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Alumnus Dan A. Brown (PhD 1985) had a long career in academia before starting his own geotechnical engineering firm specializing in deep foundation design. A recent project was the 1.6-mile U.S. 90 Bridge over Biloxi Bay in Mississippi which was built to replace a bridge destroyed by Hurricane Katrina in 2005.
Greetings from Austin! In this issue, we recognize the distinguished careers of two faculty members: Joe Malina retired in August after more than 50 years on the faculty, including twelve as department chair, and Rich Klingner retired in January after more than 35 years on the faculty, including eight as associate chair for architectural engineering. Joe and Rich inspired thousands of students, and we are extremely grateful for their many contributions to the department, university, and profession.

We are also thrilled to highlight the accomplishments of our current faculty members. Brady Cox had the opportunity to meet President Obama during a ceremony at the White House this summer, while Steve Boyles and Chadi El Mohtar were recognized with CAREER Awards from the National Science Foundation. Outstanding teaching continues to be a priority for the department, and we are especially proud of Ozzie Bayrak and Bob Gilbert.

During our alumni banquet last fall, we honored seven alumni and one faculty member with induction into the CAEE Academy of Distinguished Alumni. Our Outstanding Young Alumnus was also honored. Each has made significant contributions to the profession and serves as a role model for our students. Two other alumni, Jack and Dick Furlong, are recognized for serving as presidents of the Texas Section of ASCE. They are only the second pair of father-son presidents in the 100-year history of this organization.

As part of the Campaign for Texas, the department has launched The Legacy Campaign, which honors the traditions of the department, establishes an endowment for sustained excellence, and celebrates the contributions of our students. As you reflect on the impact that The University of Texas has had on your career, I hope that you will consider contributing to this campaign.

Finally, I would like to thank you for your continued support of the department. We are extremely grateful for the generosity of our alumni, parents, and friends. I hope to see many of you during our alumni seminars this spring.

Robert L. Parker, Sr. Centennial Professor in Engineering and Department Chair

Calendar of Events

April 4-5
STructural Engineering Education Reunion
PRC Commons

April 5
Lymon C. Reese Distinguished Lecture
PRC Commons

April 11
CAEE Student Banquet
Etter-Harbin Alumni Center

May 9
CAEE Alumni Seminar Series
Join fellow graduates for this year’s alumni seminar and earn one hour of professional development credit for renewal of your PE license.

May 14
San Antonio - San Antonio Water System

May 23
Austin - PRC Commons

May 31
Houston - Federal Reserve Bank

October 25
Dallas - Chiang, Patel & Yerby, Inc.

This year’s speaker, Associate Professor Maria Juenger, will discuss “Advances in Alternative Cements for Sustainable Concrete.” Her teaching and research focus on materials used in civil engineering applications.
New Faculty Profile

Brady R. Cox
Assistant Professor
Geotechnical Engineering

Brady Cox joined the faculty in CAEE in September after six years as an assistant professor in the Department of Civil Engineering at the University of Arkansas. He specializes in geotechnical engineering issues related to earthquake loading, soil dynamics and nondestructive material characterization using stress waves. He has also been a part of the Geotechnical Extreme Events Reconnaissance (GEER) teams deployed immediately after recent major earthquakes in New Zealand, Haiti, Japan and Peru.

He received his PhD in civil engineering (geotechnical) from The University of Texas at Austin, and his master’s and bachelor’s degrees in civil engineering from Utah State University. This summer, Cox received a Presidential Early Career Award for Scientists and Engineers, which is the highest honor bestowed by the United States Government on science and engineering professionals in the early stages of their independent research careers.

Department Awards

ARE Leadership Award
Jessica Spencer
Awarded to an architectural engineering student who demonstrated outstanding leadership in campus and community activities.

CE Leadership Award
Stephanie Tong
Awarded to a civil engineering student who demonstrated outstanding leadership in campus and community activities.

Werner W. Dornberger Academic Excellence Award
Anthony Dondrea
Awarded to an architectural engineering student who started at UT Austin as a freshman, has the highest GPA in class, and is completing a degree in four years.

John A. Focht Academic Excellence Award
Wanching Huang
Awarded to a civil engineering student who started at UT Austin as a freshman, has the highest GPA in class, and is completing a degree in four years.

Outstanding Teaching Assistant Award
Amir Reza Ghiami Azad
Presented to a TA who has shown exemplary dedication and motivation in their teaching.

CAEE Staff Excellence Awards
Joanne Belsley and Annette Perrone
Presented to staff members who have distinguished themselves and who have contributed significantly to the CAEE Department’s teaching, advising, mentoring, and/or research efforts.

Department Teaching Award
Robert B. Gilbert
Presented to a faculty member who has excelled in teaching and has demonstrated exceptional motivation of students in the classroom.

Ervin S. Perry Student Appreciation Award
Paola Passalacqua
Presented to a faculty member who best meets the ideals of “an excellent teacher and a good friend.”

Teaching Awards

Oguzhan Bayrak received the 2012 Regents’ Outstanding Teaching Award, which recognizes educators who demonstrate a clear commitment to teaching and a sustained ability to deliver excellence to the undergraduate learning experience. He is one of 65 recipients from across the UT System.

Robert B. Gilbert is the 2012 recipient of the Lockheed Martin Aeronautics Company Award for Excellence in Engineering Teaching. This prestigious award is given to a faculty member in the Cockrell School of Engineering who dedicates time and energy to teaching undergraduate and graduate students.

Professional Honors

Sharon L. Wood was elected to the National Academy of Engineering in February 2013. She was recognized for her design of reinforced concrete structures and associated seismic instrumentation for extreme loadings and environment.
Established in 2003, the Outstanding Young Alumnus/Alumna Award recognizes a graduate of the Department of Civil, Architectural and Environmental Engineering under the age of 40 who has distinguished himself or herself with outstanding service and contributions to the engineering profession.

Mark Waggoner, P.E., S.E., P. Eng. is a Principal in the Research and Development Group at the Austin office of Walter P Moore. Following completion of his master’s degree at UT Austin, he was awarded a SOM Structural Engineering Traveling Fellowship to study aesthetically important structures in Europe.

Waggoner is recognized world-wide as an expert on the design and behavior of long-span roof systems for stadiums and arenas. He has contributed to the design of ten major professional sports venues in the U.S. and internationally. He specializes in the design of kinetic structures and lightweight structural systems. Waggoner has served as President of the Austin Chapter of the Structural Engineers Association of Texas and as a director on the State Board. He is active in several committees of the Structural Engineering Institute of ASCE and served as co-chair for the 2009 Structures Congress in Austin. Throughout his career, he has maintained close ties with the department. He frequently works with structural engineering graduate students and is a regular contributor to experimental and analytical studies at Ferguson Structural Engineering Laboratory.

Call for Nominations

Please take a moment to honor a deserving colleague, friend or former classmate by nominating them to receive the Outstanding Young Alumnus/Alumna Award. We invite you to nominate a graduate under the age of 40 who meets the following criteria:

- outstanding service and contributions to the engineering profession
- service to the Department of Civil, Architectural and Environmental Engineering, Cockrell School of Engineering, and/or UT campus; or community activities (involvement in public service, service organizations, and/or charitable causes). Deadline: April 1, 2013

Download a nomination form: www.caee.utexas.edu/alumni-industry/outstanding-young-alumni.html

Questions? Please contact Laura Klopfenstein at klopfenstein@mail.utexas.edu or 512-471-1279.
Where Are They Now?

We recently caught up with the six CAEE graduate and undergraduate students who received 2012 Graduate Research Fellowships from the National Science Foundation (NSF). The fellowships provide each student more than $40,000 annually for three years. Approximately 1,000 fellowships were awarded in the U.S. in 2012.

**Eric Cherasia** is pursuing his master’s in environmental and water resources engineering at UT. Under the supervision of Drs. Lynn Katz and Gerald Speitel, his master’s research evaluates steady-state monochloramine removal in point-of-use drinking water filters using catalysis. In the future, Cherasia hopes to further advance water treatment technologies, especially in the field of reverse osmosis membrane processes. “As the availability of fresh drinking water sources dwindle, it is essential for a water treatment method to be able to effectively and efficiently purify brackish or even saltwater sources,” he says. “Ultimately, the NSF fellowship will give me the ability to help improve lives by providing access to clean drinking water.”

**Matthew Hiatt** is a graduate research assistant working at the Center for Research in Water Resources under the supervision of Dr. Paola Passalacqua. His current research focuses on river deltas and coastal wetland restoration, specifically on understanding how water and environmental fluxes are partitioned through river distributary systems. He also studies the amount of denitrification that could occur on the delta islands. The end goal is to develop design tools to aid engineers and decision-makers in restoring coastal wetlands. After finishing his M.S., Hiatt hopes to pursue a Ph.D. and join a faculty research team studying complementary disciplines such as engineering, geology and ecology.

**Colleen Lyons** entered UT’s environmental and water resources engineering program as a master’s candidate in the fall of 2011 under the supervision of Dr. Mary Jo Kirisits. The NSF fellowship has given her the freedom and flexibility to explore the subjects that interest her, she says, with current research focused on how nanoparticles impact biofilm strength. She plans to continue into the Ph.D. program and hopes to join the R&D department of an international organization conducting research on alternative ways to provide clean drinking water to communities across the globe.

**Alissa Neuhausen** is in her second year of the structural engineering master’s program at UT, working towards a dual degree in public affairs. She works as a graduate research assistant at Ferguson Laboratory for Dr. Richard Klingner, testing the effect of alkali silica reactive (ASR) concrete on anchor behavior. This spring she begins work on a new project made possible by the NSF fellowship. Her goals are to continue research and receive her Ph.D., eventually working to mitigate risk from natural disasters caused by buildings and infrastructure while encouraging better policies that allow for more resilience following disasters.

**Jeseth Delgado Vela** is a first-year Ph.D. student at the University of Michigan in the department of civil and environmental engineering, working on a project to investigate the microbial transformation of pharmaceutical compounds under different conditions in the wastewater treatment system, under the supervision of Dr. Nancy Love. The research aims to answer which microorganisms transform which pharmaceuticals, the biochemical pathways for these transformations and the best biological wastewater treatment system to degrade pharmaceuticals. Delgado Vela, who is “immensely grateful for the many amazing professors I had during my undergraduate education,” hopes to become a professor in the future.

**Raul Tenorio** received his bachelor’s degree in civil engineering at The University of Texas at Austin, where he was involved in research projects including the ozonation of pharmaceutically active compounds and the synthesis of silver nanoparticles used on ceramic pot filters for disinfection. Tenorio is now a graduate student in the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign, where he studies photochemical reactive species in algal systems. Tenorio plans to obtain his Ph.D. and hopes to teach or become a consultant in the future.
The Academy of Distinguished Alumni in the Department of Civil, Architectural and Environmental Engineering was established in 2003 to recognize the professional achievements and contributions of our graduates. Academy members are leaders within their professional communities and serve as role models for our students. Each active member holds at least one degree in civil, architectural, or environmental engineering from the University of Texas at Austin. Honorary members had distinguished careers on the faculty in the department.

The department has more than 10,000 living alumni. Fewer than 125 have been inducted as members of the Academy of Distinguished Alumni.

Raul E. Allegre BS 1984 excelled in the classroom and on the UT football field. After graduation, he had a nine year career in the NFL as a place kicker with the Baltimore and Indianapolis Colts, the New York Giants, and the New York Jets. He continued practicing civil engineering in the off seasons, working for consulting firms in Baltimore and Indianapolis. Two Super Bowls later, his active player days ended in 1992 due to injury. Soon after, he developed a successful Spanish-language television show for NFL films, completed a MBA from UT Austin, and launched a marketing and sports promotion firm. Allegre is one of the most recognizable faces to the Spanish-speaking football fan; he currently broadcasts NFL Monday Night Football to Latin America on ESPN. He is also a contributor to many other ESPN programs and dedicates much time to civic activities and charities.

Dan A. Brown PhD 1985 is recognized as one of America’s leading authorities on the construction and design of deep foundations for transportation structures. After 22 years on the faculty at Auburn University, he remains active in deep foundation practice through his consulting firm, Dan Brown and Associates. His work has been recognized with the Distinguished Service Award of the Deep Foundations Institute, the ASCE Martin Kapp Foundation Engineering Award, the Walter L. Huber Research Prize, and the Outstanding Service Award of ADSC, the International Association of Foundation Drilling. Following in the footsteps of his former UT professor, Lymon Reese, and his colleague, Mike O’Neill, he recently co-authored the Federal Highway Administration manual entitled “Drilled Shafts: Construction Procedures and LRFD Design Methods.”

Elia King de Jordan BS 1970, MS 1974 is recognized for her creative, innovative, and transformative leadership in multinational, high-performance organizations. She began her professional career in transportation engineering with the Ministry of Transportation and Communications in Lima, Peru. After earning a MBA, she began a new phase of professional development in organizational management. During her 24-year career with pharmaceutical firm Eli Lilly and Company, she became the corporation’s first female general manager in its 118-year history. King later advanced to general manager and supervised the regional organization for 11 countries in the Andean and Central American region. Now as an entrepreneur, she is serving as executive director of Rais Vida and expanding the Peruvian company’s natural beauty and wellness products market internationally.
Elie H. Homsi MS 1986 is one of North America’s outstanding bridge constructors. As senior VP at Parsons Corporation, he provides construction engineering support to the different business units including the newly formed Parsons Construction Group. For many years, he has made exceptional contributions to the development of construction technologies for major bridge projects. Homsi has developed new and innovative construction engineering solutions that have garnered numerous awards: ENR Top 25 Newsmaker in 2008, Nova Award for Innovation, American Segmental Bridge Institute (ASBI) Award of Excellence in Leadership, and FHWA Environmental Excellence Award. His services are now in demand in Europe, the Middle East, Asia, and Africa. Homsi also serves on numerous boards and technical committees for ASBI, the International Association of Bridge and Structural Engineers, and the Post Tensioning Institute.

James H. Metzger BS 1962 has worked in commercial construction for more than 45 years. After earning his B.S. degree, he worked as a surveyor, field engineer, project engineer, and project manager on projects related to railroads, buildings, chemical plants, locks and dams, and nuclear power plants. From 1963-78, he worked for C.H. Leveall & Co. where he achieved the position of senior V.P. and COO. In 1978, Metzger was named president of IBS Contractors in Houston, specializing in medium-rise office buildings, retail, warehouses and industrial facilities in Texas and New Mexico. Along with a partner, he established Metzger Construction in 1986 and eventually expanded to 10 other states. The company was one of the first to construct large tiltwall structures using job cast insulated concrete “sandwich wall panels”.

G. Charles Naeve BS 1974 is a founding member and managing principal of Architectural Engineers Collaborative, a structural engineering firm with a long history of award-winning projects. As a structural engineer, his expertise lies in integrated building behavior and he is known for composing structures that support architectural aesthetic and sustainable building design in harmony with the environment. Naeve was an early advocate for sustainable design in Texas, serving as the engineer on model green buildings for the City of Austin and the State of Texas. In 2001, he was selected as an honorary member of the American Institute of Architects for his significant contributions to the built environment. He regularly participates in juries and professional panels for CAEE’s architectural engineering design/capstone courses and was a member of the CAEE External Advisory Committee.

Kelley S. Neumann BS 1981 manages the planning, design, and construction of the San Antonio Water System’s (SAWS) large capital programs as senior vice president of strategic resources. She has also been involved with the development of the city’s long range water management plans and oversees the SAWS mentorship program. Neumann began her professional career as an officer in the Army Corps of Engineers and served in the Reserves for more than 20 years. She later worked as the airport engineer at the San Antonio Airport for several years and was involved in the reconstruction of a primary runway. In 1992, she joined SAWS and held many different assignments to improve the efficiency and operations of water/wastewater service for the utility. By gubernatorial appointment, she served on the Texas Board of Professional Land Surveying for nine years.

Roy E. Olson (Honorary) joined the CAEE faculty at UT Austin in 1970 as a professor, after establishing himself as a leading international scholar on soil behavior at the University of Illinois. Olson is considered by many to be the catalyst behind the success of the department’s geotechnical program. Throughout his career, he assumed high-level leadership roles in professional societies while actively teaching and mentoring students. He has also been widely recognized for his professional accomplishments - he received the Huber Research Prize, the Croes Medal, the Norman Medal, the Terzaghi Lecture, the ASTM Hogentogler Award, and was elected to the National Academy of Engineering in 2003. However, his greatest pride is in the accomplishments of his former students; many have become influential leaders in geotechnical engineering.
Thank You, Joe Malina: “Consummate Teacher” Retires After 51 Years of Service

Retiring after more than half a century in the Department of Civil, Architectural and Environmental Engineering, Dr. Joseph F. Malina, Jr. leaves a lasting legacy as an academic and industry leader, a trusted advisor and mentor, a respected and involved professional engineer, and a statue wrangler.

“One of my favorite memories of Dr. Malina is his involvement in tracking down Sir Alexander Frederick Claire (Alec) when the famous statue went missing from the Engineering Library,” says James (Jimmy) W. Canning (BSCE 1979). “It was a diabolical scheme, and the perpetrators were never caught, but I know that Doc did some behind-the-scenes negotiating that ultimately led to Alec being returned during the annual Engineering Convocation.”

Malina’s strong relationship with students is a common theme mentioned by his colleagues. “Dr. Malina was a new assistant professor when I became a graduate student at Texas in 1963,” says Davis L. Ford (MSCE 1965, PhD 1967) “He is probably one of the most student-dedicated professors I have ever met … and one who has contributed to what is now the CAEE Department more than anyone I know.”

Malina joined the faculty as an assistant professor in 1961 and has held the rank of professor since 1970. An enthusiastic teacher and mentor, Malina has drawn on his extensive engineering experience, research and consulting assignments to help thousands of students understand the real-world importance and application of civil and environmental engineering. He has supervised more than 150 M.S. students and over 25 Ph.D. graduates and taught multiple generations of students from the same families, including one trifecta of grandfather, son and grandson.

As the C.W. Cook Professor in Environmental Engineering and part of the Environmental and Water Resources Engineering program, Malina’s research spans a broad spectrum, from studies that document the treatability of municipal and industrial wastewater and sludge to the characterization of the quantity and quality of highway runoff and development of best management practices for the treatment and control of highway runoff. Environmental engineers regularly refer to his research and the short courses he has organized on advanced water pollution control have shaped treatment plant design and operations across the world.

He has long focused on the ethical responsibilities of engineers to protect the health and safety of the public and is a true role model. Malina recollects the dean of his own freshman class imparting the importance of engineering (to his then all-male class): “Gentlemen, notice that when a medical doctor makes a mistake, they bury it the next day. When engineers make a mistake, the public is stuck with it for months. So be careful.”

The certifications on Malina’s business card (Ph.D., P.E., BCCE, D.WRE.), hardly begin to summarize his career. “When I started in this field, it was called ‘sanitary engineering,’ and people sort of snubbed their noses at it,” remembers Malina “They thought it was all taken care of by people like sewer worker Ed Norton on ‘The Honeymooners.’ They assumed enough order was out there to manage wastewater and solid waste and didn’t give it a second thought.”

Soon, however, awareness spread that environmental engineering covered a much broader spectrum of activities, including energy recovery and cost containment. “People began to realize that the organic portion of waste could be converted to methane gas, and began to look more closely at their options,” he said.
His professional contributions have been recognized by numerous awards, including the Lifetime Achievement Award from the Water Environment Association of Texas, the Arthur M. Wellington Prize from the American Society of Civil Engineers (ASCE), the Edward J. Cleary Award and the Gordon Maskew Fair Award from the American Academy of Environmental Engineers and Scientists (AAEES), and the Engineer of the Year Award from the Travis Chapter of the Texas Society of Professional Engineers. He is a life member of the ASCE, AAEES, American Water Works Association, Water Environment Association, and National Society of Professional Engineers. He is a founding member of the ASCE Environmental and Water Resources Institute and served as a program evaluator for ABET for more than 30 years.

Malina also helped shape the department though his administrative service. He served as department chair from 1976 to 1988 and was instrumental in overseeing the department’s growth and building its reputation.

“I made it a point to attract national visibility for the program,” says Malina, attributing his tenacity to his Brooklyn roots.

The son of a Czech father and Polish mother, he was the second oldest of eight children. He credits his father, an ironworker who helped construct the Empire State Building, for shaping his strong work ethic. Malina also credits former College of Engineering Dean Earnest Gloyna (MSCE 1949) for molding his professional career, and also his personal life. As a new professor, it was suggested to him that he meet a young woman named Ida Klein at a dinner party hosted by Dean Gloyna. “They never did arrange it, so finally I got her number and just did it myself,” says Malina. He and Ida, now married more than 50 years, have five children and nine grandchildren. This devotion to family is another character trait lauded by Malina’s colleagues, including Charles A. Sorber (PhD 1971), professor emeritus and former student of Malina’s, who describes him as “a wonderful father and family man.”

While he officially retired August 2012, Malina will continue to teach and advise students for the next two years. Asked what his favorite part of his long and esteemed career has been, he answers that hands-down it has been working with the students. “I guess my philosophy is, if you’re going to take on a job, either enjoy doing it or don’t do it!” Thanks to Malina’s dedication, expertise and enthusiasm, thousands of engineers embody his wise counsel and continue his strong legacy.

IN MEMORIAM: B. FRANK MCCULLOUGH

Dr. B. Frank McCullough, Adnan Abou-Ayyash Centennial Professor Emeritus in Transportation Engineering at UT Austin, passed away on November 26, 2012. He was best known for his pioneering work on concrete pavements. His research related to highway and airport pavements led to methodologies used by the Texas Department of Transportation (TxDOT) and other agencies in the U.S. and around the world.

Born in 1934, McCullough graduated from Austin High School in 1952 and earned his B.S. in civil engineering from UT Austin in 1957. After graduation, he worked at Convair Aircraft in Fort Worth, but returned to Austin to work as a design-research engineer at the Texas Highway Department (now TxDOT), where he pioneered the use of pavement grooving techniques. He earned his M.S. from UT Austin in 1962 and his Ph.D. from the University of California at Berkeley in 1969. Shortly after completing his graduate studies, he joined the faculty of UT Austin as an assistant professor of civil engineering. He was promoted to associate professor in 1972 and to full professor in 1976. McCullough served as director of the Center for Transportation Research (CTR) for 19 years and was also a co-founder of the consulting firm Austin Research Engineers, which specialized in highway and airport engineering.

During his nearly 40-year teaching career, McCullough advised more than 100 master’s candidates and 34 doctoral students. He also taught special short courses and continuing education courses over the years for other universities, research organizations and federal agencies. He supervised more than 50 research projects and 40 interagency agreements concerning a broad range of topics.

He was an active member in numerous professional societies and authored dozens of research publications. Among his many awards, he treasured the Joe J. King Professional Achievement Award from the Cockrell School of Engineering. He served as a Boy Scout Master, youth sports coach, president of an LDS Young Men’s Improvement Association, and as a counselor in “Education to Inmates” at Travis County Jail. Faith and family were driving forces in McCullough’s life.
WHAT IS THE LEGACY CAMPAIGN?

People are the most important resource within the Department of Civil, Architectural and Environmental Engineering (CAEE) at The University of Texas at Austin. We have a bold vision to compete for the world’s brightest student leaders. Recognizing our need to support human capital and our commitment to preparing for our future, CAEE is launching the Legacy Campaign, an alumni fundraising effort that seeks to raise $10 million over five years. The campaign will establish programs for Legacy Fellows and Legacy Scholars with endowed funds dedicated to attracting top graduate students and supporting undergraduate student researchers. Legacy Fellows will be recognized among the most prestigious graduate fellowships, and the Legacy Scholars will be distinct among our peer institutions, which typically lack the resources to fund undergraduate research.

The Legacy Campaign will enable CAEE to recruit the most sought-after graduate students and to engage our brightest undergraduates to work alongside faculty on visionary research that delivers real-world results, grows our economy, and creatively addresses the future’s most daunting societal challenges.

LEGACY FELLOWS

Today’s graduate students are the next generation of technology creators, economy builders, society servers, researchers, and teachers. CAEE’s national reputation hinges in part on the quality of graduate students we recruit. While multiple factors ensure recruitment of undergraduates, CAEE is not as competitive in attracting top graduate students from across the U.S. Prestigious, fully-funded Legacy Fellowships will enable CAEE to extend competitive offers and sustain our standing as one of the top five nationally ranked programs in the country.

**The Legacy Campaign will secure the financial resources needed to build a preeminent endowment for graduate fellowship support.**

LEGACY SCHOLARS

There has never been a more important time to support undergraduates who are interested in research opportunities. Data show that working in a lab as an undergraduate significantly enhances the learning experience through one-on-one interaction, encourages pursuit of a graduate degree, and teaches skills that are highly valuable in the workplace. No matter the impetus behind a student’s interest in undergraduate research, the benefit is dramatic. CAEE does not currently have the resources to pay undergraduates for their work on research teams, but the Legacy Campaign will secure financial resources to permanently endow undergraduate research stipends.

SUSTAINING EXCELLENCE

More than 100 years since its founding, CAEE and its alumni continue to meet the challenges of maintaining, modernizing, expanding and securing the vast infrastructure that underpins our modern society while simultaneously working to sustain our environment for future generations. CAEE’s success by any measure—top national rankings, graduation rates, teaching awards—is tied to the accomplishments of its faculty, its graduate students, and its undergraduates. If CAEE is to continue to distinguish itself among peer institutions, it must invest in its most valuable resource—our students.

HOW IT WORKS

Legacy Funds are housed together creating a larger, overall pool of support for CAEE undergraduate and graduate education. The return of the endowed Legacy Funds gives the department the highest flexibility to address critical areas of research and recruitment. To date, two Legacy Funds have already been created in honor of Dr. Malina, and Charles and Patricia Metcalf. If you would like to create your own Legacy Fund, please contact Michael Barasch at michael.barasch@austin.utexas.edu or 512-471-0469.

“The Legacy Campaign honors the vision and accomplishments of the faculty who built our department and provides unique opportunities for our students to become the engineering leaders of the future.”

- Sharon L. Wood, CAEE Chair
Stephen Boyles received a CAREER award from the National Science Foundation for his proposal, "Integrated Multiresolution Transportation Network Modeling." He will investigate the relationships between transportation networks of different scales/sizes, learn how to quantify these relationships, and discover the implications for transportation planning.

Chadi El Mohtar received a CAREER award from the National Science Foundation for his proposal, "Balancing Rheology and Filtration: An Experimental and Probabilistic Approach for Suspension Flow and Sustainability in Heterogeneous Granular Media." The goal of his work is to develop scientifically-based approaches to upgrade existing geotechnical infrastructure systems using grouting.

Desmond Lawler received the Charles R. O’Melia Distinguished Educator Award from the Association of Environmental Engineering and Science Professors. The award recognizes excellence in teaching, advising, mentoring, and research. Lawler was also selected as the Distinguished Lecturer for 2012-13 by the Association of Environmental Engineering and Science Professors.

Randy Machemehl received the Distinguished Contribution to University Transportation Education and Research Award from the Council of University Transportation Centers. The award recognizes individuals who have a long history of outstanding contributions to university transportation education and research.

David R. Maidment received 2012 Ray K. Linsley Award from the American Institute of Hydrology. The award recognizes individuals who have made outstanding contributions in surface water hydrology.

Joseph F. Malina, Jr. was selected as 2012 Engineer of the Year by the Travis Chapter of the Texas Society of Professional Engineers.

William O’Brien was recognized as the Outstanding Researcher for 2012 by the Construction Industry Institute. He awarded for research which significantly contributed to the improvement of the construction industry.

Gerald Speitel Jr. was selected to receive the 2012 Distinguished Alumnus Award from the Department of Environmental Sciences and Engineering at the University of North Carolina.

C. Michael Walton has been selected to receive the 2013 Frank Turner Medal for Lifetime Achievement in Transportation. He is being honored for “an influential career in transportation that has combined distinguished university teaching and research, exceptional service to government at the state and federal levels, active engagement with the private sector, and extraordinary service to professional organizations.”

Zhanmin Zhang received the 2012 James Laurie Prize from the Transportation and Development Institute within ASCE. He was recognized “for his contributions to the advancement of knowledge and understanding of the management of highway infrastructure systems and, in particular, his development of a state-of-the-art pavement condition performance prediction process and pavement needs estimates for different pavement condition goals.”

Jinying Zhu received the 2012 ASNT Fellowship Award from the American Society of Nondestructive Testing. She received the award for her proposal entitled “Analysis and Development of a Focused Spark Source for Air-Coupled Ultrasonic NDT” of outstanding work from a young promising researcher within the indoor air sciences.

Jorge Zornberg and former doctoral student John McCartney (PhD 2007) received the James R. Croes Medal from the ASCE for their paper, “Centrifuge Permeameter for Unsaturated Soils: Theoretical Basis and Experimental Developments.”
Monitoring landslide movements provides useful information that can potentially prevent catastrophic loss of life and property, and assists in the development of guidelines for sustainable land use planning. Many areas of high landslide risk are not monitored until damaging movements occur due to the significant time and cost associated with field instrumentation. As a result, our fundamental understanding of landslide triggering mechanisms and our ability to model landslide movements accurately has been hampered by limited field data. Satellite imagery is now providing an opportunity to complement traditional field instrumentation to fill this data gap.

Geotechnical engineering professor Ellen Rathje and graduate student Oscar Suncar recently performed a study using optical image correlation to measure deformations of the Portuguese Bend Landslide (PBL), which moves 1 to 7 m/yr south of Los Angeles. The study aimed to affirm that digital imagery from satellites provides displacement estimates consistent with traditional field measurements but also provides a more detailed picture of the displacement patterns across a landslide.

The PBL is located along the Pacific coast in Rancho Palos Verdes and consists of an elevated block of marine sediment with a core of metamorphic basement rock. The area has a history of landslides going back 250,000 years and the landslide complex was mapped by geologists starting in the 1920s. It was not until 1956 that it was fully investigated due to movements initiated by 20 m of fill placement associated with the construction of a road. The construction fill destabilized the slope and more than 130 homes were destroyed resulting in the City of Rancho Palos Verdes being sued.

Because of the critical nature of this landslide, the movements of the PBL have been monitored by the City of Rancho Palos Verdes and the Abalone Cove Landslide Abatement District (ACLAD) for the last 20 years. This monitoring consists of 72 GPS monuments distributed across the landslide complexes, each of which are surveyed every year. These monuments provide valuable information about the movements in and around the landslide.

Assessment of Landslide Deformation

The intent of Rathje and Suncar’s NASA-ROSES-sponsored study was to compare field data from the GPS stations to data from optical image correlation, which is a powerful remote sensing technique for estimating deformations of slow and rapidly moving landslides. This technique provides deformations at a spatial resolution that...
generally cannot be obtained with traditional field instruments or other remote sensing techniques.

Optical image correlation analysis consists of identifying shifts of small segments of pixels between two optical images using cross correlation. For each segment of pixels, an East-West and a North-South shift are estimated along with a measure quality of the correlation. The aerial images must be geometrically corrected and precisely co-aligned before the correlation analysis can be performed. The correlation analysis is performed for hundreds to thousands of pixel segments, providing a detailed picture of the pattern of deformation across the landslide.

For Rathje and Suncar’s study, two 0.50 m resolution images from the Digital Globe WorldView satellite were used. The deformations computed from the optical images over the time period of August 31, 2010 to May 29, 2011 were compared with those measured by the GPS stations within the Portuguese Bend Landslide. Yearly GPS measurements from 2009, 2010 and 2011 were used to estimate the expected deformations during the time period. Approximately 20 GPS stations are located over the ~1 km² of the PBL. Most of the GPS stations recorded approximately 0.5-m of displacement towards the coast over this 9-month time period, while one station recorded over 6 m of movement near the coast. However, because the GPS stations are spaced at 200-300 m from each other, they do not provide detailed information on how the deformations vary across the entire landslide. The deformations from optical image correlation show the same levels of deformation as the GPS monuments, but are spaced about every 30 m improving the spatial density of measurements by almost an order of magnitude. This improved spatial density provides a clearer pattern of the deformation patterns, in particular showing how the deformations are concentrated within the central and southeast sections of the landslide.

The team concluded that correlation of high resolution optical imagery can provide accurate estimates of ground deformations and displacement fields over time. The remote sensing results provide more detail of the landslide’s deformation patterns with a high level of accuracy and reliability. Overall, the study shows that field-based monitoring is complimented by enhanced satellite monitoring. “We hope that remote sensing becomes a common tool used to monitor landslides and better understand landslide mechanics, such that landslide risks are reduced in the future”, says Rathje.

**Analyzing Global Geotechnical Hazards**

Rathje has utilized remote sensing for earthquake damage assessment and mapping all over the globe. Recently, she was among a team of engineers and scientists commissioned by the United Nations to create the first detailed soil map of Port-au-Prince, Haiti in the aftermath of the January 2010 earthquake. This map used field measurements of soil stiffness and remote-sensing-based damage estimates to identify the soil conditions that lead to enhanced damage in some parts of the city. Suncar also accompanied Rathje to Haiti on the earthquake reconnaissance surveys performed just weeks after the earthquake.

The focus of Rathje’s research is understanding and predicting geotechnical earthquake hazards, with particular emphasis on the evaluation of earthquake-induced ground failure (slope instability, soil liquefaction), the effect of soil conditions on earthquake ground motions, and the use of remote sensing to document earthquake hazards. She has received many awards for her work, such as the Huber Research Prize from ASCE, and is the Co-Chair of the NSF-sponsored Geotechnical Extreme Events Reconnaissance (GEER) Association.
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We wish to express our sincere gratitude to the individuals and organizations who donated to the Department of Civil, Architectural and Environmental Engineering in 2012. Your gifts enhance our students’ educational experiences, and help them become the next generation of international leaders.

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Charles A. Brown, Jr.

1950’s
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Ned H. Burns
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Earl G. Cutter
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Richard Klingner Retires After 36 Years at CAEE

Professor Richard Klingner retired in January 2013 after 36 years on the CAEE faculty. Klingner taught classes in structural engineering in both the civil and architectural engineering programs and served as the associate chair for architectural engineering since 2004. He began his academic career at the University of Texas at Austin in January 1977 as an assistant professor immediately after completing his Ph.D. at the University of California, Berkeley. Before entering the Ph.D. program, he was a volunteer with the Peace Corps in Honduras, where he utilized his skills in the design and construction of masonry and reinforced concrete structures and became fluent in Spanish.

Klingner research interests include the dynamic response of structures; earthquake-resistant design of masonry and reinforced concrete structures; and fastening to concrete. He is a leader in the development of modern building codes for earthquake-resistant masonry structures. Techniques developed by Klingner and his colleagues are now widely recognized, and helped masonry structures in the Los Angeles area withstand the 1994 Northridge earthquake. His work has also been instrumental in the development of design provisions for anchorage to concrete.

Throughout the years, he has received numerous teaching awards from the department and UT Austin, and recognition for his technical contributions and leadership from the American Concrete Institute, The Masonry Society, the American Society for Testing and Materials, and the Structural Engineers Association of Texas. He also authored the textbook *Masonry Structural Design*, which brings together practical experience, laboratory research and classroom teaching, thus embodying Klingner’s extensive experience in engineering design and post-earthquake reconnaissance.

“During my five years at UT Austin, I learned a great deal about experimental work,” says Jennifer Eisenhauer Tanner (PhD 2003), associate professor at University of Wyoming. “Through the process of constructing, testing and synthesizing results, I grew into a researcher. Now I am in the next phase of my career as a faculty member at the University of Wyoming. After 10 years of teaching and research, I am proud to call Professor Richard Klingner a mentor and friend.”

In celebration of his distinguished career, Richard Klingner will be honored during STEER 2013 at the Ferguson Structural Engineering Laboratory. He will give a presentation during the forum on April 5, 2013. For more information on this event, please contact graduate research assistant Vasilis Samaras at vasamara@gmail.com.

Waller Creek Tunnel Tour

In November, over 50 alumni had the opportunity to learn more about the Waller Creek Tunnel project and tour the job site. The project in downtown Austin includes construction of a storm water bypass tunnel from Waterloo Park to Lady Bird Lake. The tunnel is designed to control flooding and erosion along lower Waller Creek and to allow for redevelopment.


If you would like to lead a tour of an ongoing construction project for alumni or students, please contact Laura Klopfenstein at klopfenstein@mail.utexas.edu or 512-471-1279.
All in the Family: Serving as Texas Section ASCE President

The Texas Section of the American Society of Civil Engineers (ASCE) is celebrating its centennial during 2013. University of Texas alumni have often played leadership roles within the Texas Section, but the current president, Jack Furlong (BSCE 1974) is especially proud of his ties to UT. Jack’s father, Richard (Dick) Furlong (PhD 1963) also served as president. This is only the second time that two generations of engineers from the same family have served in this role. The other pair of father-son presidents was John A. Focht (BSCE 1914, MSCE 1929) and John A. Focht, Jr. (BSCE 1944).

Jack, a construction manager for the firm CH2M Hill, Inc., was elected as president after having served in several positions within the section, which represents approximately 9,000 members throughout Texas. The organization promotes and recognizes civil engineering excellence and professional growth, and members have been involved in some of the most significant civil engineering projects in Texas history. As president, Jack would like to see the membership grow and for younger members to continually take on increasingly more responsible roles such as helping improve infrastructure within the state.

Jack feels his experience as a CAEE student helped him prepare for his career and this leadership role. Having various jobs as an undergraduate including working as a laborer at Ferguson Structural Engineering Laboratory and as a draftsman in a consulting firm helped him understand the complexity of engineering and how projects are completed. That his father, Dick, served on the CAEE faculty for 40 years also influenced him. “I did have him for one course in college and he was tough, but fair,” says Jack. “Growing up, my father had a patient nature. He tutored me through K-12 and advised me on which courses to take in college.”

Dick, now retired, is proud to see Jack serving as president as he once did. “Jack has worked diligently in many ASCE offices for over 30 years,” he says. “His accumulated experience and the effectiveness of his leadership certainly made his selection a good choice.” Dick served as president in 1996-97, was the executive secretary of the section for many years, all while teaching full time. He helped many students and ASCE members grow in their profession.

Alumnus Craig Benson Elected to NAE

Craig Benson (MSCE 1987, PhD 1989) was one of 66 new members and 10 foreign associates elected to the National Academy of Engineering (NAE) in 2012. Election to the NAE is among the highest professional distinctions accorded to an engineer.

Benson, Wisconsin Distinguished Professor, director of sustainability research and education, and chair of the Department of Civil and Environmental Engineering at the University of Wisconsin-Madison, was recognized for “improvements in design, construction and monitoring of earthen liners and covers for municipal hazardous and radioactive waste landfills.”

He has served as the director of the Recycled Materials Resource Center, which focuses on sustainable construction of transportation infrastructure. He is president of the ASCE Geo-Institute and is vice chair of ASTM Committee D18 on Soil and Rock. He previously served as the Editor-in-Chief of the Geo-Institute’s Journal of Geotechnical and Geoenvironmental Engineering and is also a member of the UT CAEE Academy of Distinguished Alumni.

“My expertise falls broadly in the discipline referred to as geoenvironmental engineering,” he says. This discipline is at the interface of the built and natural environments, and deals with issues in the subsurface or interactions between conditions at the earth’s surface and the subsurface. In most cases, the important objectives are protecting soil and ground water or engineering systems that reduce emissions or save energy.
CAEE alumni have varied professions and interesting careers. Faculty, current students, and fellow graduates are always interested in learning about the lives alumni lead after they leave UT.

If you have an update you’d like to share - a career change, promotion, retirement, marriage or baby, please e-mail Laura Klopfenstein at klopfenstein@mail.utexas.edu or visit our website at www.caee.utexas.edu/alumni

50’s
Jose Guerra (BSARE 1957) is the recipient of the 2012 National Society of Professional Engineers Award. It is presented to an engineer who has made outstanding contributions to the engineering profession, the public welfare, and humankind.

70’s
W. Walter Chiang (MSEHE 1970) was the 2012 recipient of the Water Environment Association of Texas Lifetime Achievement Award.

80’s
Warren J. “Joe” Hahn (BSCE 1989, MSEHE 1991) recently received tenure and promotion to Associate Professor of Decision Sciences at Pepperdine University, where he teaches in the Graziadio School of Business and Management.

Gerardo Ocañas (PhD 1980) recently joined the firm Lockwood, Andrews & Newnam, Inc. (LAN) as a senior project manager.

Jeremy Semrau (BSCE 1988) was promoted to Professor of Civil and Environmental Engineering at the University of Michigan.

David Stueckler (BSARE, 1982) has been named President and CEO of Linbeck Group, LLC, based in Houston. David, who has been with Linbeck for 30 years, is also chairman of the national AGC of American Lean Construction Forum Steering Committee.

90’s
Sergio M. Alcocer (PhD 1991) has been designated by Mexican President Enrique Peña as Undersecretary for North America within the Ministry of Foreign Affairs of Mexico. This office is in charge of coordinating the relations between Mexico and the US, and between Mexico and Canada.

Timothy Bosetti (MSCE 1997) was recently promoted to Colonel in the US Army. He also has two future engineers: Joseph (5) & Elizabeth (2).

00’s
Cem Altuntas (MSCE 2002) announces the birth of the family’s first baby girl, Elif Altuntas, born on 1/17/2013 in London, UK.


Matt Gipson (BSARE 2000) is the father of twins, Oliver and Zoe, who joined older brother, Benjamin on 11/8/2012. Matt is an engineer at Technip in Houston.

Elizabeth Perez (BSARE 2001) welcomed first child Emma Cristina on 7/26/2012. Elizabeth is a project controls coordinator at EDG, Inc. in Houston who just had her 10 year anniversary with the company.

Jennifer Verhulst (BSARE 2001, MSCE 2003) and Stewart Verhulst (MSCE 1999) are the parents of Madeleine Joyce, born 1/16/2012.
This past summer, project investigators of “Microbes in Homes Across Cultures” came knocking on associate professor Atila Novoselac’s door, seeking his expertise in pollutant transport and human exposure within an enclosed space. The team needed his help collecting samples in the Amazon Basin by recording indoor environmental parameters in a variety of human dwellings ranging from a village in the jungle to a major metropolitan area.

Their overall objective was to study the building microbes of homes within a wide spectrum of acculturation and to compare household microbes with animal/human inhabitants. As part of the project, he collected samples in the indigenous village of Checherta. The isolated and humid conditions of the rainforest presented many challenges but the team quickly learned to adapt.