



Luis Garcia Named Department Head of Civil and Environmental Engineering

Professor Luis Garcia has been named department head of civil and environmental engineering



at Colorado State University. A faculty member since 1990, Garcia has served as interim department head since 2005. Over the past two years, the department has seen significant advancements in research expenditures and student outreach. "This is an exciting time for the civil and environmental engineering department," said Garcia. "The hiring demand for our graduates is at historically high levels. In addition, all the recently hired faculty members are allowing us to explore new areas of research and allow the department to continue to strengthen our internationally known research and education programs." Garcia's research interests are in the application of decision support systems, computer modeling, and spatial analysis in natural resources systems, specifically in applications for water resources, irrigation, and drainage. He is the founder and director of the Integrated Decision Support Group, a multidisciplinary research group that is part of The Water Center at Colorado State, and has also worked as associate director of the Colorado Agricultural Experiment Station at CSU. He is the recipient of the Faculty Award for Excellence in Service for the Department of Civil and Environmental Engineering among many other awards.

Hydraulics Lab Conducts Cutting-Edge Research

Years ago, a statics course at Colorado State University inspired Chris Thornton, a trained chef, to put away his knives and enter the world of hydraulic engineering.

"It was all about solving little puzzles, and I absolutely loved it," Thornton says.

Today, as CSU's Engineering Research Center director and director of its hydraulics lab, Thornton oversees cutting-edge research addressing water problems across the country.

He and his team conduct research in an impressive 20,000-foot indoor lab managed by Amanda Cox, that sits at the base of Horsetooth Reservoir. "We're lucky we can draw water from the bottom of Horsetooth to replicate prototype river flow for our research," he says.

Currently, Thornton and his staff of engineers, undergraduate and graduate students are conducting a major study of a section of California's Sacramento River. Sedimentation on the river's banks is shutting off water at a pump station used to irrigate adjacent nut and fruit orchards.

"It's a threat to the infrastructure and use of the river," Thornton says.

To find solutions, Thornton and his team play in water each day, thanks to a 24-foot by 100-foot model that replicates the study area right down to the vegetation – deciduous trees and shrubs used by model train enthusiasts.

"We're looking at methods that will stabilize the banks and ensure that gravel from the river can wash through the bend so it doesn't accumulate and cover the intake at the pump station, shutting off the water," he says.

In other research, the lab is investigating effects of pier scour, caused when accumulating debris brushes against piers and washes away sediment, compromising pier stability. "We're studying ways to keep them intact," he says.

Also, the lab is compiling its research on bridge scour as a guide for engineers. "We're



Physical models at the hydraulics lab.

paying great attention to this," Thornton says. "Our findings are being reported in a book that includes new practices and clear, concise guidelines, so we've got to get it right."

New Orleans is also a point of research as the CSU team joins in a study of sediment control at the levees. "We're part of a large international team that's been figuring out how to protect the levees since Hurricane Katrina, and it's a complicated problem," he says.

Water packs quite a wallop, Thornton says. "The hydraulics team and our supporting engineering teams do an amazing job as we constantly learn about its force."

CSU's engineering lab draws students from around the world, thanks to its reputation as a state-of-the-art research center and its place among the nation's top universities in the study of hydraulics.

"We're able to put out the best hydraulic engineers because they've had a chance to work in the actual environment," he says.

Alumni News

Accolades go to **Harold “Hal” Simpson**, B.S. 1967, M.S. 1969 Civil, who received the General Palmer Award from the American Council of Engineering Companies of Colorado.

Jay Patel, M.S. 1968 Civil, recently brought us up-to-date. In 1973, Jay joined a small private consulting engineering firm located in Ventura county and specializing in land development. He worked in the private arena for over 12 years. Jay has two children, daughter, Neeta, and son, Rajan. 1975 was a memorable year for the Patels. His son, Rajan, was born in January; Jay became a naturalized citizen in May; and his parents moved from India along with his sister in October. In 1976 he started taking MBA classes during the economic downturn. He completed the course work in '79, completed the dissertation in '87, and got his MPA in '88 from CSUN. Jay changed jobs in '85 moving to the public sector. He worked for Ventura County for a short time, joined the City of Oxnard in August '86, and then moved from the City of Oxnard to the City of Santa Paula in '94. About 11 months ago, he joined the City of Agoura Hills. Jay is currently 65 and says he is getting close to the retirement stage. He and his wife, Pushpa, reside in Ventura County in a small town along highway 101 between Los Angeles and Santa Barbara.

James Klang, B.S. 1981 Civil, joined Kieser-Associates as a senior project scientist. James joined K&A after being lead engineer at the Minnesota Pollution Control Agency Total Maximum Daily Load program.

Mark McLean, B.S. 1982 Civil, was named by Deere & Ault Consultants, Inc. as a key professional. Mark has 20 years of experience in civil engineering focusing on water resources and water rights. Mark joins other CSU civil engineering alumni at Deere & Ault including **Daniel Ault**, M.S. 1981 Civil, **Colby Hayden**, B.S. 1984 Civil, **Michael Ballantine**,

B.S. 1978, M.S. 1980 Civil, and **Scott Palmer**, B.S. 1999 Civil.

Dan Overton, B.S. 1985 Civil, was named an ASCE Fellow. Dan is with Tetra Tech, Inc., in Fort Collins and is past president of the ASCE Northern Colorado Branch.

Christopher Doherty, B.S. 1991 Civil, accepted a position as a senior project manager in the area of hydrology and hydraulics with Brown & Gay Engineers in Houston.

Armando Balloffet, Ph.D. 1992 Civil, reports that he continues to spend a great deal of time traveling, working for Asian Development Bank, USAID, and Millennium Change Corporation. He recently was at a meeting in Vientiane, Laos, dealing with the proposed Nam Ngiep 1 Hydropower Project and ran into **Professor Thavivongse Sriburi**, Ph.D. 1983 Civil, director of the Environmental Research Institute of Chulalongkorn University in Bangkok.

Robertus Triwoko, Ph.D. 1992 Civil, received the decree from the Minister of National Education for his professorship in water resources engineering at Parahyangan Catholic University in Indonesia.



Alumnus Rami Mohmoud, second from left, is pictured with Tom Sheng, B.S. 1973 engineering science, M.S. and Ph.D. mechanical engineering, department head Luis Garcia, and Professor Ramchand Oad.

Mohamed Rami Mahmoud, M.S. 1993 Civil, Ph.D. 1995, Civil, a research professor in the National Water Research Center and director of the Main Information Center for the Ministry Office, Egypt, gave a presenta-

tion on “Water Resources and Demand in Egypt: Future and Challenges” at CSU on October 8. Rami caught up on all the news with his former professors (see photo).

John Bingham, B.S. 1994, M.S. 1997 Civil, is currently with Hart Crowser in Seattle, Washington. He writes, “I continue to learn something new almost every day at my current position at Hart Crowser. I greatly appreciate the things I learned from you all at CSU. The practical things I learned continue to be the foundation for the diverse experiences that I’ve had.” John met **Todd Cotton**, B.S. 1992, M.S. 1995 Civil, at a rock mechanics short course in Seattle.

Congratulations to **Brenndan Torres**, B.S. 1995, M.S. 1997 Civil, for being named restoration project manager for Carl Walker, Inc., in Englewood, Colorado.

Thomas Chapel, M.S. 1998 Civil, was elected to ASCE’s Board of Governors for Region 7. Tom is currently employed with Tetra Tech, Inc., in Fort Collins, as a senior geotechnical engineer. He was a founding member of ASCE’s Northern Colorado Branch.

Mark Kempton, B.S. 1999 Civil, is now senior engineer for Anderson Consulting Engineers, Inc., in Fort Collins.

Sunny Rose, B.S. 2002 Civil, returned to the States in August after about five years in the Navy. He spent most of his last year in Afghanistan working with Afghan contractors and engineers to build local infrastructure. He is now living in Seattle and taking time off. Sunny plans to go to graduate school to study transportation/construction.



Sang Nguyen, B.S. 2006 Civil, is attending the University of Tennessee for his master’s in environmental-water quality.

Alumni Focus

David Frick (B.S., 1973; M.S., 1976; Ph.D., 1990 Civil) is executive vice president of Ayres Associates, an engineering consulting firm with 16 offices in eight states. He was promoted to this position from Vice President in 2001. David has been with this company since 1972 when he was an undergraduate at Colorado State. The company started in Fort Collins as M.W. Bittinger and Associates, Inc., which then became Resource Consultants, Inc., and merged with Ayres Associates in 1994. David’s expertise is in surface and groundwater hydrology and hydraulics, including studies related to floodplain mapping, drainage, flood control, and hydraulic design of water resource facilities. An individual who believes in giving back to his community, David served on the City of Fort Collins All City Water Board, served as president of the Fort Collins Housing Authority, and is now president of the nonprofit CARE Housing Inc., which works to provide affordable housing for low-income families. David married Gail Richardson, B.S. 1975 Biological Science, in 1977. They have two children: Donald, 27, a CSU 2002 B.S. graduate in Civil Engineering; and Anna, 26, who went on to pursue a career in music. When asked what might be a fond memory of CSU, David said, “I thoroughly enjoyed the learning process as an undergraduate and now truly appreciate what it was like to have the opportunity to gain knowledge without all the ‘real world responsibilities.’”



Alumni News from the Peace Corps



Cara Shonsey trains a Malian on rescuing techniques.

Cara Shonsey, B.S. 2005 Civil, is currently in her second year with the Peace Corps in Africa. She reports that after a backpacking trip in April in an area called Monentali with a 1,000+ vertical foot climb in 100+ degrees heat, she returned to her village and Kita. She and her five other volunteers have put together midwife training for their villagers, as they do not have access to health care, and a behavior change program to improve hygiene. They also taught the villagers how to make soap so the women could sell it and make a profit. During the rainy season, Cara went to Bamako and taught swimming lessons to Malians, the equivalent of firemen/first responders, so they could perform rescues in the Niger River. She then returned to her village, where she plans to implement a project building soak pits and distributing mosquito nets to help curb Malaria.

Spring Civil and Environmental Graduates



Front row (from left): Dr. Luis Garcia, Dr. Larry Roesner, Dr. Tom Sanders, Dr. Marvin Criswell, Dr. Darrell Fontane, Laurie Alburn, adviser. **2nd row:** Ashley Henzel (CE), Logan Burba (CE), Kathleen Lucchesi (CE), Amanda Vance (CE), Karlie Jackl (CE), Kyle Weighaus (CE), Frank Gariglio (CE), Spencer Shram (CE), Rae Rossetti (CE), Lauren Walker (CE), Jenna Ellis (CE), Jennie Stabler (CE), Dr. Sandra Woods, Melissa Robson (CE), Erin Mick (CE), Beth White (CE), Amanda Livernash (CE), Arthur Gallagher (CE). **3rd row:** Chris Muller (CE), Brenda Gardner (CE), Jordan Jarrett (CE), Brian Huston (CE), Luke Harris (CE), Steve Humphrey (CE), Lindsay Merz (CE), Keith Despain (CE), Ryan Byrne (CE), Alex Stone (CE), Cody Hix (CE), Carrie Lile (CE), Takao (David) Sawahata (CE). **Back row:** Matt Gardella (CE), Kris Bruun (CE), Chris Turnbull-Grimes (CE), Stephanie Thomas (CE), William Janasak (Env), Christina Dodson (Env), Jeff Diel (CE), Steven Sapp (CE), Trevor Kirkley (CE), Tristan Bonser (CE), Carter Mast (CE), Alex Nodich (CE).

What Some of Our Fall and Spring Graduates Are Doing Now

Ryan Byrne, B.S. 2007 Civil, has taken an Engineer I position with Martin/Martin in Lakewood, Colorado.

Christina Dodson, B.S. 2007 Civil, is pursuing graduate studies in environmental engineering at Michigan State University.

Rae (Rossetti) Doner, B.S. 2007 Civil, is working with Eclipse Engineering, Inc., as an engineer-in-training for structural engineering in Montana.

Art Gallagher, B.S. 2007 Civil, has taken a position as field engineer with Hubbard Construction Company (Eurovia) in Florida.

Luke Harris, B.S. 2007 Civil, is now with Bishop-Brogden Associates in Englewood, Colorado, as a water resource engineer.

Steven Humphrey, B.S. 2007 Civil, is a production engineer with TST Consulting Engineers, Inc., in Fort Collins.

Chris Muller, B.S. 2007 Civil, is now Design Engineer I for S.A. Miro Inc. in Denver, Colorado.

Takao Sawahata, B.S. 2007 Civil, is a Bridge Engineer 1-3 in training for the Washington State Department of Transportation.

Logan Burba, B.S. 2007 Civil, is a Water resources engineer with Leonard Rice Engineers in Denver.

Carter Mast, B.S. 2007 Civil and Construction Management, is studying structural mechanics in graduate school at the University of Washington.

Alumni and Friends Website

www.engr.colostate.edu/ce/alumni.shtml

Look up your former classmates on the Alumni and Friends website! The news is arranged on the website according to graduation year.

Send you own personal or professional news to Linda.Hinshaw@ColoState.edu

Spring Alumni Award Winners

The Department of Civil and Environmental Engineering had three honorees during the College of Engineering Spring Alumni Awards:



Howard Knapp received the College of Engineering's Distinguished Alumni Award.

The Distinguished Alumni Award for the College of Engineering went to **Howard Knapp**, B.S. 1967 Civil, who is currently the co-president of Plum Creek Structures in Littleton, Colorado. Plum Creek is a precast, prestress concrete company, which has been involved with many notable projects throughout the state of Colorado, as well as New Mexico, including the TREX I-25 widening project in Denver. The company has also been the recipient of numerous awards, including the American Concrete Institute/Rocky Mountain Chapter 2003 Award of Excellence, the 2003 Outstanding Project of the Year, and the Precast/Prestressed Concrete Institute Best Rehabilitated Bridge. The latter award was for their work on the Castlewood Canyon Bridge in Douglas County. Prior to joining Plum Creek, Howard was employed with Rocky Mountain Prestress and Stanley Structures. Howard is a member of Colorado State's Former Athletes Association and the Ram Club. While attending Colorado State, he was a football player and was an active member of Chi Epsilon.

Eugene "Gene" Miller, B.S. 1951 Civil, received the Department of Civil and Environmental Engineering's Distinguished Alumni Award. Gene is officially retired from the engineering profession. He spent 45 years in geotechnical consulting, working on dam projects and landslide studies and serving as the foundation engineer for many high-rise, public, industrial, and commercial structures. In addition, he has been a primary investigator for land and foundation failures, provided consultation for remediation, and provided expert testimony for litigation matters. During his tenure in the engineering profession, Gene founded two different companies: Harding Miller Lawson and Miller Pacific Engineering Group. Although "retired," Gene has remained active in a number of professional engineering organizations, including the American Society of Civil Engineers, the Structural Engineers Association of Northern California, Consulting Engineers and Land Surveyors of California, and California State Board of Registration. Gene received his M.S. in civil engineering from Georgia Tech. He currently has an interest in western United States history and the construction of the transcontinental railroad. Luis Garcia accepted the award on behalf of Eugene Miller.



Eugene Miller, today, and in 1970.



Brittany Albrandt received the Graduate of the Last Decade (GOLD) Award.

Brittany Albrandt, B.S. 2002 Civil Engineering and Engineering Science, received the Graduate of the Last Decade (GOLD) Award. Brittany has been employed with United Launch Alliance, formally Lockheed Martin Space Systems, since graduation. She is responsible for the integration of all structural/mechanical interfaces between space vehicles and launch vehicles. During her tenure with Lockheed Martin, she has been active in the launch of the AV-010, Pluto New Horizons, the first spacecraft to visit Pluto. She also is an active recruiter of Colorado State engineering students on behalf of United Launch Alliance and Lockheed Martin. While attending Colorado State, Brittany was actively involved with the Society of Women Engineers, Chi Epsilon, Tau Beta Pi, the American Society of Civil Engineers, and the American Institute of Aeronautics and Astronautics. In 2006, Brittany received her master's degree in aerospace engineering from the University of Colorado at Boulder.

Steven Abt returns from IRAQ

In May 2006, Major General Steven Abt, U.S. Army Reserve and professor of civil and environmental engineering, was mobilized by the U.S. Army and deployed to Iraq to serve as part of the U.S. expeditionary force fighting the war on terrorism. MG Abt was assigned to Headquarters, Multi-National Force Iraq (MNF-I) and placed under operational control of the U.S. Ambassador as the director of operations and deputy director of the Iraq Reconstruction Management Office, U.S. Embassy, Baghdad.

His responsibilities encompassed the allocation and oversight of nearly \$3.5 billion (U.S.) used to support more than 1,200 projects to build/rebuild the Iraqi infrastructure to include electrical generation; oil production and distribution; rail, roadway, and air systems; hospitals and health clinics; water and waste water treatment plants; and fire, police, and postal stations. In addition, he supervised nearly 100 civilian subject matter and technical experts in the areas of oil, electricity, water resources, communications, health, environment and transportation. During his tour, MG Abt routinely worked with Iraqi



director generals, national ministers, and senior military leaders; the senior leadership of the U.S. Embassy and MNF-I; and visited over 140 project sites throughout the country. He also served as the liaison between the U.S. Embassy and the U.S. Army Corps of Engineers in theater.

When asked about his year in Iraq, Abt stated, "This was the most challenging year of my life. I positively impacted more people during my tour than the rest of my engineering career while living in a dangerous environment. You cannot help but come home a different person from when you deployed. I hope that I may convey many of my lessons learned on engineering in a war zone to my students."

MG Abt returned from Iraq in May 2007 and rejoined the civil and environmental engineering faculty for the Fall 2007 semester as part of his transitional retirement. He is currently co-teaching the senior design capstone course and working in the hydraulics program. MG Abt was awarded the Bronze Star Medal and the Iraq Campaign Medal and is pending the Joint Meritorious Unit Award for his service. He may be contacted at sabt@engr.colostate.edu.



Jorge Ramírez Returns from Zurich

Jorge Ramírez, professor of civil and environmental engineering, recently returned from Zurich, Switzerland, following a yearlong sabbatical as visiting professor at the Swiss Federal Institute of Technology (ETH), consistently ranked among the top universities in the world.

There, Ramírez collaborated with faculty, researchers, and students of the Institute of Environmental Engineering on several research topics including soil moisture-vegetation interactions and stream eco-hydrology, bio-complexity, climate variability and change, and glacier dynamics. Ramírez also served as an advisor for two students doing their thesis research; served on four M.S. graduate thesis committees; and taught a new graduate course in hydrologic science.

In addition, Ramírez gave invited lectures at scientific meetings and universities in Austria, Holland, Italy, Spain, and Switzerland.



Scrap Tires Used to Stabilize Soil

Antonio Carraro, assistant professor of civil and environmental engineering, is spearheading an innovative research project using scrap tire rubber to stabilize Colorado's clay soil, thus reinforcing road bases and housing foundations.

With a grant from the Colorado Commission on Higher Education, funding from the Department of Transportation, and in cooperation with the city of Loveland, Carraro's team of three students is seeking ways to reuse some of the nearly 40 million tires stockpiled throughout Colorado.

"Our goal is to use waste materials to improve the technical quality of local soils," he says, adding that tire rubber significantly changes the properties of expansive soil.

"When it is dry, soil occupies much less area," Carraro says. "When wet, there is a lot of movement, which can cause problems with the foundation of a house."

The rubber particles replace the soil's volume with something less problematic, creating an overall mixture typically less stiff and more compressible, he says.

"We're evaluating the effects of certain rubber particle sizes and the amount that must be added for an ideal combination," he says.

The team also is researching methods of application, such as placing a combination of composite layers under conventional foundations and layering the composite with traditional pavement for road stability.

"I'm excited to find ways to use such waste materials and make a smaller footprint on the Earth," Carraro says.



Engineering Professor at Colorado State to Evaluate Stormwater Management in Denver, Other Cities

Colorado State University's Urban Water Center has been awarded a contract valued at \$800,000 from the Water Environment Research Foundation in a first-of-its-kind study to develop planning tools for municipalities to determine the best way to protect urban waterways from pollution due to stormwater runoff.

Municipal stormwater management agencies in Denver, Los Angeles, Seattle, and Philadelphia have volunteered to participate in the study, which is intended to provide municipalities with effective tools for improving stormwater drainage. Stormwater can carry harmful pollutants such as automobile products or chemicals such as antibiotics used for humans and animals into streams.

The study will examine whether best management practices for stormwater pollutant control are directly linked to improved water quality in streams, said Larry Roesner, professor in the Department of Civil and Environmental Engineering and director of the Urban Water Center.

"This study will provide the foundation for making better, fact-based decisions on the types of Best Management Practices that local governments use and approve within their jurisdictions," said Ben Urbonas, manager, Master Planning Program for the Urban Drainage and Flood Control District. The district covers 1,608 square miles and includes Denver, parts of the six surrounding counties, and all or parts of 33 incorporated cities and towns.

"The issue at hand is selecting the Best Management Practices that are most effective in protecting the receiving waters of the state of Colorado and are also most cost-effective when full life-cycle costs are considered," Urbonas said. "That includes not only initial cost but also the cost of maintenance, eventual rehabilitation, and administering the oversight required by the state for cities and counties to ensure that facilities in the ground continue to function for years to come."

Commonly used methods for treating runoff include settling and biofiltration that remove solids and associated pollutants from the runoff. Wetlands and created ponds are also used to remove pollutants and nutrients that stimulate algae growth in urban waterways.



Harold H. Short Civil Infrastructure Chair Larry Roesner with doctoral student Jorge Gironas.

Colorado State engineers are leaders in the design of pragmatic computerized models that can help cities predict their success with these runoff-control measures. The University plans to hire subcontractors, including CDM, CH2MHill, and Geosyntec to provide specialized expertise on the study.

"We're developing tools municipalities can use to make better decisions about management practices and where they need to put them so they can effectively predict impacts on water quality in streams, lakes, and other natural water areas," said Christine Rohrer, a research associate who is working on the grant with Roesner and Associate Professor Brian Bledsoe.

"Some metropolitan stormwater agencies have experience with state-of-the-art controls that are used to meet water quality standards," Roesner said. "Denver and Philadelphia, in particular, are leaders in this area. However, they and most other American municipalities lack the planning tools to determine which controls work best in a given situation, how many are required in a river basin, and what is the whole-life cost to the agency for implementing these controls."

Roughly half the streams in the country remain polluted as a result of storm runoff. Continuously flowing streams such as Spring and Fossil creeks in the Fort Collins area are examples of the numerous small

streams that must meet minimum federal water quality standards, Rohrer said.

"It's our responsibility to take care of the environment," said Rohrer, who obtained her doctorate in civil and environmental engineering in 2007 at CSU. "I'm glad in my job I can do that."

Roesner holds the first endowed chair in the Department of Civil and Environmental Engineering known as the Harold H. Short Civil Infrastructure Chair. He was elected to the National Academy of Engineering in 1990 and is a nationally recognized expert in the development and application of hydrologic, hydraulic, and water quality simulation models. He served as chief technical officer and senior vice president at Camp Dresser and McKee Inc. before coming to Colorado State in 1999. Roesner's area of specialization since 1970 has been urban hydrology and non-point source pollution control.



Professor Roesner and doctoral student Christine Pomeroy

Emeritus Faculty News

David Hendricks



Dr. David Hendricks attended the fifth biennial conference of the International Water History Association in Tampere, Finland. The conference was arranged by faculty at the University of Tampere, including Tapio Katko, who spent his sabbatical at CSU in 1996 and has published several books on water history in Finland and worldwide. David chaired a session on environmental engineering education and gave a paper, "Evolution of Environmental Engineering Education in the USA." The paper emphasized the beginning years at MIT in the 1880s through the modern period, which began in the 1960s.

Dr. Katko's discipline, as others, contains many interesting true stories interwoven with varied colorful personalities that comprise our history. David comments: "Knowledge of this past helps to understand how we have arrived at the present theory and practice of our field. All of this was a revelation to me. However, in 1968, a research project led me to some 1880s papers. Looking at some of these papers got me hooked on history, especially when I saw that some of what was considered 'new' had been a part of past practice; i.e., before 1900."

This interest led him to exploring Roman ruins in various places in the Mediterranean and becoming fascinated by past civilizations. David's first sabbatical in 1978 in Sicily led to serendipitous discovery of and fascination with the Greek and Roman ruins both there and throughout Italy. His second sabbatical in 1986-87 in Istanbul was devoted mostly to visiting the archeological sites for which Turkey is noted. David has tried to integrate history into teaching and writing on water treatment. He is working on another book on water treatment, and after that, he hopes to work on a history volume.

Johannes Gessler

What has **Dr. Johannes Gessler** been up to? As some of you may remember, Dr. Gessler retired in 2003 after having been associated with Colorado State University for 37 years. Over that period of time, he served the department and college in many different ways: as a faculty member, as associate department head, as interim department head, associate dean, and for a couple of years (1997-1999) as interim dean.

Since then, he has taught a couple of courses (Statics and Hydraulic Engineering) at times when the department was short-handed. Perhaps more importantly, he continues to serve the College of

Engineering as coordinator for students who are interested in the Study Abroad Program. He makes presentations to freshmen students on opportunities related to Study Abroad, presents individuals with various alternatives and helps them in the planning process. Presently, about 5-10 percent of the graduating seniors in the College of Engineering have studied abroad. Johannes believes this number is too low, partly because engineering has become a very internationalized professional field. Many of our students will work on international projects or work with civil engineers in other countries. Consequently, he thinks that 20-25 percent of our students should study abroad. Shortly before his retirement, Johannes was instrumental in creating an International Engineering option within the Engineering Science major. Students in this option concentrate their engineering studies in one of the traditional engineering fields and supplement this curriculum with various courses in International Studies, and complete the required study abroad semester.

And when not on campus, he loves to make music with his wife, Seraina. The two play in a number of different ensembles and participate regularly in various music workshops. Reading is also an important part of every day. Present read: *A Thousand Splendid Suns*, a new novel by the author of *The Kite Runner*, Khaled Hosseini.



Dr. Gessler and his wife Seraina on top of the 'Rock' in New York City, summer 2007.

Jozsef Bodig

Jozsef Bodig, emeritus professor of wood science, passed away in September. Joe was a faculty member of forest management and wood science from 1963 until 1989, and he had a joint faculty appointment with the civil engineering department. Throughout the 1970s and 1980s, he worked closely with several of our engineering faculty and many of our graduate students. In 1989, Joe became the co-principal and technical director of Engineering Data Management, Inc., now EDM International, a Fort Collins consulting firm specializing in services to the electric utility industry.

CEE Faculty Wins It Again

The faculty and staff persevered again and won a friendly game of softball over the undergraduates, 28-2. Neil Grigg and Richard Gutkowski almost single-handedly won the game with their bats and fielding.

Although we were a little short of faculty this game, their absence apparently had little effect on the outcome. Missing due to age and/or health reasons were John Labadie, Charles "Chuckles" Shackelford, Luis Garcia, Antonio Carraro, Kathy Stencil, and Ken Carlson. At one time toward the end of the game, the undergrads fielded six outfielders and were still unable to stop the faculty Juggernaut. Our pinch-hitting specialist, Amy Pruden-Bagchi, was not even needed. There are indications that the students may challenge the faculty next year in soccer. The faculty stand prepared with Mazdak Arabi, Pepe Salas, Luis Garcia,



Thomas Sanders, the ultimate Rockies fan

Jorge Ramirez, Suren Chen, and Antonio Carraro. For those of you interested in history, I found an article summarizing a similar game against the undergrads in 1990 (see below). Sincerely, Tom

The faculty of the Civil Engineering Department decimated the Chi Epsilon softball team 25 to 2 Friday, April 20, 1990. The fact that Chi Epsilon had to bat and throw opposite handed and the CE faculty got 5 outs per inning was believed to have had no affect on the outcome of the game. "Flash" Warner was outstanding at pitcher, "Guts" Gutkowski looked like Ozzie Smith at shortstop, the dynamic duo of Gates at second and "Chuckles" Shackelford at first completed an air tight infield. "Three left feet" Labadie showed his old high school form of 35 years ago making spectacular catches and hitting like crazy; his base running needs improvement. "Curly" Nowak went 6/6 and played great defense in center field, and Sanders what can we say, he embarrassed CE again only this time it was in a softball game. The CE baseball Groupie, Davidson, although late, brought her enthusiasm and "never say die" spirit to the team which went on to score 20 runs after her arrival.

New Faculty

Dr. Mazdak Arabi is a research assistant professor in the Department of Civil and Environmental Engineering at CSU. He is teaching and actively conducting research in the

areas of water resources management and planning and environmental engineering. After receiving his B.Sc. and M.S. degrees in civil engineering from the University of Tehran, Iran, Dr. Arabi

became a graduate research assistant and then a postdoctoral research associate at Purdue University, where he received his Ph.D. in August 2005. At CSU, Mazdak is currently one of the instructors for CIVE 576, GIS and GPS for Engineering Applications.

Coming from a semi-arid region of the world has contributed greatly to Mazdak's passion for the sustainable management of water resources. His research primarily focuses on the development of scientific approaches and decision support systems for sustainable environmental planning and management. For example, Dr. Arabi is interested in investigating the impact of anthropogenic activities, such as land use change, and agricultural practices on the integrity of environmental systems, especially watersheds.

Currently, Dr. Arabi is involved with several projects sponsored by USDA, NRCS, and NSF to develop stakeholder-driven multi-criteria watershed management support systems for enhancing decisionmakers' capacity to evaluate a range of agricultural and environmental policy alternatives. These tools hinge on striking a balance between economic, environmental, and institutional criteria to identify the optimal set of management actions (i.e., best management practices) and their spatial placement within a watershed.

Dr. Arabi believes that he has been given a tremendous opportunity at CSU to pursue research and education in water-related issues, mainly due to the elite group of researchers, educators, and extension personnel found across campus. He is currently in the process of establishing an



integrated watershed management laboratory, which will provide a platform for CSU's faculty and students to collaborate on holistic water quantity/quality management of watershed systems.

Arabi also serves on the Surface Water Hydrology Committee of the American Society of Civil Engineers and is a member of the American Society of Agricultural and Biological Engineers, American Geophysical Union, and the American Water Resources Association.

Dr. Domenico Baú is an assistant professor in the Department of Civil and Environmental Engineering. He is originally from Padova, Italy, which is very close to Venice. Dr. Baú received his degree (laurea) in civil engineering at the School of Engineering of the University at Padova, where he also worked as a research scientist following graduation.

Prior to his work at the University of Padova, Dr. Baú was interested in the topics of structural engineering; however, as a research scientist, he worked on projects that assessed the land subsidence caused by fluid extraction from gas reservoirs and groundwater-aquifer systems in the Upper Adriatic sedimentary basin. This research was and is very important, particularly in northeast Italy, where the average ground elevation along the coastline is just a few feet above mean sea level.

His work experience on the impact of anthropogenic activities on the environment prompted him to enter the doctoral program in environmental engineering at the Michigan Technological University in 2001, which he completed in 2006. At MTU, his work focused on the development of decision-making frameworks for the optimal design and management of groundwater remediation systems under conditions of parameter uncertainty.

Since the start of his research activity, Dr. Baú has co-authored 25 papers published in refereed scientific journals and proceedings of international conferences. His current research interests include



environmental subsurface hydrology, with a particular focus on the use of simulation models to assist the sustainable management of groundwater systems under scarcity of data for site characterization.

He is currently teaching Groundwater Hydrology this semester, and in the spring, he will teach Groundwater Engineering. Dr. Baú speaks very highly of the Civil Engineering program at Colorado State. The innovative research projects conducted by our faculty were an important consideration for his move to CSU. He also loves the area and enjoys skiing as well as any activity that takes him outdoors.

Dr. Sybil Sharvelle is an assistant professor in the civil and environmental engineering department, focusing on environmental engineering. Her area of expertise is biological waste processing. Dr. Sharvelle is originally from Indiana and attended the University of Colorado for her bachelor's and master's degrees. She received her doctoral degree from Purdue University, where she developed a biological processor for treatment of graywater for potable reuse during long-duration space missions. Through this project,

Dr. Sharvelle gained extensive experience in the area of water reuse, with focus on emerging contaminants. Dr. Sharvelle is currently working on wastewater and graywater reuse

projects in the western region, where water supplies are limited. She is also contributing to research regarding livestock and the environment with the goal of finding practical, economical solutions to minimize environmental impacts from the livestock industry. Along this line, Dr. Sharvelle is interested in the application of anaerobic digestion to capture and utilize biogas generated during treatment of animal wastes. She has an extension component to her appointment and will provide decision-making tools to agricultural producers so that more informed decisions can be made regarding animal waste treatment.



Kristin Sample (shown right) attended the COE Alumni Awards dinner and presented her master's degree research on ZVI Clay.



Congratulations to Ph.D. student **Niklas Hallberg** and wife, Megan. They are the proud

parents of a new baby boy, Alexander Hathaway Hallberg.

Charles Edward (C.J.) Riley was awarded a Shrake-Culler scholarship. The recipient of this scholarship must be a graduate student with a cumulative GPA of 3.5 or above, demonstrate enthusiasm for and dedication to higher education,

and have a strong work ethic. Besides his strong academic performance, C.J. has consistently volunteered for various recruiting events to enlighten young high school and junior high school students about civil engineering. In addition, C.J. taught CIVE 360, Mechanics of Solids, during the summer semester. His course evaluations by students were high, and he received such comments as "the best instructor I've had in a long time." C.J.'s goal is to pursue a teaching career. With two years of industry experience and knowledge gained in his academic and research studies at CSU, he is motivated to pass on his knowledge to future students. "C.J. has worked with me during both his M.S. and Ph.D. programs, as a teaching assistant in CIVE 302, Evaluation of Civil Engineering Materials (a.k.a. materials lab or 'smash lab')," said Dr. Marvin Criswell. "He has a combination of intellectual skills



C.J. Riley

and curiosity, a willingness to take on challenges, and empathy for his students that makes him a very effective instructor."

The Department of Civil and Environmental Engineering is pleased to announce the funding of three new undergraduate student scholarships for fall semester 2007. PBS&J, an international consulting firm, provided a scholarship that was received by **Nichole Williams**, a senior in environmental engineering. **James Foreman**, a senior in civil engineering, received the S. A. Miro, Inc., scholarship. S. A. Miro, Inc., is a premier consulting firm in the western United States. From their offices in Colorado, they offer design services to major clients across the United States. **Rebecca Bing** and **Benjamin Hostetler**, both seniors in civil engineering, received the TST, Inc., Consulting Engineers Scholarships. TST, Inc., of Fort Collins, is a consulting firm whose services include civil engineering, master planning, land development, municipal infrastructure, environmental engineering, water and wastewater engineering, and surveying.

Student Competition

The ASCE Bridge and Concrete Canoe competition took place in Boulder this past spring.

Our students' bridge won first place for stiffness, and our canoe, "Tuna Trawler," got seventh overall. As you can see at left, our bridge crew headed by **John Wilson** and **Kyle Plonka**, worked hard during set up and strength tests. The canoe seemed to be just fine when first placed in the water and passed the swamp test. The team, headed by captains **Brian Jessee** and **Melissa Robson**, was pleased.

But, oh, the "agony of defeat"! **Erin Dallinger** and **Kaylee Strand** headed out for the two-woman race and all was well until Brigham Young's canoe whacked them right in the middle. Water spewed from the break and the girls had to finish with half-a-canoe. Duct tape was used to repair the boat and it survived through three more races before breaking in the final race.

Pictured at left, top: Lucy Tunna, Kyle Plonka, Chris Turnbull-Grimes, Stephen Wheeler, David Oldham, John Wilson, Kate Pfretzschner, Stephen Hoppe; left, center: Stephen Hoppe, John Wilson, and Chris Turnbull-Grimes; left, bottom and center: Ryan Horn, Jared Moreng, Nick Dunbar, Anna Schweitzer, Brian Jessee, and Aaron Brown; photos at right: collision and race photos.



Donor List

Departmental Donors

The Department of Civil and Environmental Engineering is fortunate to have many generous alumni and friends whose contributions of time, expertise, and financial support have made a significant impact on our department. We thank and recognize the donors who contributed funds in 2006-2007, allowing us to establish new scholarships for graduate and undergraduate students, support research and our student organizations, and provide discretionary funds to allow our department to develop new initiatives. We are deeply grateful for your continued support of our students, our faculty, and our programs.

One of our goals for 2008 is to continue to develop new undergraduate and graduate scholarships to offset rising expenses for our students. If you would like to make a contribution to a scholarship, please go to <https://advancing.colostate.edu/ENG/GIVE>; under Gift Information, choose "Select a Different Fund," then choose "Other," and enter a description of a Civil and Environmental Engineering scholarship (i.e., Alumni Undergraduate Scholarship, Albertson Scholarship, Alumni Graduate Scholarship, etc.). Thanks to all who have supported the department with their time and dollars.

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Miller Wind
Kyle Y. and Lori
Yukumoto

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(Oline) Atadero
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Every effort has been made to ensure the accuracy of this donor honor roll. We sincerely apologize for inadvertently misspelling or omitting the name(s) of anyone who contributed through private support or pledges during the past year to the Department of Civil and Environmental Engineering. We appreciate the opportunity to correct our records. Please advise our staff of any errors by calling (970) 491-7028 or e-mail SupportEngineering@colostate.edu.

The department recognized four faculty for their outstanding performance during the 2006-07 academic year. **Dr. Jeffrey Niemann** received the Faculty Award for Excellence in Teaching; **Dr. Paul Heyliger** the Faculty Award for Excellence in Service; **Dr. Christopher Thornton** the Faculty Award for Excellence in Research; and **Dr. Brian Bledsoe** Outstanding Faculty Performance. In addition, the Staff Award for Excellence was awarded to **Gloria Garza**. "We are very proud of our faculty and staff, and we welcome the opportunity to recognize those who have gone above and beyond in their endeavors," says Luis Garcia.

In addition, the College of Engineering recognized **Dr. Brian Bledsoe** along with Dr. Bryan Willson (Mechanical Engineering) with the George T. Abell Award for Outstanding International Contributions recognizing high-quality and internationally acclaimed research productivity.

Dr. Brian Bledsoe and Mrs. Ivette Bledsoe proudly announce the adoption of their daughter Naomi Rose Bledsoe pictured here on her first birthday, October 23, 2007.



On October 3-4, **Dr. Richard Gutkowski** presented two seminars at Metro State College of Denver on "Impressions of the I35W Bridge Collapse and Implications to Bridge Load Rating" as a consequence of last August's high-



way bridge collapse in Minneapolis, Minnesota. He covered on-site photographs of the devastation, the federal bridge sufficiency and rating procedures, and pros and cons of load testing for bridge rating

purposes as a potential alternative to computational load rating methods.

During the summer of 2007, **Dr. Terry Podmore** was invited by Samaritan's Purse to be part of a team going to Mozambique. Samaritan's Purse is an emergency relief organization that is developing a proposal for drought relief in Mozambique. Mozambique is a country that is alter-

nately subject to severe flooding and prolonged droughts. The proposal, submitted to USAID, is to develop sustainable water supplies in drought-stricken areas of Mozambique through water harvesting techniques adapted to the local environment. While in Maputo, the capital, Dr. Podmore was able to interact with alumnus **Rui Brito**, Ph.D. 1994 Agricultural Engineering.

Dr. Larry Roesner and alumnus **Dr. David Stewart**, B.S. 1978, Ph.D. 2000 Civil, served as expert faculty at the five-day ACEC certificate course "Green Infrastructure and Sustainable Communities" held at the CSU Denver Center in July. The course covered the complex interdisciplinary challenges of real-world sustainability problems and examined key environmental planning and design processes.

Dr. José Salas presented four papers at the World Water Congress of ASCE held in Tampa. He was an invited workshop speaker along with **Dr. John Labadie** on "Risk Management in Hydroelectric Generation" held in Lima, Peru. He presented the keynote at the conference on "Advances in Characterizing the Dynamics of Severe Droughts," HYDRO II in Lima, Peru; and was invited to present a seminar on "Modeling the Dynamics of Drought Based on Stochastic Approaches" at the Second Sin-American Workshop on "Advanced Computational Modeling in Hydrosience and Engineering" in Beijing, China.



Dr. Charles Shackelford was an invited speaker for the 21st Geotechnical Engineering Conference held at Politecnico di Torino in Torino, Italy, November 27-28, 2007. His presentation was titled



"Selected Issues Affecting the Use and Performance of GCLs in Waste Containment Applications." Dr. Shackelford also completed his service on the Committee to Assess the Performance of

Engineered Barriers sponsored by the National Research Council of the National Academies in May 2007. The results are available in *Assessment of the Performance of Engineered Waste Containment Barriers* published by the National Academies Press.

Dr. Thomas Siller, associate professor of civil and environmental engineering and associate dean for academic and student affairs, was one of 39 chosen for the American Council on Education Fellows Program being held at the University of Oregon. The program is intended to identify and prepare senior leadership in U.S. colleges and universities. Dr. Siller has been actively involved with changes to curricula in the college and University. He was also instrumental in the design of the new Academic Village. In addition, he collaborated with the School of Education to create a new engineering education degree, which trains engineers to be junior high and high school engineering and technology teachers.

Dr. Amy Pruden-Bagchi received the **Presidential Early Career Award in Science and Engineering** from President George Bush at the White House on November 1. This program recognizes outstanding scientists and engineers early in their careers who show exceptional potential for leadership at the front lines of knowledge. "This was truly a tremendous, once-in-a-lifetime honor. I have many mentors to thank, as well as my excellent graduate students and the support of my family," said Dr. Pruden-Bagchi. This is the highest honor of its genre that is bestowed by the U.S. government on scientists and engineers beginning their independent careers. Dr. Pruden-Bagchi, nominated by the National Science Foundation, was recognized for her outstanding research using molecular biology to investigate the pathways, mitigation, and treatment of antibiotic resistance genes (ARGs) in water (highlighted in the Spring 2006 Newsletter) and for her educational activities involving high school, undergraduate, and graduate students, especially minority students. "This award is a great recognition of the outstanding research program that Amy has built," said Dr. Luis Garcia, head the Department of Civil and Environmental Engineering.

