provide them with exposure to the growing field of computer animation and game design, and to introduce them to American culture. CSU, Chico’s Regional and Continuing Education (RCE) would manage enrollments and logistical support, while College of Engineering, Computer Science, and Construction

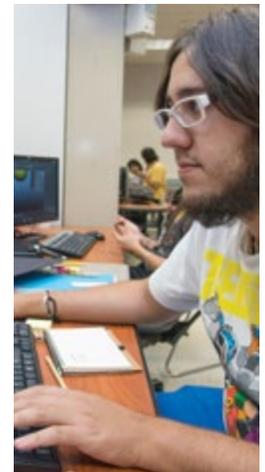
Management faculty would provide instruction in the O’Connell Technology Center facilities.

“The TEC students were excited to take our courses because we are one of the few public universities offering game development, and our program is very production oriented,” said Computer Animation and Game Design professor Jeff Underwood. “So they would learn not just the theory of game design but would be able to get their hands dirty and attempt to make a game.”

During their stay, the students completed two courses: Video Game Design and Video Game Development. Underwood led the students through the use of the iterative design process (the cycle of design, implement, test, feedback, design, implement, test) and introduced them to the structural elements of how to design and develop a game. Their classroom experience culminated with teams of three to four students designing, creating, and presenting an electronic prototype of a video game of their own design.

When they weren’t in the classroom, the students from TEC were enjoying the sights and tastes of Chico. During their stay, they visited Chico’s Thursday Night Market, enjoyed a Friday Night Concert at the City Plaza, took a tour of Bidwell Park, and cooled off at the Forebay Aquatic Center.

“Our guests from Mexico were really outstanding students,” said Underwood. “The progress they made in such a short amount of time was very impressive. Working with Tec de Monterrey has been excellent experience.”



# OUTSTANDING

## STUDENT



sought out leadership positions within our program, and performed successfully in these roles, and she has the drive necessary to be successful in whatever she pursues,” says Mehl.

In 2013, Oran served as president of the Chico chapter of the American Society of Civil Engineers (ASCE), and she participated in ASCE’s Workshop for Student Chapter Leaders in 2012 and 2013. While being president of the chapter, she led an effort that resulted in the creation of a mentoring program that connects junior and senior students with freshmen to help them acclimate to college life and succeed as civil engineering majors. Oran was also selected from a talented pool of students to work on the Engineer It Project, an effort led by civil engineering faculty member Jim Scolaro that focuses on creating educational videos that help students better understand foundational engineering principles.

Oran has clearly earned the respect of the civil engineering faculty. “She is a great role model for our students,” says Mehl. 



Each year, CSU, Chico honors its best and brightest students, those who have demonstrated remarkable academic achievement, exhibited rare athletic ability, or personified the campus’ dedication to community service. This year’s awardees were recognized at a ceremony in the Bell Memorial Union Auditorium on April 8, 2014. The accomplished group of students included civil engineering student Alexandra (Alex) Oran.

Nominated by civil engineering professor Steffen Mehl for the Outstanding Student Award for the College of ECC, Oran embodies the dedication to academics, leadership, and service that is encouraged by faculty for all students. “Alex has demonstrated her commitment to learning the technical aspects of engineering, has

*Oran graduated on May 17, 2014, with a bachelor’s degree in civil engineering and a minor in math. The award received by Oran is sponsored by CSU, Chico alumni Gary and Judy Sitton.*

# Design 2014 Expo

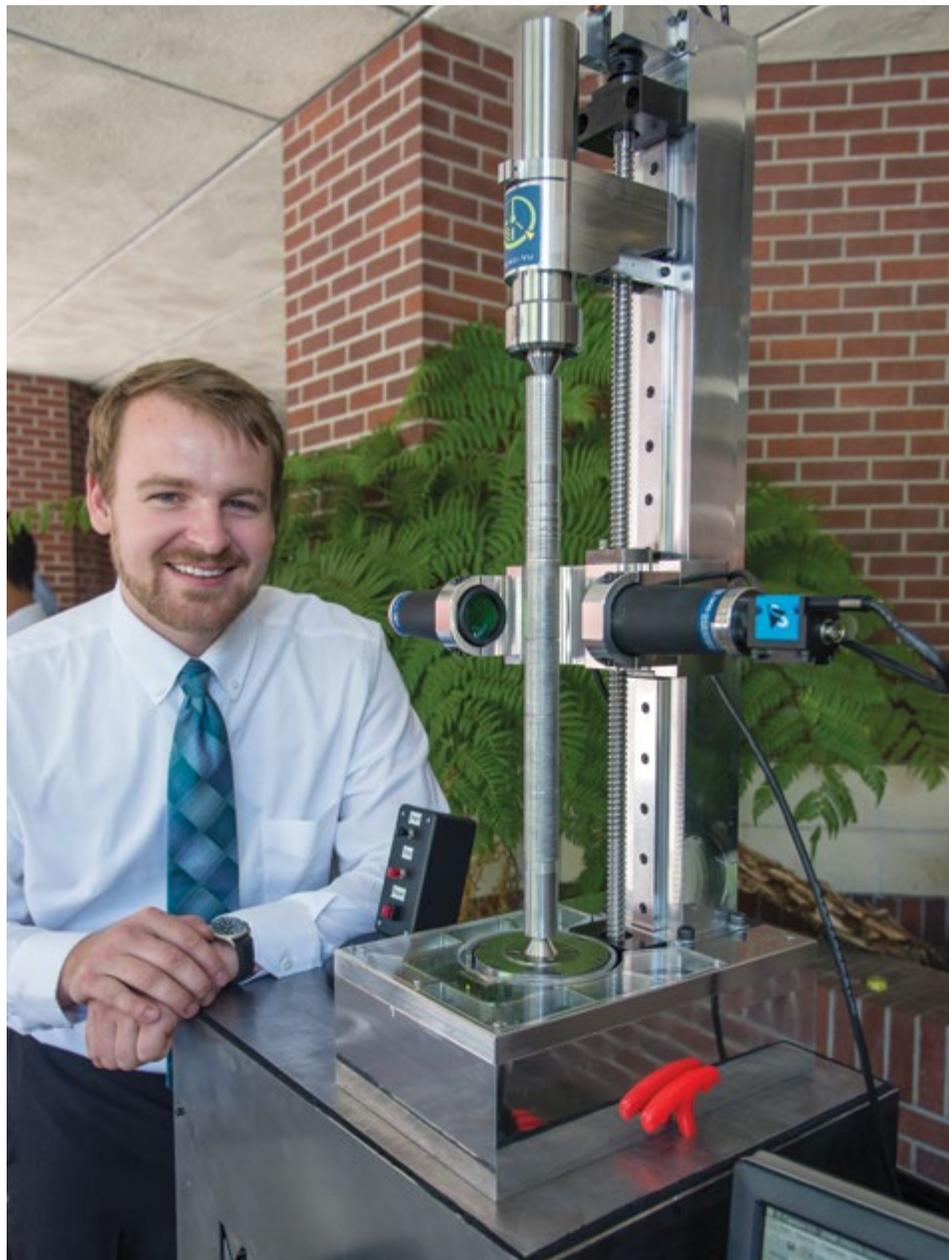
On May 6, 2014, more than 25 senior capstone projects were on display on the O'Connell Technology Center's south veranda, and more than a dozen design reviews were presented by mechanical and mechatronic engineering students for the annual College of Engineering, Computer Science, and Construction Management Design Expo. The 2014 capstone projects included biodegradable sporting pigeons, a seismic sensor tester, an automated flood irrigation system, several computer applications concepts, and a wheelchair that provides users with enhanced mobility.

Sponsors for projects in the 2014 Capstone Design Program included 3Core, American Society of Mechanical Engineers, CSU Agricultural Research Institute, Lawrence Livermore National Labs, ATK-RCBS, Micro-Vu Corporation, Owens-Illinois, Prototools Corporation, Transfer Flow, TSH Enterprises, and the Walk and Roll Foundation.

Each year, capstone design projects begin with the identification of sponsors during the summer months and then take shape in the fall of each year as student teams are formed and initial solutions identified. Prototype construction and testing take place during the spring term, and the effort culminates in late spring with the Design Expo, which is held on the CSU, Chico campus to provide sponsors, local businesses, and community members with an opportunity to view project demonstrations and hear presentations from students.

"This collaboration prepares our students for positions with top companies, advances our faculty's research, provides innovative solutions to our industry partners, and makes the world a better place as project solutions are implemented for the public good," said mechanical engineering faculty member and Capstone Design Program director Greg Watkins. 

*For more information about the Capstone Design Program or to become a project sponsor, contact Greg Watkins at [gkwatkins@csuchico.edu](mailto:gkwatkins@csuchico.edu) or 530-898-4388.*



# Higher Learning



## O'CONNELL TECHNOLOGY CENTER ROOFTOP BECOMES SOLAR LAB FOR ENGINEERING STUDENTS

When mechanical engineering professor Greg Kallio wanted to design a lab where students could study solar electric and thermal systems, his first thought was to look up. He knew that the roof alcove of the O'Connell Technology Center would be the perfect location for a new 1.6-kilowatt (kWdc) solar lab that would be used by students to complete hands-on projects associated with the courses that Kallio and others teach at CSU, Chico. The lab would be just steps from the fourth-floor location of the Department of Mechanical and Mechatronic Engineering and Sustainable Manufacturing faculty offices and classrooms. "Because the lab is viewable from the department office lobby, it also serves as a useful demonstration and showpiece for visitors," explained Kallio.

Widely recognized by other universities and organizations for its early and continuing commitment to sustainability, CSU, Chico is one of the seven founding members of the American College and University Presidents' Climate Commitment to reduce global warming. Over the last decade, the campus has shown leadership in sustainability through the completion of campus projects that divert waste from landfills through recycling and composting and conserve energy by more efficiently heating, cooling, and lighting campus facilities. The campus also hosts the annual This Way to Sustainability Conference, the nation's largest student-run conference of its kind.

Somewhat incongruent with its leadership in sustainability, as of 2013 there were no dedicated solar energy courses taught at CSU, Chico by engineering or any other department faculty. "Solar energy is one of many topics included in my Energy Systems course, but the coverage is cursory at best," said Kallio. Citing the need for a stand-alone course to provide students with opportunities to secure good jobs in the growing field of solar energy, Kallio worked with others in his department to create a new elective course titled Solar Energy Engineering.

As he designed the new course to include ample opportunities for students to apply what they learn in the classroom to real-world projects, Kallio searched for a space that could serve as a primary lab for the course. When, in spring 2013, the CSU Chancellor's Office issued a request for proposals for funds that would support faculty and facilities management partnerships in their efforts to integrate sustainability into undergraduate curricula, Kallio jumped at the chance to submit a proposal. His project was selected for funding, and for the past year, he has collaborated with CSU, Chico facilities management staff to create two solar energy "living labs" —one on the rooftop of the O'Connell building and

the other on the Normal Avenue parking structure. The O'Connell solar lab is nearing completion.

The O'Connell lab consists of a pole-mounted, six-module photovoltaic (PV) array with a two-axis tracking unit to give perfect alignment with the sun. Each PV module has a power optimizer that allows the array to produce maximum power and provide module-level

monitoring via the Internet. One module is water-cooled with a heat exchanger to improve electrical performance; this also provides an additional experiment for students to study PV-thermal solar water heating. The system is presently configured for off-grid operation with a charge controller, battery bank, inverter, and an automated data acquisition system that records power, solar irradiance, water flow rates, and temperatures. The stored energy can be used for a variety of purposes such as charging stations for student laptops and phones. "This is a one-of-a-kind lab, and it would not have been successful without the expertise of the College of ECC technical staff, namely Steve Eckart, Dave Gislson, and Scott Vanni," said Kallio.

The rooftop lab will be used by students enrolled in the course to learn how solar electric and thermal systems operate by conducting experiments with automated data acquisition. Through classroom assignments and projects, they will understand the design of an off-grid solar PV system and be able to investigate the effects of



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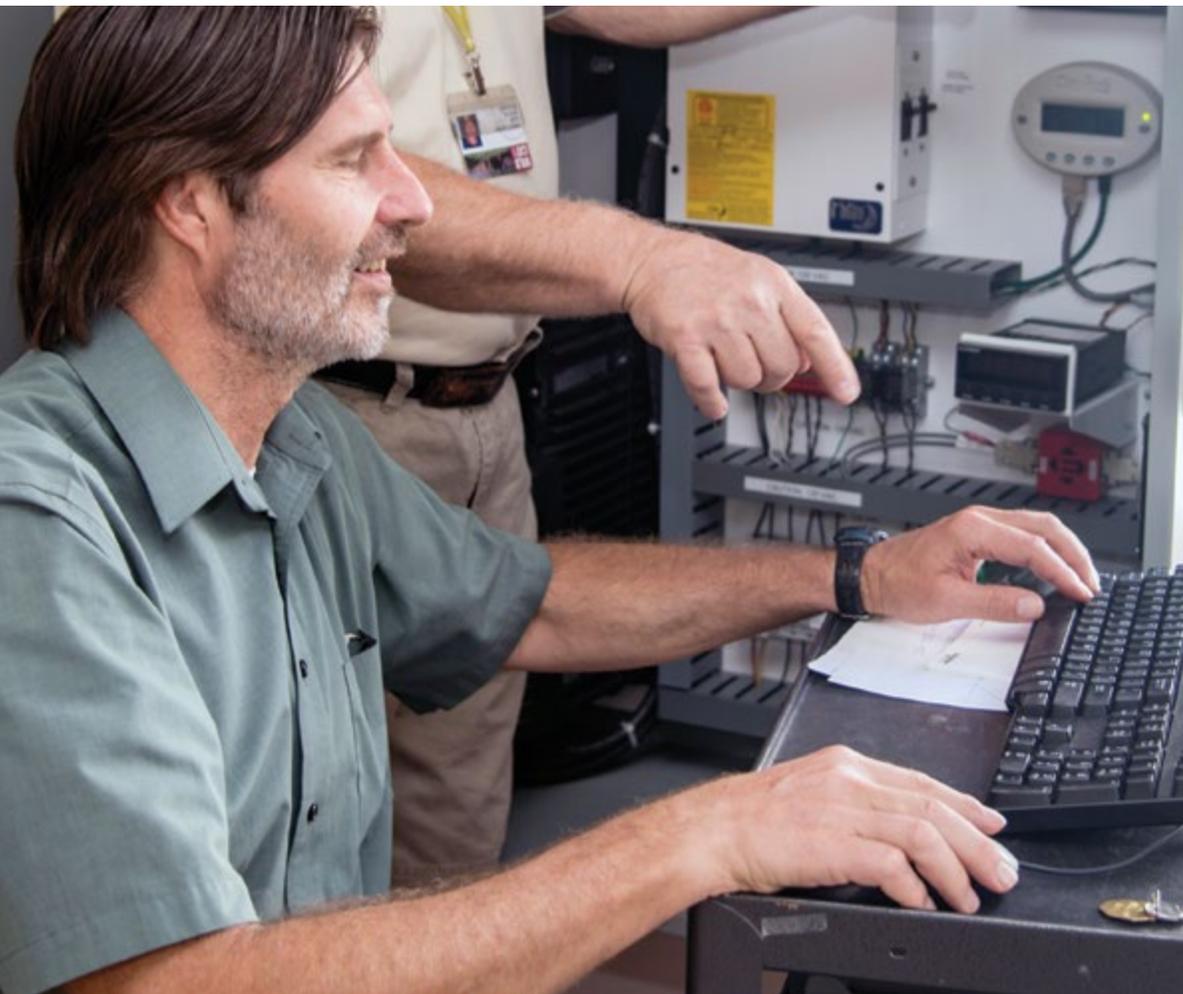
array tracking, module cooling, shading, and soiling on performance. They will also learn how to conduct a solar site survey and learn how to design PV arrays and support structures, attach to building roofs, and select electrical balance-of-system equipment.

In addition to the new lab on the O’Connell rooftop, students taking the new Solar Energy Engineering course will download data collected from the 60-kWdc grid-tied solar PV array on the campus’s new Normal Avenue parking structure. Completed in 2013 and fitted with the solar PV array during construction, the parking structure needs only a modest investment in sensors and a communication gateway for “live-site” web page monitoring to serve as a living lab. Once fitted with the new equipment, students will be able to download archived data and evaluate system efficiency, look at seasonal trends, evaluate cell temperature effects, and create “what-if” scenarios to evaluate improved array configurations. Students will gain an understanding of the importance of PV monitoring and how environmental factors affect power output.

Kallio is enthusiastic about the learning opportunities that the new lab space above O’Connell and the newly acquired data mining capacities from the parking garage array will provide to students.

“The planned activities associated with the new course in solar energy engineering will be challenging, hands-on, open-ended, and will prepare students for the real-world system design that they will see as engineers in the solar energy field,” he said. 

*Greg Kallio joined the CSU, Chico engineering faculty in 1988. Since then, he has taught courses in the areas of thermodynamics, heat transfer, energy systems, and air pollution control. His research interests include residential building energy efficiency, performance benchmarking of solar PV systems, solar energy applications in agriculture, and designing labs for undergraduate education in renewable energy, energy efficiency, and diesel engine emissions. In addition to his teaching and research, he is a faculty associate of CSU, Chico’s Center for Water and the Environment and a regular presenter at CSU, Chico’s This Way to Sustainability Conference.*




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Students will gain an understanding of the importance of PV monitoring and how environmental factors affect power output.

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**CIVIL ENGINEERING  
FACULTY USE  
SMARTPHONES TO  
IMPROVE WATER  
MANAGEMENT  
IN DEVELOPING  
COUNTRIES**

# SMART

## WATER

**F**ounded in 2013 by a team of engineers that includes CSU, Chico civil engineering faculty member Jeff Davids, SmartPhones4Water was created to leverage the power of smartphones to improve the understanding and management of water, most particularly in developing countries.

Since IBM introduced the first cellular phone that included both telephone and PDA features, a proliferation of smartphone manufacturers, a host of practical applications, reasonable pricing, and the expansion of Wi-Fi capabilities has resulted in unparalleled growth in the number of smartphone users across the globe. Today, smartphone technology is viewed as one of the most promising strategies for improving the lives of those residing in even the most impoverished countries around the world. In fact, in many developing countries, smartphones are now more accessible than clean water, electricity, or reliable ground transportation. It's not uncommon to see a woman in Kenya using a smartphone to receive money or make a payment, or a farmer standing in a rice field in one of the most remote areas of China talking on a smartphone.

SmartPhones4Water will use photographs taken with smartphones to measure water levels and flows. This will be enormously helpful to developing countries where water managers are struggling to adapt to increased demand for water and manage water effectively in the face of extreme weather events that create unpredictability of water supplies. The governments in many developing countries simply don't have the funds needed to create a robust and effective water treatment and water supply infrastructure.

Leveraging an innovative hydrologic monitoring technology currently in commercial use called MobileTracker, a water systems operator or hydrographer can take a field measurement by simply taking a picture; the rest is done automatically. Additional information including GPS information

and compass angle measurements is transmitted with each picture to a centralized server. Automatic pattern-recognition algorithms determine the water level, and each image is then stored in the database. Flow is calculated based on the site-specific relationship between water level and flow that is based on the type, size, and setting of the flow measurement device at the site.

The water level is accurately obtained by the pattern recognition software, and a value is displayed on the smartphone within 10 seconds of the picture. Once the measurement value is returned, the operator is prompted to confirm or repeat the measurement. An optional voice recording can store any specific notes about the measurement. If the water level isn't found within 10 seconds, the operator can either take another photo or manually enter the water level with a series of simple scroll wheels. The operator can also choose to have the photo visually assessed to determine the water level by manually zooming into the photo.

In the coming months, the creators of SmartPhones4Water will test this innovative monitoring system in Nepal. They have partnered with the Nepali Department of Hydrology and Meteorology (DHM), the International Network on Participatory Irrigation Management/ Nepal (INPIM/N), Kathmandu University (KU), and the International Centre for Integrated Mountain Development (ICIMOD) to create a pilot project that will measure water in the three irrigation service areas and nearby river systems of Taplejung, Dhankuta, and Sunsari Morang. The uppermost pilots in Taplejung and Dhankuta will focus on accurately quantifying flow rates in source rivers, the amounts diverted into the irrigation scheme, precipitation rates within the service area, lateral heading flows, and spills from the system. The Sunsari Morang irrigation scheme will focus on control of a selected lateral. 

*To learn more about SmartPhones4Water, contact Jeff Davids at [jdavids@csuchico.edu](mailto:jdavids@csuchico.edu).*



## *Curt* HASELTON

### Department of Civil Engineering

Curt Haselton joined the faculty of CSU, Chico in 2007. He holds both an MS and a PhD in structural earthquake engineering from Stanford University. Since accepting his position with the College of Engineering, Computer Science, and Construction Management, he has taught a variety of civil engineering courses, including Introduction to Civil Engineering, the Earthquake Engineering Capstone course, and the upper-division Earthquake and Wind Engineering and Steel Design courses.

Haselton's research is in the general area of performance-based structural earthquake engineering, with a primary focus on assessing the collapse safety of buildings in earthquakes. This involves issues of ground motion selection and scaling, nonlinear structural modeling and collapse simulation, and the treatment of uncertainties in both the ground motion and the structural modeling. He brings these three subdisciplines of research together (ground motions, structural modeling, and probability/uncertainty) for the common goal of determining how safe buildings are in earthquakes. His past research in this area has focused on modern reinforced concrete frames, but he is also interested in other types of modern building systems (e.g., concrete shear walls) as well as older non-ductile concrete frame buildings. His research has been supported by numerous grants from public and private sources.

Haselton regularly assists governmental agencies to enhance the safety of public and private buildings, most recently leading a team of 15 people to rewrite a chapter of the U.S. building code. He has made important contributions to the field and has been recognized by his peers for his outstanding work. On July 22, 2014, in Anchorage, Alaska, the Earthquake Engineering Research Institute (EERI) presented Haselton with one



of their most distinguished awards, the prestigious Shah Family Innovation Prize. This prize rewards younger professionals and academics for creativity, innovation, and entrepreneurial spirit in the field of earthquake risk mitigation and management. Haselton was recognized for his involvement in the development of cutting-edge, innovative solutions to problems in earthquake engineering and related disciplines.

*From left to right:  
Curt Haselton,  
Greg Watkins,  
Steffen Mehl,  
Dingsin Cheng,  
and Tyson Henry*

# LEADING FACULTY

## Dingxin CHENG

Department of Civil Engineering

Dingxin (Ding) Cheng joined the faculty at CSU, Chico in 2006. After earning an MS from the Institute of Civil Engineering at Northeastern University of China, he went on to earn an MS from the Department of Civil Engineering at the University of Toledo. His studies continued at Texas A&M University in College Station, Texas, where he earned a PhD from the Transportation and Pavement Material Division. Since joining the CSU, Chico faculty, Cheng has taught classes in the areas of transportation engineering, transportation pavement, asphalt-paving materials, advanced transportation engineering design, traffic engineering, and soil mechanics and foundation. He is the faculty advisor to the Institute of Transportation Engineers, a student-led group that promotes the profession among students.

A prolific researcher, Cheng has authored more than 80 publications in the areas of pavement preservation technologies, asphalt paving materials, pavement design and analysis, transportation, and geotechnical engineering. Cheng conducts research for many government agencies including the Federal Highway Administration, Caltrans, CalRecycle, the Alaska Department of Transportation, and various agencies throughout California.

In addition to his teaching and research, Cheng is the director of CSU, Chico's California Pavement Preservation Center, a partnership of government agencies, industry leaders, and academia that seeks to advance and improve pavement preservation practices through education, innovation, applied and practical research, technology transfer, and implementation. The center is instrumental in facilitating the development, testing, and advancement of innovative approaches to pavement preservation and pavement materials.

Since 2009, Cheng has received several awards from the University for his teaching and research including Outstanding Research Mentor (2013); Outstanding Faculty Award (2013); Outstanding Project Director (2011); Professor of the Year, ASCE Student Chapter (2010) and a Professional Achievement Honor for 2009–2010.

*To learn more about Cheng's research or the California Pavement Preservation Center, contact him at [dxcheng@csuchico.edu](mailto:dxcheng@csuchico.edu).*

## Tyson HENRY

Department of Computer Science

Tyson Henry joined the faculty at CSU, Chico in 2001 after earning a PhD in computer science from the University of Arizona, where he also earned an MS in the same academic discipline. Since then, he has taught classes in programming and algorithms, web programming fundamentals, software engineering, and the senior capstone. Henry also serves as the faculty advisor to Upsilon Pi Epsilon, the computer science honor society at CSU, Chico.

While at CSU, Chico, Henry has pursued his primary research interest in the area of group formation systems, specifically using computer applications to form groups that will ensure optimum learning among students. He has presented his research at technical symposiums, discussing the challenges of forming effective student groups using the three traditional approaches (random composition, self-selection, and manual creation by the instructor) and providing an alternative that holds greater promise for optimized learning. His research had led to the development of an open-source group-formation service, which provides an interactive environment that allows the instructor to experiment with different grouping parameters and grouping algorithms; a survey library that allows instructors to share grouping criteria; a mechanism for gathering and considering students' group-mate preferences; and a platform for researching, developing, and evaluating new grouping algorithms.

*To learn more about Henry's research, contact him at [rhenry@csuchico.edu](mailto:rhenry@csuchico.edu).*



2014

**Greg WATKINS****Department of Mechanical and Mechatronic  
Engineering and Sustainable Manufacturing**

Greg Watkins joined the faculty of CSU, Chico in 2007. He holds an MS in engineering management from Old Dominion University and a PhD in mechanical engineering from the University of North Carolina at Charlotte. Since accepting his faculty appointment at Chico, he has taught classes in graphics, finite element analysis, dynamics, and modeling and simulation.

Watkins' general research interests include pedagogy of engineering tools and commercial software and, more specifically, low-speed aerodynamics and human-powered vehicle design. His research has been published in the *Computers in Education Journal*, which is published by the American Society for Engineering Education.

In addition to his teaching and research, Watkins serves as the faculty advisor for the student chapter of the American Society of Mechanical Engineers (ASME) and the Human Powered Vehicle Team. He also oversees the Capstone Design Program for the Department of Mechanical and Mechatronic Engineering at CSU, Chico, providing mechatronic and mechanical engineering students with the opportunity to work on real-world projects sponsored by industry partners. Undergraduate students nearing graduation utilize competencies developed in their first three years of coursework to find solutions to specific design problems identified by project sponsors.

*For more information about Watkins' research or the Capstone Design Program, contact him at [g Watkins@csuchico.edu](mailto:g Watkins@csuchico.edu).*

**Steffen MEHL****Department of Civil Engineering**

Since joining the civil engineering faculty in 2007, Steffen Mehl has taught classes in fluid mechanics, water resources engineering, groundwater hydrology, pipeline hydraulics and design, and hydrology and hydraulics of open channel flows. In 1996, he completed his undergraduate work in environmental resources engineering at Humboldt State University. He then moved on to the University of Colorado, Boulder, where he earned both a master's degree (1998) and a PhD (2003) from the Department of Civil, Environmental, and Architectural Engineering's Water Resources Engineering Program. After earning his PhD, Mehl served a three-year term as a hydrologist with the U.S. Geological Survey in Boulder.

Mehl's research has been published in numerous academic journals and included in publications read by engineering professionals throughout the world. His research interests include flow and transport modeling in hydrologic systems, simulation of surface water-groundwater interactions, parameter estimation and uncertainty analysis in hydrologic systems, and computational methods for solving engineering problems.

Mehl serves as the academic advisor for the CSU, Chico student chapter of the American Society of Civil Engineers and as a consultant for the U.S. Geological Survey on groundwater model development. His professional affiliations include the American Geophysical Union, the International Association of Hydrologic Sciences, and the American Society of Civil Engineers. He is a member of the board of associate editors for *Groundwater*, a leading technical publication for groundwater hydrogeologists.

*To learn more about Mehl's research, contact him at [smehl@csuchico.edu](mailto:smehl@csuchico.edu).*

# GREENE ON GREENE

A new book written by mechanical engineering professor Joe Greene inspires manufacturers to integrate sustainable plastics, including those made from renewable resources and biodegradable plastics, in their production processes to reduce the known negative effects of traditional polymer-based plastics on people and the environment.



**PROFESSOR JOE GREENE  
AUTHORS BOOK ON  
SUSTAINABLE PLASTICS**

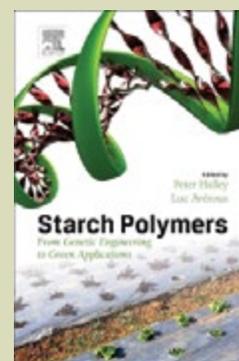
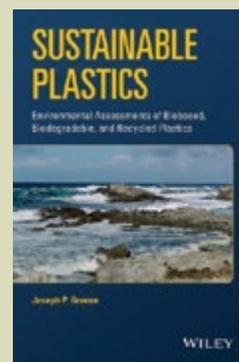
Published by Wiley Publishing in the fall of 2014 and available for purchase at major booksellers in September 2014, Greene's book, titled *Sustainable Plastics: Environmental Assessments of Biobased, Biodegradable, and Recycled Plastics*, illuminates and quantifies many of the harmful effects associated with the current processes used to manufacture products made of plastics. He identifies various sustainable plastics that can be integrated into manufacturing operations and provides a Life Cycle Assessment (LCA) that assists with the identification of the impacts of plastics and addresses end-of-life options for petroleum and biobased plastics.

Plastic products were first introduced to everyday consumers in the early 1900s under the trade name Bakelite. The new material was quickly accepted by consumers for its beauty and strength and by manufacturers for its relatively low cost and versatility. An explosion of product development followed, and by the 1950s, plastic products had become a staple in households across the globe. From toothbrushes to car parts to clothing, plastic became the base material for a host of products that were in high demand by consumers (remember that polyester suit you wore in the '70s?). Today, the volume and variety of plastic products available to global consumers is staggering, and despite fears over the harmful effects that unbridled plastic production is now known to have on people and on the environment, strong demand for plastic-based products is expected to continue well into the middle of the 21st century.

The economy and variety of products made possible by the use of plastic as a base material comes at a cost. The chemical components that make plastic so versatile are now also recognized for the serious health hazards that they pose. Many of the chemicals added to plastic to increase its versatility (e.g., increased viscosity, strength, durability, etc.) can be absorbed by human bodies, causing a host of negative health issues. Plastic debris can be ingested by animals to their detriment, and chemical compounds traditionally used in the production of plastic can leech into groundwater, posing additional health threats. Floating plastic waste, which can survive for thousands of years in water, disrupts marine habitats and litters the world's coastlines.

In addition to writing his new book, Greene served as a contributing author to a book published in June 2014 by Elsevier Publishers titled *Starch Polymers: From Genetic Engineering to Green Applications* (P. Halley and L. Avernous, editors). Greene penned Chapter 12 of the book, which addresses biodegradation standards in starch bioplastics. Both of Greene's latest publications are an extension of his work in the areas of biodegradable plastics and the environmental effects of microplastics on marine environments. He is passionate about discovering new strategies for identifying and reducing the negative impacts that traditional petroleum-based plastics have on the environment and human health. 

*Greene joined the CSU, Chico Department of Mechanical and Mechatronic Engineering faculty in 1998, after serving as a senior manufacturing engineer for the General Motors Corporation for nearly 15 years. To learn more about Greene's research, please contact him at [jpgreene@csuchico.edu](mailto:jpgreene@csuchico.edu) or 530-898-4977.*



# LOOKING

## DR. GARY SITTON AND DR. WILLIAM LANE

Computer Science Pioneers,  
Lifelong Friends

## Two Extraordinary Professors and the Alumni Whose Lives They Forever Changed

When alumnus Gary Sitton took his first computer science class at CSU, Chico, he had no idea that he would one day be a professor at the same institution. In fact, earning any college degree, no less a PhD, seemed unlikely for the young Sitton. “I had a 1.6 grade-point average out of high school,” he said, “but on a whim, I took the ACT exam and scored well enough to be admitted to CSU, Chico as a probationary student.”

He stepped onto the Chico campus in 1963 with no declared major, and by the middle of his sophomore year, his GPA had hit an all-time low. He received a letter from the dean of students informing him that he had one more semester to improve his grades or his information would be sent to the draft board. Thinking he was on his way to Vietnam, “I had a heart-to-heart talk with myself,” said Sitton, who by then had declared a business major, “and decided to try a class in an area I hadn’t tried before. I enrolled in a lower-division computer science class, got several weeks into it, and really liked it.”

Then things fell apart. Within a short span of time, Sitton’s dad passed away, his apartment burned down, and his appendix burst. “That was a crossroad for me,” he said. Sitton asked department chair Bill Lane to drop him from the class. After hearing about Sitton’s situation, Lane refused his request and instead encouraged him to take an incomplete and finish the class during the summer. “I told him I couldn’t afford summer school, but he said he didn’t care and urged me to just sit in the class. If I did well, he’d change the incomplete to a passing grade,” said Sitton. He was a star in Lane’s summer-session class and had soon read the textbooks for many of the other computer science courses that were being taught, later successfully challenging them for full credit. “If Bill Lane hadn’t taken a chance on me,” Sitton said, “my life would have turned out considerably different.”

A native of Clackamas County, Oregon, Lane joined the U.S. Navy right out of high school, completing the Navy’s electronics technology program during his service. From there, he attended Stanford University on the G.I. Bill, earning a BS in electrical engineering.

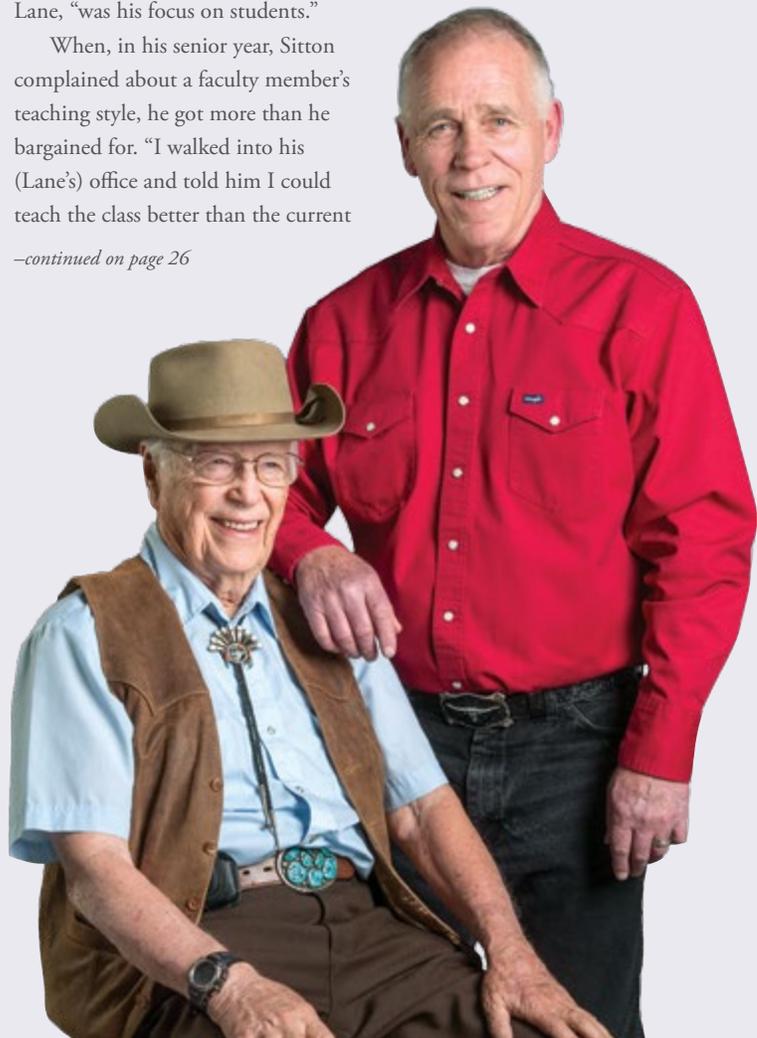
After graduation, Lane gained industry experience in the areas of electronics, electrical power design, and quality control, and in 1956 went back to school to earn a master’s degree in computer science from the University of Southern California. “I knew I wanted to go on to graduate school, and then I wanted to teach at a university,” said Lane. In 1960, he was invited to join the CSU, Chico electrical engineering faculty by President Glenn Kendall. A few years later, he met the young Sitton. “Gary was the best student I ever had,” Lane said.

Lane took Sitton under his wing, beginning a mentorship of the bright and sometimes brash 18-year-old that would last for the next 20 years. “The most remarkable aspect of this man” said Sitton of Lane, “was his focus on students.”

When, in his senior year, Sitton complained about a faculty member’s teaching style, he got more than he bargained for. “I walked into his (Lane’s) office and told him I could teach the class better than the current

—continued on page 26

*Sitton and Lane are “Founding Donors” for the newly established Computing and Electronics Academic Excellence Scholarship Endowment, which supports student achievement in the majors of Computer Science, Computer Engineering and Electrical Engineering. To make a donation to the scholarship fund please contact Hope Shapiro at (530) 898-3012 or visit [www.csuchico.edu/ecc/giving](http://www.csuchico.edu/ecc/giving).*



## PROFESSOR EMERITUS PHILIP HOFF AND ALUMNUS GRAYSON BECK

### Finding the Elegant Solution

Electrical engineering alumnus and entrepreneur Grayson Beck recently visited campus to speak with students about what it takes to succeed in school and in the workplace. A 1992 graduate of CSU, Chico's electrical engineering program and the founder of two very successful firms that provide precision laser-cutting services to the medical device industry, Beck knows a thing or two about both.

When asked which of his CSU, Chico professors had the greatest impact on his life and career, there was no hesitation. "Electrical engineering professor Philip Hoff was a professor who really encouraged the creative use of what he was teaching, and that was a wonderful thing," he said.

Faculty Emeritus Philip Hoff joined the CSU, Chico electrical engineering faculty in 1970. A professor who sought to move students beyond memorization of concepts to gain an understanding of the true essence of electrical engineering principles, he is the author of *Consumer Electronics for Engineers* (Cambridge University Press, 1998), a book that is touted as the first of its kind to explain clearly the operating principles of "real-world" electronic devices, including video recorders, compact disk players, and mobile phones. Hoff's ability to simplify concepts and their application to real-world problems is, according to Beck, what set him apart from other professors. "Dr. Hoff would assign what he called 'home problems,'" said Beck. "You would be given a problem to solve, and it would maybe take you two or three days to solve. If you came up with the elegant and more simplified solution, it would take you maybe an hour. Some guys took 25 pages to solve the problem, with every line filled. If Dr. Hoff solved it,



it would be maybe a half-page long."

Now a successful electrical engineering professional, Beck still uses what he learned in Hoff's classroom to solve problems in the simplest, cleanest, most efficient way possible. When designing the facilities for his most recent business start-up, Aduro Laser, a precision tubular-laser machining firm in Davis, California, he used what he learned from Hoff to create processes that allow for maximum efficiency and reduced waste, providing customers with the lowest cost and highest value. "The one thing I like to tell young engineers—and this came from Dr. Hoff—is to find the 'elegant solution.'"

Hoff's teaching was guided by the simple principle that every student could succeed if given enough time and attention. "It wasn't my job to weed out students," he said. "I wanted to help them get through. I wanted to build them up." To illustrate this point, Hoff shared the story of one student who came to his class with a 3.5 GPA for his lower-division work. He earned a 40 percent on his first exam in Hoff's class and did just as poorly on his second exam. Hoff called him in to see what the problem was. With some probing, Hoff learned that the student had been told that he was incompetent throughout his childhood. Hoff met with him every

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**"The one thing I like to tell young engineers—and this came from Dr. Hoff—is to find the 'elegant solution.'"**

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**CHICO STATE****Are You a Member of  
the Heritage Circle?**

You may already be a member of this elite group and not even know it!

The Heritage Circle is a special group of generous individuals who have named The University Foundation, California State University, Chico as a charitable beneficiary in their will, living trust, or other type of planned gift arrangement.

When you designate the College of Engineering, Computer Science, and Construction Management or any program within the college as a charitable beneficiary of your estate plans, you become a valued member of the Heritage Circle. Among those who have created a legacy for Chico State are General John Bidwell and his wife, Annie, who founded Chico State in 1887 by donating eight acres of their cherry orchard to establish Chico Normal School. Each year, we celebrate that legacy with a luncheon that recognizes all members of the Heritage Circle. We would be honored to have you join us.

For more information about the Heritage Circle and for confidential assistance with gift planning, please contact our development office.

**Gary Salberg**

Director of Planned Giving  
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**Hope Shapiro**

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and Construction Management  
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**LOOKING BACK****DR. GARY SITTON AND DR. WILLIAM LANE**

—continued from page 24

instructor. So, next semester Bill assigned the class to me. That started me on the path to a PhD and a 17-year teaching career,” he said.

Sitton taught computer science classes a CSU, Chico part-time for the next couple of years and received a full-time instructor’s appointment from Lane once he completed the requirements for a master’s degree in business with a thesis in computer science. Lane encouraged Sitton to get a PhD and welcomed him back to campus as a full-time associate professor when Sitton returned from the University of Alberta, Canada with his PhD in hand. Sitton credits Lane with his own successful teaching career. “I learned from Bill, and I think that’s one reason why I was a pretty good instructor. If you worked for him, you had better take care of your students,” Sitton said. “I’ve never seen a faculty member take office hours and advising as seriously as Bill did. He turned it into a science.”

Sitton left full-time teaching in 1980 to launch Bi-tech, a software application company that he founded with his wife, Judy. When they sold the company in 1995, Bi-Tech had more than 200 employees and nearly 300 clients. Since then, he has taught computer science classes from time to time at CSU, Chico and is a frequent guest lecturer on campus. Most recently, Sitton taught a course titled Technology Startups (TECH 598), which featured lectures from industry professionals who either started their own successful tech companies or were integrally involved in one or more start-ups. Sitton and his wife reside in Chico. 

*Lane retired at the age of 79. During his distinguished career at CSU, Chico, Lane positively influenced countless students. He taught the first programming course offered at CSU, Chico, and as a mentee of then-engineering division chair Herb Langdon, was instrumental in establishing the first degree programs in computer science offered on the Chico campus. Lane served as the first computer science department chair, and established and provided oversight for the first CSU, Chico computer center. Today, Lane and his wife Jeanne reside in Newcastle, CA. Sitton and Lane remain close friends and see one another often.*

**PROFESSOR EMERITUS PHILLIP HOFF  
AND ALUMNUS GRAYSON BECK**

—continued from page 25

day for the next two weeks to review the material that was covered in class and to address any questions that he had. After those two weeks, the meetings were held once a week. By the end of the semester, despite the two poor exam scores, the student was fifth in a class of 30 students and got an A- in the course. “I just had to encourage him to overcome the tearing down that he had received as a child,” Hoff said.

Hoff is pleased with Beck’s success. “He’s not designing anything that simple anymore, but he’s still looking for the simple solution,” he said. 

*Beck currently lives in Davis with his wife and four young sons. Hoff retired in 2004 and resides in Chico, where he continues to influence the lives of others by delivering weekly sermons at the Berean Baptist Church of Chico.*

# Alumni Connections

## IN CELEBRATION OF PHILANTHROPY

### Inaugural Event Unites Dream-Makers and Dreamers

**"We've heard nothing but positive feedback from everyone who attended this inaugural event for our college. We look forward to seeing everyone again in fall 2014."**

On Friday, Oct. 11, 2013, close to 100 students, alumni, and faculty gathered together in Chico at the Canyon Oaks Country Club for the College of Engineering, Computer Science, and Construction Management's (ECC) inaugural Celebration of Philanthropy. The event was designed to gather under one roof student award recipients and the many alumni and friends of the college who provide funding for scholarships and special projects. "It was a special evening and heartwarming to see so many people—students, donors, faculty, and staff—genuinely excited to meet and get to know one another," said Hope Shapiro, College of ECC advancement associate and event coordinator.

Serving as master of ceremony for the evening, College of ECC Interim Dean Ben Juliano welcomed guests who had traveled as much as 500 miles to attend

the event. Students were seated next to those who provide scholarship funds, giving both students and donors the opportunity to get to know one another over dinner. The evening drew to a close as scholarship donor Jan Bountis-Berthet spoke about the award she and her husband, Andre Berthet, established in memory of their son, Alex, who died just a year after his 2006 graduation from CSU, Chico. The Alex N. Berthet Memorial Engineering Award Endowment provides support to mechanical and manufacturing student club projects. "We've heard nothing but positive feedback from everyone who attended this inaugural event for our college," Shapiro said. "We look forward to seeing everyone again in fall 2014."

*The 2014 Celebration of Philanthropy event will be held on Friday, Oct. 24, 2014. For more information about this year's event or to learn more about how you can provide funds for scholarships or special projects, please contact Hope Shapiro at heshapiro@csuchico.edu or 530-898-3012.*

WHERE  
DREAM  
MAKERS  
AND  
DREAMERS  
COME TOGETHER

## COMPUTER SCIENCE ALUMNI REUNION

**Tech Museum Provides Ideal Setting for Sharing Fresh Perspective**

On April 3, 2014, CSU, Chico computer science alumni gathered in San Jose to share memories and discuss new strategies for providing students with cutting-edge curriculum and optimum real-world experience. The Tech Museum of Innovation provided the perfect backdrop for exploration of new ways for faculty and alumni to work together to prepare students for careers in the continually evolving tech industry.

Located in the heart of downtown San Jose, the Tech Museum of Innovation has become a landmark for visitors who want to taste the innovation that is quintessential Silicon Valley. While alumni and friends of the department enjoyed hors d'oeuvres and desserts, computer science department chair Melody Stapleton shared her vision for the programs she oversees and invited all who were present to get involved as the vision unfolds. "We look forward to staying connected and encourage each of you to stay engaged with the

department, students, faculty, and fellow alumni," said Stapleton.

Earlier in the day, the 30 top executives that comprise the computer science program's Industry Advisory Board (IAB) met at the museum to discuss the rapid growth in the CSU, Chico undergraduate and graduate computer science programs, and to explore strategies to attract and retain outstanding faculty.

Before the evening drew to a close, Stapleton issued a special thank you to alumnus Chris DiGiorgio, a 30-year veteran of the IAB, who made it possible for the event to be held at the Tech Museum of Innovation, where he has served as chair of the board of directors since February 2013.

*To learn more about the computer science program at CSU, Chico or to discuss how you can get involved, please contact Melody Stapleton at mjstapleton@csuchico.edu or 530-898-4010.*

# Raising a New Generation of Imagine

With team projects to be completed and final exams looming, spring is an incredibly busy time for all college students, but the members of the CSU, Chico section of the Society of Women Engineers (SWE) get even less sleep than most. They are busy planning and hosting events specifically designed to get local elementary school children excited about careers in science, technology, engineering, and math (STEM). “Hosting these events is a great way for us to positively influence students of a young age and introduce them to some of the many engineering and STEM-based career paths,” says Michelle Rodriguez, 2014 CSU, Chico SWE section president.

A large and vibrant STEM workforce is crucial to our nation’s capacity for innovation and global competitiveness; yet according to the U.S. Department of Labor, only 5 percent of U.S. workers are employed in fields related to science and engineering. Not so long ago, about 40 percent of the world’s scientists and engineers resided in the United States. Today, that number has shrunk to about 15 percent. Consequently, efforts have intensified to encourage and empower the nation’s K–12 students to pursue careers in STEM.

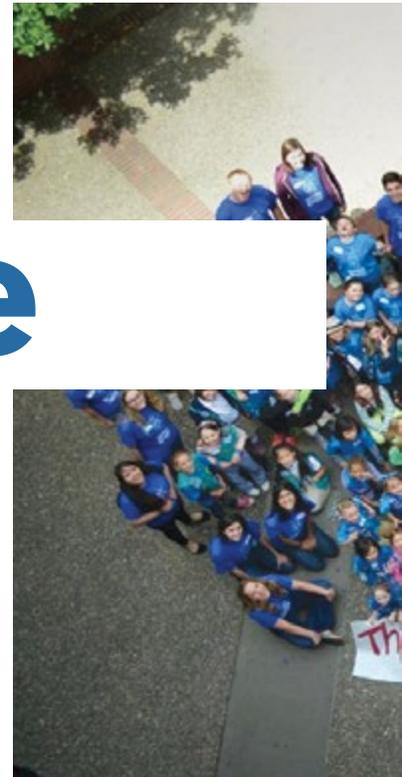
SWE’s annual Imagineer Day, held each spring, introduces K–6 students to a variety of scientific principles in a fun and approachable way. The event attracts a large number of students each year, and this year was no exception. On April 26, 2014, more than 120 local school-children crowded into Langdon Engineering Center to learn just how much fun engineering can be. The day started early as College of Engineering student volunteers demonstrated scientific principles and facilitated hands-on activities for large groups of energetic 4–12-year-olds. Whether they were making ice cream, learning about light-emitting diodes, building a city water system, or creating their very own bottle rockets, all who attended walked away with a new excitement about the fields of chemical, environmental, civil, and electrical engineering. When one volunteer

## Society of Women Engineers Inspire K–6 Students to Dream Big

asked a classroom full of children how many of them wanted to be an engineer, nearly every hand went up.

While both boys and girls are encouraged to attend SWE’s annual Imagineer Day, SWE event organizers are especially pleased by the large number of girls who, after attending the event, can begin to imagine themselves as engineers. Data from the U.S. Congressional Joint Economic Committee reveals that women comprise close to half of the nation’s college-educated workforce, but they hold less than 25 percent of STEM-related jobs. Consequently, women miss out on the earnings bump that STEM careers provide, and the nation fails to capitalize on innovations that could be contributed by women in STEM-related jobs.

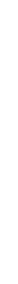
The Chico section of SWE regularly partners with local organizations to encourage more young women to consider careers in STEM. Most recently, SWE launched Small Satellites for Secondary Students (S4), a project created in partnership with the Girl Scouts of Northern California to familiarize local 11–16-year-old girls with various engineering skills and strategies, including soldering, the fundamentals of programming and code, and the processes of various sensors. Throughout the spring semester, the girls used small satellites to collect data, analyze the raw data collected, and create a presentation based on the data. The project culminated on May 31, 2014, with the Girl Scouts successfully launching their S4 rockets. “Above all, the girls learn that working cohesively as a team is vital to a successful outcome, and that anyone, especially women, can pursue any career in the math and sciences,” says SWE member and public relations coordinator Salam Ali. 




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*The Society of Women Engineers is a national nonprofit that seeks to help women achieve their full potential in all fields of engineering and expand the image of the engineering profession. The CSU, Chico section of SWE strives to forward the image of the engineering profession as a positive force in improving the quality of life, demonstrate the value of diversity, and encourage more women in the field of engineering.*

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## CONSTRUCTION MANAGEMENT STUDENTS TAKE HOME GOLD

: In Sparks, Nevada, Feb. 5–8, 2014, CSU, Chico  
 : construction management students nabbed first place  
 : at the 27th Annual Student Competition hosted by the

### Three Chico Teams Score Big at Annual ASC Competition

Associated Schools of Construction (ASC). Coached by construction management faculty member David Shirah, the seven-member team took home the top prize in the Preconstruction Services division of the competition. The team included Nicholas Keith, Jake Dumenigo, Thomas Ellery, Mike Gibbons, Sylvana Smith, Brandon Wallace,

: and John Koch.  
 : “We are excited to finish first in a division competition  
 : that is represented by some of the best private and public  
 : colleges and universities in the nation,” Shirah said.  
 : “This was definitely a team win with a lot of help from  
 : our team’s industry supporter, XL Construction from the  
 : San Francisco Bay Area.”

: The day held success for more than one CSU, Chico  
 : team. Faculty member Chris Souder coached a team  
 : of eight students who walked away with a third-place



trophy in the competition’s Heavy Civil division, and faculty coach Alan Bond’s seven-person team took home the third-place award in the Commercial division.

The Associated Schools of Construction is the professional association for the development and advancement of construction education, where the sharing of ideas and knowledge inspires, guides, and promotes excellence in curricula, teaching, research, and service. Chico regularly competes in ASC’s annual competition. 

# Solid Service

The Concrete Industry Management program at CSU, Chico is the only program in the western United States that combines technical knowledge and business skills training with an emphasis on all concrete, including manufactured concrete products, ready mix, contracting, and heavy construction materials used in the construction industry.



## INTERNATIONAL CONCRETE INSTITUTE STUDENT GROUP LEND A HAND TO LOCAL ELEMENTARY SCHOOL

Located less than 30 miles from the CSU, Chico campus, Los Molinos Elementary School is showing its age. When Concrete Industry Management (CIM) students learned that the school needed repairs to worn concrete walkways, they got to work. “We walked around the campus looking for areas that needed improvement,” said Los Molinos School Principal Jerry Hill. “Being we’re a 50-year-old school, they were not hard to find.”

Managed by members of the student-led International Concrete Repair Institute (ICRI) at CSU, Chico, the one-day project at the school focused on eliminating tripping hazards resulting from typical settling of hardscape materials and invading tree roots. Using a 7-foot grinder donated by Diamatic, a leading innovator of concrete grinding and polishing technologies, the students created smooth transitions between concrete sections around the classrooms and playgrounds, filled a gap in a concrete ramp, and

Many projects are conducted each year to provide CIM students with both traditional classroom instruction and practical hands-on experience.

painted reflective strips on steps between concrete and asphalt. The effort drew the attention of California state senator Jim Nielsen, who sent the club a letter thanking them for their service.

“The project was a success,” said ICRI club president Jaymi Hill. “We are hoping to continue these types of projects in other schools in the area so that we can use our knowledge, resources, and support from ICRI and the Chico State CIM program to benefit the community.”

## CONCRETE INDUSTRY MANAGEMENT STUDENTS PARTNER WITH HABITAT FOR HUMANITY

A backyard patio is essential in Chico, where warm weather and friendly neighborhoods motivate residents to spend ample time outdoors. In March 2014, CSU, Chico Concrete Industry Management (CIM) students partnered with Habitat for Humanity (H4H) of Butte County to ensure that the newest H4H house in Chico would include a large patio where outdoor living could be enjoyed by the family that would soon reside there. “What’s cool about this project is that instead of lab time, we do volunteer projects, which is better for the community and better for the students,” said Dylan Rapp, one of the CIM students who worked on the project.

This project began in the classroom where students in CIM faculty member Tim Hostettler’s Concrete Construction Methods class studied the theory and practical considerations associated with transporting, placing, consolidating, finishing, jointing, and curing concrete for cast-in-place foundations, pavements, on-ground slabs, and structural frames. On the worksite, the students gained practical skills as they poured and finished a professional-grade concrete patio. “All the techniques we learn from the books, we put in practice in the field,” said CIM junior Wiatt Chase. 📍

To learn more about the program or to sponsor a project, visit [www.csuchico.edu/cim](http://www.csuchico.edu/cim) or contact CIM Program Director Tanya Komar at [tkomas@csuchico.edu](mailto:tkomas@csuchico.edu).

# Every Gift Matters

Year after year, we count on gifts of all shapes and sizes to help us preserve the Chico Experience. Every gift helps us provide students with outstanding instruction, opportunities to work on real-world projects, and an environment that fosters lifelong friendships and invaluable professional networks.

## AREAS TO SUPPORT

Laboratory equipment to help us maintain state-of-the-art facilities

Hardware or software to provide students with access to cutting-edge technology

Support for attracting and retaining energetic and innovative faculty members

Scholarships to attract and support bright and hardworking students

### Questions?

Please contact Advancement Associate Hope Shapiro at 530-898-3012 or [heshapiro@csuchico.edu](mailto:heshapiro@csuchico.edu).

## WAYS TO GIVE...

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Make a gift using our secure server. Go to [www.csuchico.edu/ecc/giving](http://www.csuchico.edu/ecc/giving).

### In-Kind Gifts

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This tax-wise method allows you to give appreciated stock to the University and receive a charitable deduction for the full fair market value of the gift.

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Double the impact of your personal gifts to the college through an employer matching gifts program. Check here to see if your company will match your gift: [www.matchinggifts.com/csuchico](http://www.matchinggifts.com/csuchico).

### Gifts by Mail or Phone

Call 530-898-3012 or send your gift to CSU, Chico, College of ECC 400 W. First Street, Chico, CA 95929-0003





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