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Message from the Dean



Welcome to the first on-line edition of the ECC Connections newsletter. I am extremely proud of our student and faculty success, and plan to use this on-line newsletter to keep you informed about some of the student projects, competitions, and faculty research that distinguish Chico State from others.

We have a unique story. As you know, many of the experiences you had at Chico State as students were both career and life changing. Your education included both in-class and co-curricular activities that made your years in Chico exceptional. We are now calling this collection of experiences "*The Chico Experience*." While it may have been different for each of you, you can look back at the wealth of experiences that you were afforded during your time in Chico and reflect on what that means to you.

We continue the tradition. Our students continue to compete successfully in intercollegiate competitions against teams from name schools, with more resources, and in many cases our student teams dominate the others. We hope that you enjoy reading about some of our most recent success. We have some new programs

and activities such as a vibrant *Engineers Without Borders* chapter that is taking community service globally. We have new programs in Applied Computer Graphics and Concrete Industry Management that promise to serve emerging disciplines, while we have modernized existing ones. We continue to seek new ways to educate students more effectively, foster innovation, and help develop the future workforce of California.

I encourage you to give us your feedback on our newsletter, and share your career and personal news with us. We will be adding alumni news sections that will help you connect with former classmates. I also encourage you to consider including the college and your department to those tax-deductible organizations that you currently give to generously. We would not be able to continue to offer the kind of educational environment and activities that define *The Chico Experience* without your generous support.

Best wishes to you and your families for the holidays and coming year.

Sincerely,

Mike

Michael Ward, Interim Dean
College of Engineering, Computer Science, and Construction Management

Student Achievements

Manufacturing Perfection

Manufacturing Technology students won the Grand Prize in the Western Tool Exposition and Conference (WESTEC) Manufacturing Challenge for the fourth consecutive year.

Students Earn Top Honors

Electrical engineering students won first and second prizes at the IEEE Electromagnetic Design Contest. This is the fifth time in the past eight years that CSU, Chico students won an award. CSU, Chico is the only university to be a repeat prize winner in the competition.

Computing Machinery Award

Ten computer science students finished second place in the Association for Computing Machinery (ACM) International Northwest Regional Collegiate Programming Contest at Stanford University in Fall 2007.

Building Bridges

The Spring 2008 steel bridge team placed third overall in the Mid-Pacific Steele Bridge Competition. The competition judges timed construction, strength and weight of the bridge.

In the 90th Percentile

Computer Science and Math major David Stolp ranked in the 90th percentile on the Putnam Math Competition exam. Stolp is one of only three students to place in the 90th percentile from all California State University campuses.



Elliott Family Foundation Scholarship

Well-respected home builder Elliott Homes has hired several graduates of Chico State's Construction Management program. The company's non-profit division, the Elliott Family Foundation, has generously given something to the university; a scholarship for students.

This is the fourth year the Elliott Family Foundation has supported a \$10,000 annual scholarship for a Construction Management Student. The five-year scholarship promise has allowed student Jeremy Walson to explore various activities while attending Chico State.

"This scholarship has been an immense aid in my pursuit of a college education," Walson said. "Because of their generosity, I have had the time to pursue extracurricular activities such as IOTA IV (the construction management honor society), the ASC competition, and the Re-build New Orleans Project. I truly appreciate the opportunities this scholarship has afforded me."

Approximately 10 percent of the employees at Elliott Homes' corporate office in Folsom, Calif., are graduates of Chico State and others work at construction sites in California and Arizona. Roxanne Elliott, administrator of the Elliott Family Foundation, said these graduates have a strong background in construction management, but also know about land development, entitlements and how to handle city meetings.

"Chico State graduates are well-prepared to work in our company," Elliott said. "We wanted to assist one of the best programs in California for Construction Management."

Currently, Elliott Homes has the bulk of their housing developments in the Sacramento area, with others in

Phoenix and Yuma, Ariz. Elliott Homes is a family-owned business with a proud history. Harry C. Elliott began building homes in 1914. Three generations later, the Elliott family has built nearly one in three homes in the Folsom, Calif. area. The company's history spans developments throughout California, Arizona and Texas. A long-term commitment to quality and reliability has kept the company at the forefront of building, according to Elliott.

"The Foundation wanted to support the scholarship out of respect and the history we have with the Construction Management program," Elliott said. "We wanted to make a special effort to fund Chico

State."

Elliott explained that the Elliott Family Foundation's mission is to be an active partner in communities where Elliott Homes builds. In addition to scholarships, the Elliott Family Foundation funds a variety of causes from shelters for children and battered women to health care research for stroke victims. Elliott said the Foundation works with charities, hospitals, schools, agencies and other non-profit organizations to ensure a superior quality of life in areas the Elliott family has helped develop.

"We're really fortunate to have Elliott Homes and the Elliott Family Foundation working together," Elliott explained. "Together we are firmly committed to our charitable purposes and plan to expand where and when we can."

"We wanted to assist one of the best programs in California for Construction Management."

Roxanne Elliott

Professors Begin Work on Four Year FIPSE Award

Spending a semester in Mexico or Canada just got easier for CSU, Chico engineering students.

CSU, Chico, was one of only nine recipients of the US Department of Education's Fund for Improvement of Post-Secondary Education (FIPSE) grants. The North American Mobility Program awards \$200,000 to organize an engineering student exchange program among six universities in Canada, Mexico and the United States. The goal of the program is to mutually prepare engineers to work effectively in international technology and business. The exchange gives students an opportunity to learn about other cultures while studying engineering so they can later compete in a global society.

"You have to understand people's backgrounds and cultural differences to be successful."

Dr. Al Richardson

Dr. Albert Richardson (Electrical Engineering) secured the award after a hefty application process in 2007. Coordinating the budget and scope of work with the University of Texas, El Paso, University of Manitoba, University of Saskatchewan, University of Zacatecas, and University of San Luis Potosi took hours of discussion.

"This college has a pioneering roll in leadership education in engineering," Richardson said. "We all worked to get this grant and it paid off."

After the first year of planning activities and signing a Memorandum of Understanding (MOU) by all partners, the next three years will be dedicated to providing the best experience possible for the exchange students. CSU, Chico engineering students must be in good academic standing, attend informational sessions and pass an interview process if they are interested in participating. Students in-



terested in studying in Mexico must also take a semester of Spanish or complete a three week immersion program prior to beginning their semester abroad.

"The engineers of the 21st Century need a global perspective," Richardson said. "You have to understand people's backgrounds and cultural differences to be successful."

Students will receive a \$3,000 stipend to help defray costs. They will continue to pay CSU, Chico tuition, but will not be assessed tuition at the exchange university. Course credit at the other universities is transferable.

CSU, Chico College of Engineering has received other FIPSE awards in the past, but according to Richardson, most engineering programs do not apply for this type of grant. "Liberal arts has more of a tradition of studying abroad," Richardson said. "They understand the value in it. At Chico State, Engineering also understands the importance of connecting with other cultures. It's a very serious business and technological issue."



Mechatronic Engineering in Vietnam



As the Government of Vietnam moves from a secluded, Communist country to a recognized World Trade Organization (WTO) member, it has created a partnership with CSU, Chico's Mechatronic Engineering program.

In 2005, engineering professors at Hanoi University of Technology (HUT) were struggling to create a mechatronic engineering program that would fulfill their Ministry of Education and Training's lofty goals. They needed to create programs in all engineering disciplines, teach all courses in English, and secure lab equipment. Professors at HUT realized that they also needed to learn more about mechatronic engineering around the world to successfully create their own program.

After failed attempts to partner with both Russia and Germany, HUT found CSU, Chico on the Internet. CSU, Chico offered an accredited, professional program where students successfully graduated and found jobs in technology and manufacturing, both areas that were destined to grow in the newly opened Vietnamese economic market.

Dr. Ramesh Varahamurti was surprised and pleased when Dr. Ngyen Thi Phuong Mai contacted him about a possible partnership to create a mechatronic program at HUT.

"The objective of this collaboration is education," Varahamurti said. "Chico is their model program."

Each year, five or six HUT faculty members come

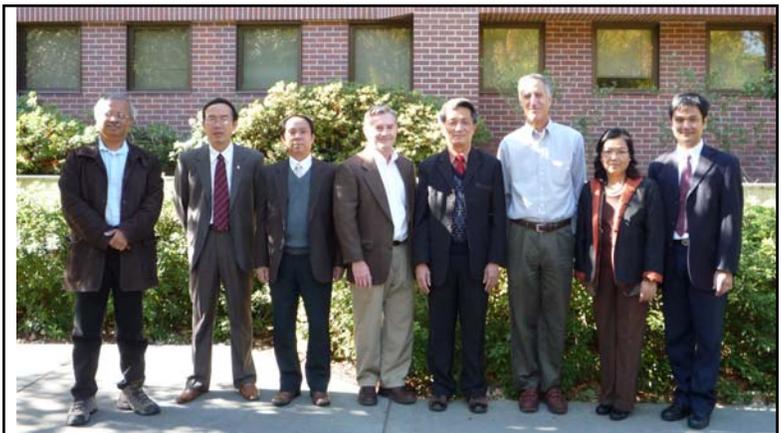
to Chico for one or two months. They observe every course in Mechatronic Engineering, take notes, video, and discuss curriculum with CSU, Chico faculty. Originally, they planned to establish a program mirroring CSU, Chico's in five year (by 2010), but today they think it may take more time.

"They have a big list of things they need to do," Varahamurti said. "Every time they are here, the list gets longer. But they are working on it."

Cultural differences play a significant role in the HUT faculty's creation of a program. The Ministry of Education and Training must approve program curriculum, changes and provide funding for lab equipment. CSU, Chico has flexibility as it creates or changes curriculum and often tries to secure lab equipment from donors. Donated lab equipment is not approved by the Ministry of Education and Training.

Varahamurti has traveled to HUT twice during the past three years. His most recent trip in June 2008 illustrated this difference. A piece of equipment in the HUT lab needed a small spring, approximately the size of a spring in a ballpoint pen. As Varahamurti attempted to fix the machine with the ballpoint pen spring, faculty at HUT told him he must stop. They had to report the broken equipment to the Ministry of Education and Training, wait for the Ministry to order the part, then for someone to install it.

Continued on page 8.



Engineers Without Borders

Designing a waste water treatment facility is no longer just a class project. For some students, it's a link to another world.

In 2005 Dr. Stewart Oakley (Civil Engineering) and a small group of students began a student chapter of Engineers Without Borders (EWB). The organization's mission is to improve the quality of life for individuals worldwide. And that's the goal that propelled Oakley and the students to begin raising funds for a project they wanted to complete.

For more than 20 years, Oakley has worked in Latin America on waste water and waste management projects, so it seemed like a good place for the student EWB group to begin. The municipality of Tela, Honduras had a waste water facility that was filled with sludge for of lack of maintenance over a 12 year period. It was on the verge of failing because the community did not have adequate funds to operate and maintain the facility.

"If they lost their treatment program, they wouldn't get another facility," Oakley explained.

In 2006, Oakley and the students traveled to Honduras and stayed in the community for two weeks. During that time they surveyed the area and designed a solution that would maintain the facility.

"They needed our technical assistance to make this work," Oakley said. "We completed a design that removed the sludge and helped them operate the facility consistently during the removal process, which took more than a year."

CSU, Chico EWB students designed a plan that allowed waste water influent to bypass the lagoon full of sludge so the sludge could properly be removed. It cost \$25,000 to complete in 2008. The students not only learned the design concepts necessary to solve critical waste management problems, but were also introduced to a new culture. Student EWB member Ben Forte found the project technologically challenging and important.

"My interest in EWB came from my interest to work with the environment, to help people and to learn as much as I can about different cultures," Forte said. "When I was introduced to EWB three years ago, I saw EWB as a way



to meet other people in order to accomplish these interests."

Oakley said that understanding the culture of the area is a vital part of creating an engineering strategy that works. Many groups donate money or complete projects in the region that cannot be maintained.

"Landfills in the US don't work in Honduras because they can't afford to operate the bulldozers," Oakley explained. "They don't have the resources to pay for the equipment and a person to run it. So these landfills turn into open dumps."

Oakley and the EWB students are now focused on completing a new project and including students in various engineering departments on campus. Student Louise Fox worked on the EWB Honduras project.

"This year we have our first Co-funded senior design project, a portable windmill powered pump which will be used to raise rainwater to a pressure head that would allow flushing toilets and indoor plumbing," Fox said. "The project is based in Antigua, but the windmill power will be useful in any windy location."

The students and faculty at Chico State are interested in increasing their involvement with EWB.

"You have to do something to help," Oakley said. "You have to improve the situation."

D-Day Site Provides Research

Last Spring, CSU, Chico students worked in D-Day bunkers in Pointe du Hoc, Normandy, France.

Dr. Tanya Wattenburg Komas traveled to France with five Concrete Industry Management (CIM) students to assess the concrete bunkers that are slowly crumbling. Texas A&M University, who has worked on the project since 2003, partnered with Chico State because Chico specializes in historic concrete evaluation and repair.

The goal of the project was to survey the site and evaluate the cliffs of the historic landing site on which the concrete structures rest. The Chico State team assessed the condition of the concrete structures and provided needed information about the depths of the foundations. A preliminary “existing conditions” report will combine previous laboratory testing results and the recent fieldwork results. This information will be used during the cliff stabilization phase of the project.

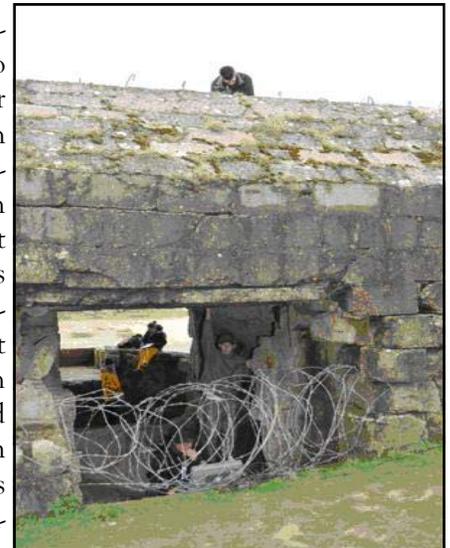
“Some of the structures were remarkably intact while others showed damage as a result of the bombing,” Komas said. “The concrete may not have cured completely at the time of the invasion.”

Special equipment was necessary to perform the careful task of evaluating the current condition of the concrete at the historic site. Larry Olson, PE, owner and president of Olson Engineering, volunteered the use of his company’s equipment and his time for on-site student training so they could complete the testing.



“The project afforded the CIM students the opportunity to become proficient at operating the Olson Engineering state-of-the-art non-destructive testing equipment,” Komas said. “They also collected valuable data about the overall existing conditions of the concrete and reinforcing in several key structures.”

The project allowed students to use the newer equipment with the more traditional units such as the Schmidt Hammer. Komas said the combination of equipment and collaboration with faculty and students from Texas A&M was an invaluable experience.



“The students completed an incredible amount of work with proficiency and professionalism, several days of which were accompanied by gale-force winds and heavy rain,” Komas said. “That they were able to participate in a work of this magnitude is exciting for them and for me.”

Tests performed by the students were non-destructive and included visual inspection, rebound hammer, pulse velocity, and impact echo. This information will be added to lab tests and original building document review to ascertain the best practice to maintain the bunkers. The American Battle Monuments Commission is funding the research.

“The important work of surveying, evaluating, and preserving the landscape and structures at Pointe du Hoc will continue,” Komas said. “The importance of this endeavor cannot be understated, particularly as it relates to the younger generations.”

“That the students were able to participate in a work of this magnitude is exciting for them and for me.”

Dr. Tanya Komas

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Vietnam, Contd. from page 5

"It was a complete shock to me and a big difference," Varahamurti said. "If that was our lab, I would have done the temporary fix so the students could use the equipment."

The faculty at HUT consistently praise the CSU, Chico program, but have problems with the student-faculty interaction. They are used to an approach that stresses lecture from the faculty member with tests that distinctly mirror the lecture material. CSU, Chico's program is designed to incrementally encourage students to create their own solutions to engineering problems using the information learned in lecture.

"The first time Mai visited, she told me I didn't have control of my classroom," Varahamurti said. "I understood where she was coming from, but I had to explain why we do it that way here."

According to Varahamurti, the students at HUT are incredibly bright and focused. He said Chico students are bright and creative. Different teaching styles in the West and Asia lead to many discussions when the HUT and Chico faculty meet.

"They are learning our different styles of management and thinking," Varahamurti said. "We are learning a lot about their culture. It's a great collaborative."

SAVE THE DATE!

Computer Science
Department

40th Anniversary Celebration

April 17 & 18, 2009

CSU, Chico campus

Events include an alumni and family BBQ, campus tours, evening dinner, and presentations.

Connect with friends and faculty!

For more information, contact
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