California State University, Chico

ecc CONNECTIONS

Fall 2010

College of Engineering, Computer Science, and Construction Management

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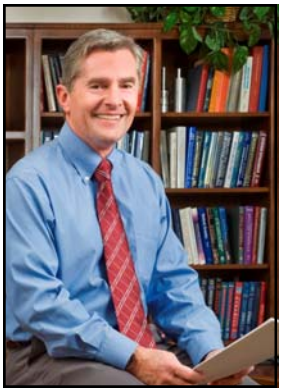
# Message from the Dean



Holiday Greetings to you and your family from Chico !

If you routinely follow the State and national news, you are keenly aware of the importance of job creation and economic development in these trying economic times. I would like to share some related developments since the last college newsletter.

First, we have a newly transformed, Sustainable Manufacturing program, born from our former Manufacturing Technology program. The change is in response to industry demand for technical graduates who have technology/physical science foundations, combined with a thorough understanding of business and resource management, as well as the lifecycle effects of manufactured goods. For manufacturers doing business in California it is essential that they are thinking and acting more "green" these days, carefully considering energy use, and both waste stream and landfill issues that are a consequence of the processes they use and the goods they produce. The graduates of this revised program will be well positioned to assume leadership positions in California's manufacturing companies.

Secondly, the Sustainable Manufacturing program was a key partner in a successful grant initiated by the Northern Rural Employment & Training Consortium (NoRTEC) this summer from the California Labor and Workforce Development Agency and the Employment Development Department to stimulate workforce development related to green technologies. The grant has resulted in $500,000 in support for the Sustainable Manufacturing program and the creation of an Innovation Lab in south Chico that will open in January 2011. The Innovation Lab is a business owned, dedicated environment for incubating new products and nurturing emerging technologies, as well as providing business assistance to accelerate growth through start-up and early product development.

Our presence in the Innovation Lab is to provide technical assistance in job creation, as well as encouraging collaboration between the College and industry. Further, the Sustainable Manufacturing program and the College of ECC are partners with the Golden Capital Network in a successful designation as an Innovation Hub – as part of the Governor's Office of Economic Development's Innovation Hub Initiative aimed at leveraging local resources and the College's partnership to create an innovation platform for startup companies and improving local economic development.

I am excited about all of these developments around the Sustainable Manufacturing program and the impact we might have on the development of green technologies and related jobs. These developments demonstrate that we must

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work as partners with government agencies, federal laboratories, and the private sector to improve our global competitiveness. We will have more developments in this arena to share in the future.

In spite of the many challenges that we all face this year, we hope that this newsletter brings good cheer from the faculty and staff in the college, and rekindles good memories of your time in Chico. On behalf of the faculty and staff of the college, I wish you and your families the best for the coming holidays and the year ahead!

Sincerely,

Michael Ward, Dean

College of Engineering, Computer Science and Construction Management

# Structurally Sound

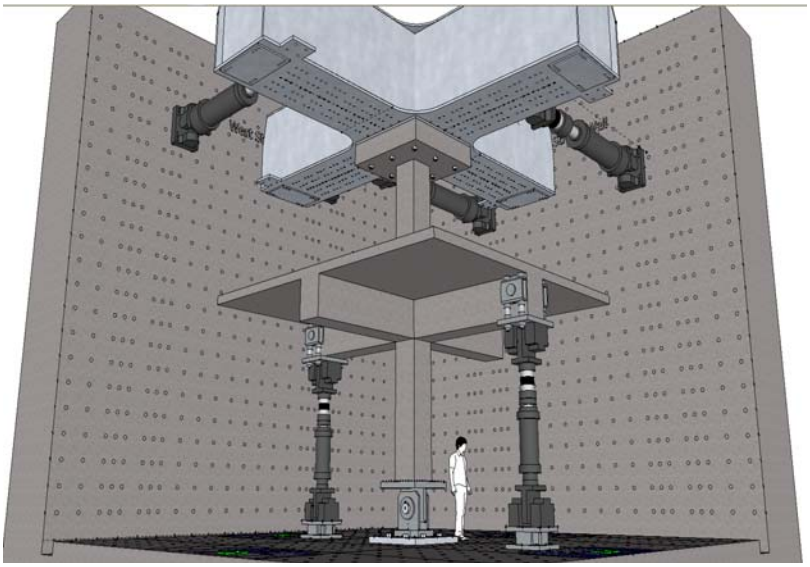
Creating full-scale building models, developing new building codes, and simplifying seismic building code are all in a day's work for Dr. Curt Haselton.

Chair of the Department of Civil Engineering, Dr. Haselton is working on a collaborative $1.1 million grant project to build full-scale frame models to more accurately test the collapse of buildings under seismic conditions. Funded by a grant from the National Science Foundation, Haselton is working with faculty from the University of Texas Arlington, the University of Illinois Urbana-Champaign, and the University of Minnesota.

"We wanted to create a model that would produce the best data," Haselton explained. "This is the first time such a detailed model will be used for the test."

The research tests modern reinforced concrete moment frames and high performance fiber reinforced concrete moment frames in extreme earthquake motion. Using the data, collapse simulation models of primary load-resisting components will be improved.

(Continued on page 9)



# Prison Guardians:

## *Restoring Alcatraz*

Life at a prison was enjoyed by five concrete industry management students this summer as they worked on Alcatraz Island.

Students in the Concrete Industry Management program spent their summer restoring and evaluating the concrete on Alcatraz Island. The Summer Field School, a new partnership between the Golden Gate National Recreation Area (GGNRA) and CSU, Chico, allowed students to work as National Park volunteers for a 10-week internship. Students Andrew Billingsley, Stig Strombeck, Jonathan Hall, Bryan James and Trevor Prater worked with college faculty, industry experts, and National Parks Service personnel to evaluate and repair concrete that spanned more than 150 years old.

"The students design and perform the technical aspects of concrete repair in the extreme exposure condition caused by the damaging salty environment," explained Dr. Tanya Komas, the faculty advisor for the project. "Students deal with natural resource management that includes everything from protected nesting birds to historic gardens, and address the concerns of cultural resource management in terms of all built structures, both above ground and below."

The program, funded by a grant from the GGNRA, allows students to return annually to continue resto-

ration work on the federal prison site. Culturally, Alcatraz is famous not only for the large, concrete federal prison, but also for the military fort that occupied the island in the early 1900s.

Concrete dating from 1850 is in disrepair due to the damp, rainy weather. The Parks Service was interested in having the concrete evaluated and improved to extend the life of the historic site and allow more visitor access to the area. After reading about the successful Concrete Industry Management Program at Chico and discussing the project with Komas, the Parks Service chose Chico State students for the project.

“Part of the success of the Field School was industry support in terms of time, talent, and treasure, all of which are necessary for a student experience of this depth,” Komas said. “Among others who were involved, BASF contributed the repair materials, generously paid the student stipends, and sent national-level technical experts to lend guidance on the use of their specialty materials, Hilti supplied power tools and personal safety gear, and Jim Markovich and Heidi Braverman provided professional guidance.”

Students remain committed to the ongoing project and received recognition for their work.

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# Inspiring Education

Alex Berthet had a boundless zeal for life. The manufacturing engineer (BS 2006) was a co-captain of the super mileage vehicle project team and a teaching assistant during his years at Chico State. After his tragic death in 2007, his family was determined to inspire other students in their son's memory.

Parents Andre and Jane wanted to create a fund that would support engineering student groups. They decided to establish Alex's Fund for Innovation in memory of their son. Family and friends donated generously to the fund. This year, the first student group was awarded financial support of $2,000. The endowment will provide annual funding for innovative engineering projects for perpetuity.

"We wanted to provide additional funding for the engineering competitive projects so students could think outside of the box- Alex's favorite phrase" Alex's mom, Jane Bountis-Berthet, said. "Alex loved a challenge, the camaraderie of a team and was satisfied with nothing less than the best."

This year student groups competed for funding by completing a detailed application. Applicants had to address six criteria in their proposal describing why they deserved the financial support for their group. The criteria relate directly to the way Alex lived his life. Intellectual collaboration, innovation in design, selfless leadership, and passionate commitment to the objectives of the project must be specifically detailed in the proposal.

"Alex enjoyed building and creating. He loved to think," Jane said. "As an advanced scuba diver, he invented and built a dive light for deep water conditions, a racing motorcycle, and too many other projects to name. With his good friend Raymond Gage (BS 2000) he built "The Orion" a human powered vehicle (HPV) which currently holds the world speed record."

Societal and humanitarian goals are also addressed in the application process. Finally, an enthusiastic quest for knowledge must be shown. Alex's interest in numerous activities and his desire to continue learning not only in the educational setting, but in his career and personal life, was a strong component of his personality. His drive for perfection and collaboration lead him to a goal of working in aeronautics and space travel.

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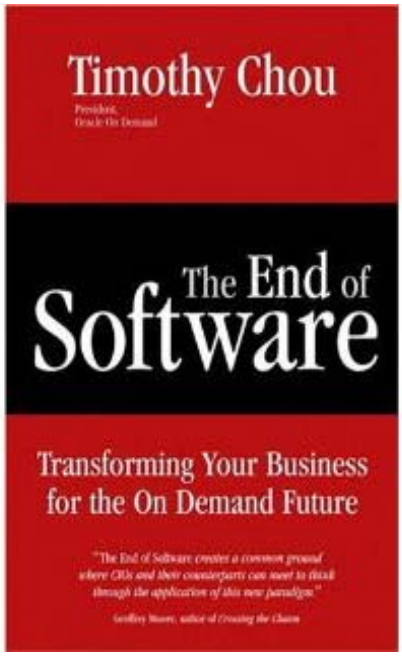
## Lecture Series Brings Cloud Services Visionary to Chico

For the sixth consecutive year, the Chico State Lecture Series brought talented and innovative business practitioners to campus. This fall, author and Stanford University lecturer Dr. Timothy Chou presented students, faculty and staff with his vision for the next generation of computing.

The lecture, titled *Cloud Computing: The End of Software*, described innovative computing ideas that provoked discussion among lecture attendees. Dr. Chou was an early leader in the movement of business applications delivered as cloud service at Oracle, beginning in 1999. The model he discussed in the lecture has been adopted by Fortune 500 companies internationally.




Dr. Chou was the president of Oracle On Demand, currently serves as a member of the board of directors of Embarcadero Technologies (EMBT), and is a member of the advisory board for WebEx. As a lecturer in computer science at Stanford University for more than 15 years, Dr. Chou has been featured in Forbes, Business Week, and The Economist for his accomplishments in his field. The annual Chico State Executive Lecture Series is co-sponsored by the College of Business and the College of Engineering, Computer Science, and Construction Management.

## Retirement of Dedicated Staff Member

Long-time administrative support coordinator for the College of Engineering, Terry Battle, is retiring in December 2010. Terry has worked for Chico State since 1982 and said she enjoyed watching students grow and succeed.

Terry began her career in the Department of Mechanical, Mechatronic and Manufacturing Engineering. In 2003, she moved to her current position. In 2007, Terry was named Staff Member of the Year by the campus community. As an energetic, organized planner, Terry was responsible for planning numerous college-wide events. She served as Staff Council President in 2005-2008.

She is excited to work part-time, volunteer and spend time with her family.

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# Best in the West

Students in computer science won the Association for Computing Machinery Pacific Northwest Programming Contest. They beat 74 other universities to win the title. CSU, Chico will compete against 100 schools in the 2011 World Finals of the International Collegiate Programming Contest (ICPC) in Egypt in February.

Sponsored by IBM, the competition requires student teams to solve difficult computer problems in a race against time with other students. Chair of the Department of Computer Science Moaty Fayek likened the competition to the Olympics for computer scientists.

Fayek explained that Chico State's team was tied with Stanford's top team until the last 30 seconds. Student team leader David Stolp handed the correct answer to the judges before Stanford's team could provide the answer, and Chico State won the competition.

## Student Achievements

Applied Computer Graphics students won two awards at the Fall 2010 Media Arts Festival. In the Interactive Category, David Logan won second place for *Earth Haven 2: Retribution*. In the Animation Category, Samuel Fries won third pace for *Catfight!*

Chico State Game Studios large-scale student production, 40 Stories, was entered into the Independent Game Festival 2011.

Students Kenny Anderson and Kurt Feudale have been selected as one of twelve finalist teams for the US Imagine Cup Game Design-Windows/Xbox (XNA) competition for their game "Green World". The competition will be held in Seattle in April 2011.

Civil engineering student Andy Langelier received the Lieutenant Merton Rawlins Merit Award in Spring 2010.

SEEHD Environmental Engineering student group worked in Honduras during the summer of 2010 creating safe drinking water storage.

## Faculty Achievements

Dr. Clarke Steinback, Applied Computer Graphics, was honored with the Excellence in Education Award by CEPCO during its 26th Annual Excellence in Business Awards, sponsored by the California Faculty Association.

Dr. Ding Cheng, Civil Engineering, received early tenure and is the director of the Pavement Preservation Center at Chico State.

Dr. Curt Haselton received early tenure and became chair of the Department of Civil Engineering.

## Alumni Updates

Mike Carlomagno is a project engineer at DEC Engineers, Inc. in San Diego.

Kit Miyamoto is working with the non-profit Pan American Development Foundation as a structural engineer in Haiti. He has been featured on CNN.

Jason Holpuch is a systems engineer at LSI Corporation in Colorado Springs, Colo.

Derek Janssen is an NPI engineer at Enphase Energy in Petaluma, Ca.

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*(Alumni Highlights* Contd.)

Eddie Collyer is a mechanical engineer in an applied technology group for Pacific Gas and Electric.

Don Vilen, is a chief computer scientist at Buysight, Inc. Previously, he worked at Microsoft, Scalability Experts and Bloomberg.

James Fowler is the president of Novo Construction in Menlo Park, Calif.

Matthew Dean was appointed director of services for CDC Software's TradeBeam subsidiaries in San Mateo, Calif. He was also reelected to the Campbell Union High School Board of Trustees.

# Courses Lead to Employment Opportunities

Two courses in the College of Engineering are being sponsored by Webcor. The sponsorship provides students with 3D and 4D architectural design software and two courses on how to use the equipment. The software allows students to spot and resolve design problems before construction, which reduces costly mistakes in building. The software is used by professionals, but is less available to university students. Webcor has provided support of $20,000 per year for the past three years to support the courses and recently hired two Chico State graduates.

(Continued from *Structurally Sound* p.2)

"Everyone will have a better understanding of the internal damage progression because we will use unique internal damage imagery," Haselton explained.

The models will be built and housed at the University of Minnesota. Haselton's portion of the research includes design, development of loading protocols for testing, improving calibrated models for the collapse simulations, and creating the pilot studies for the frames.

Haselton's research interest also extends to serving on an issue team to propose revisions to Chapter 16 of the Building Code. Eight members serve on this team and are charged with developing a proposal for improving the high-end seismic building code.

"While the high-end building code is definitely interesting," Haselton said, " I am also working with a group to make using the seismic code more simple for engineers in less seismic areas."

Pulling information from the seismic code, determining what is useful in less seismic areas, then writing a new code specifically for those areas will be valuable. Many engineers in low seismic areas have trouble wading through the portion of the seismic code that apply to their structures.

"This is interesting and exciting work," Haselton said. "These work groups are changing the way we think of buildings in seismic areas."

Alex Berthet preparing a vehicle for competition.

*(Continued from Berthet p. 6)*

Interest in constantly improving design and solving engineering problems set the Society of Automotive Engineers mini baja team apart in their application for Alex's Fund for Innovation. The mini baja team was honored to receive this year's support. The team wrote in their application that "the mindset of helping others when working in groups is extremely important. It creates teammates that are selfless and willing to help others without an ulterior motive." This is the way Alex Berthet lived his life. His family is now providing that same inspiration to student groups in the College of Engineering.

TELL US ABOUT YOURSELF!

*Send alumni updates to*

*eccconnections@csuchico.edu*

**Forbes Magazine ranked CSU, Chico as one of the top 20 Best Colleges for Minorities in STEM (Science, Technology, Engineering, Math). CSU, Chico is the only public university in California in the top 20.**

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**- Chris DiGiorgio,**

**California Managing Director,**

**Accenture**

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