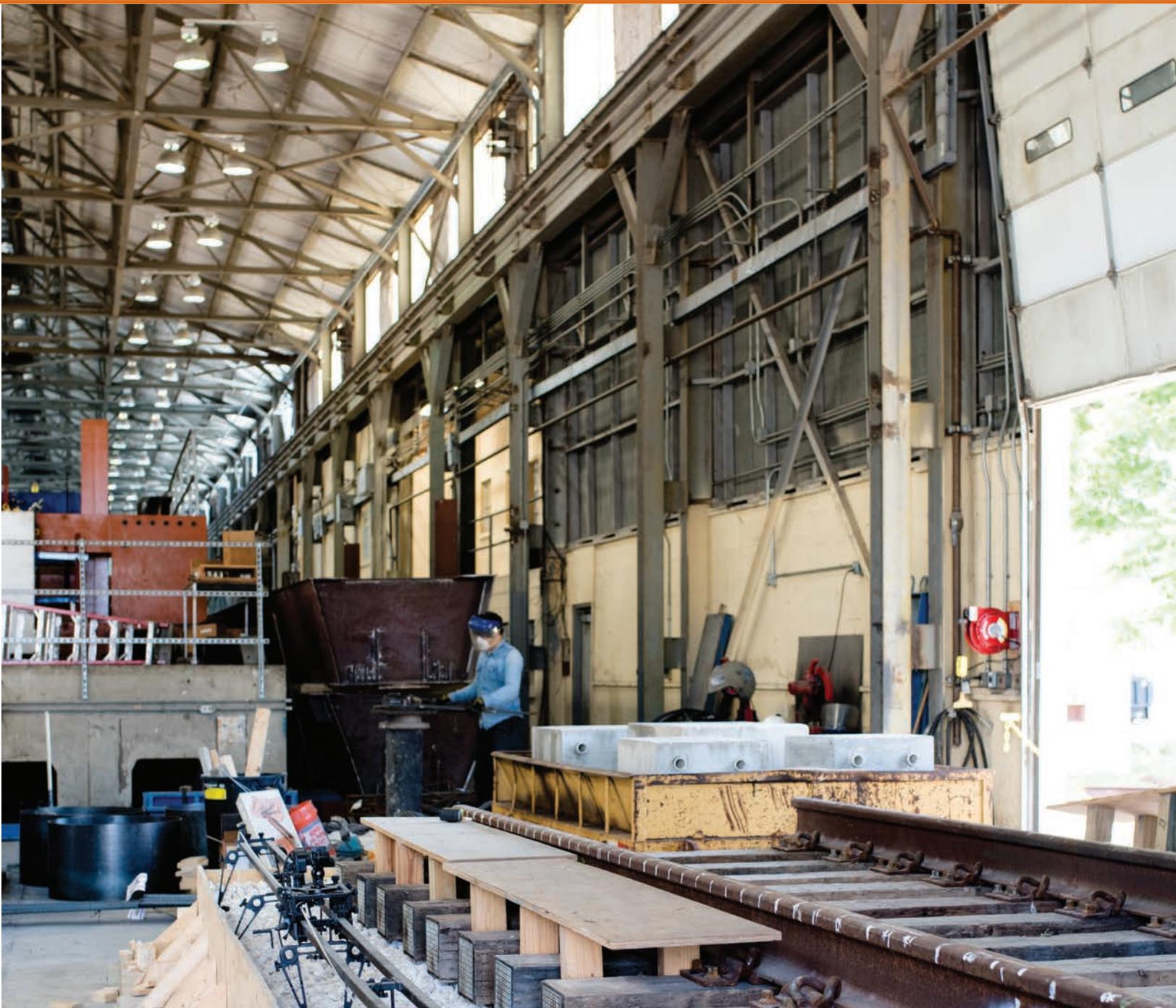


PEOPLE + PLANET

THE MAGAZINE OF THE DEPARTMENT OF CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING
AT THE UNIVERSITY OF TEXAS AT AUSTIN



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The University of Texas at Austin
Civil, Architectural and
Environmental Engineering
Cockrell School of Engineering



I AM VERY EXCITED ABOUT THE FUTURE of civil, architectural and environmental engineering. We are on the cusp of transformative and disruptive changes in how we serve society, including:

- transportation systems filled with autonomous vehicles;
- design, construction and operation driven by, rather than aided by, computers;
- smart systems that make cities more efficient and sustainable;
- adaptive measures to accommodate changing conditions in the environment and in society;
- alternative sources for energy and water;
- and new technologies and materials for construction.

I am also excited about the challenge associated with these changes in our future. We need to prepare students who can harness and lead advances in technology, who have multi-disciplinary and diverse perspectives and who can manage systems. We need to conduct research that drives transformation and manages the disruption. We need to be leaders in public policy and management.

I am pleased with the work that our faculty, staff and students are doing right now to solve the problems of tomorrow. We have a rich history of producing inventions and visionaries. We will continue to build on this tradition by equipping our students with the resources and tools to be leaders in civil, architectural and environmental engineering and in society.

Robert Gilbert

Chair, Department of Civil, Architectural and Environmental Engineering

Cockrell Family Chair of Departmental Leadership #3

Brunswick-Abernathy Regents Professorship in Soil Dynamics & Geotechnical Engineering

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People + Planet is published once a year for alumni and friends of the Department of Civil, Architectural and Environmental Engineering in the Cockrell School of Engineering at The University of Texas at Austin.

3RD ANNUAL SUSTAINABLE DOGHOUSE CHALLENGE



Student teams design and build a shelter for dogs, incorporating aspects of sustainability, structure, comfort, aesthetics and other categories. Students learn how to build sustainably and work together on teams.

On the cover and opposite page: *The Ferguson Structural Engineering Laboratory (FSEL) is a 45,000-square-foot facility where researchers study the response of structures under extreme loads. Graduate students in FSEL will benefit from the new Professional Partners Fellowship established by three Texas-based structural engineering firms.*



STRUCTURAL ENGINEERING FIRMS TEAM UP TO PROVIDE SUPPORT FOR GRADUATE STUDENTS

Three Texas-based structural engineering firms—Carrasquillo Associates, Pivot Engineers and Walter P Moore—have made significant gifts to the Cockrell School of Engineering to collectively establish the Professional Partners Fellowship, an endowment that will support graduate students in the Department of Civil, Architectural and Environmental Engineering (CAEE).



Left to right: Ramón Carrasquillo and Carlos Garza (Carrasquillo Associates), CAEE assistant professor Juan Murcia-Delso, Dirk Kestner (Walter P Moore), Michael Ahern (Pivot Engineers) and CAEE professor and director of the Ferguson Structural Engineering Laboratory, Michael Engelhardt.

This inaugural collaborative donation of \$90,000 will support one graduate research position for two years and fund innovative work at the school's Ferguson Structural Engineering Laboratory (FSEL) and the Laboratory of Infrastructure and Material Engineering — both of which are among the world's best research facilities dedicated to advancing concrete technology and improving the analysis, design and construction of the world's infrastructure. Through this gift, the firms will help graduate students acquire the skills they need to advance the construction and structural engineering profession.

"As partners with the university, it is our goal to complement the education and research experience of the university's graduate students with the knowledge we have acquired through the practice of our profession to meet the world's future needs," said Ramon L. Carrasquillo, P.E., president of Carrasquillo Associates.

The inaugural awardee will work with assistant professor Juan Murcia-Delso,

whose research on the assessment and rehabilitation of earthquake-affected reinforced concrete structures will have a direct impact on the professional practice of the three firms that have created this endowment.

"We are very excited to have consulting engineering firms investing in the future of our profession," said Bob Gilbert, chair of the CAEE department. "By providing a graduate student with the opportunity to collaborate on important research, these firms are both enhancing the student's educational experience and directly contributing to innovations that will have an enormous impact on society."

The firms look forward to providing off-campus mentorship opportunities of their own by welcoming the student to their offices to interact with young professionals, present research updates and get a real-world glimpse into potential future careers.

"Walter P Moore is excited to join Carrasquillo Associates and Pivot Engineers as inaugural partners in the Professional Partners Fellowship," said Dirk Kestner,

P.E., principal and director of sustainable design at Walter P Moore. "We look forward to collaborating with them, as well as the CAEE department, to shape and grow this unique fellowship program to benefit not only the recipient but our industry as a whole."

Most importantly, the firms hope their visionary investment will serve as a "seed fund" that inspires their peers and other organizations in the industry to make their own contributions and grow the endowment to an amount that will support more graduate students for many years to come.

"Pivot Engineers values research that benefits our industry, our relationship with the department and our collaborations with close colleagues, so the Professional Partners Fellowship is a great fit for our company," said Michael Ahern, P.E., principal at Pivot Engineers. "We are proud to be inaugural partners with Carrasquillo Associates and Walter P Moore, and we look forward to working with them, the graduate student recipient and UT to make this fellowship a success."

FACULTY ANNOUNCEMENTS

NEW FACULTY MEMBERS JOIN TEXAS CAEE

KRISHNA KUMAR joined the department as an assistant professor of geotechnical engineering in January 2019. Kumar was a research associate in computational geomechanics at the University of Cambridge, where he completed his Ph.D. in 2015. He earned his M.S. in civil engineering from the Indian Institute of Technology Madras in 2010 and his B.E. in civil engineering from Thiagarajar College of Engineering, Anna University, in 2008.

His technical interests include multi-scale modeling of soil fluidization and debris flows, and large-scale big data frameworks for modeling infrastructure systems. At UT, his team will study geophysical hazards and their impact on cities and the environment by developing advanced numerical techniques in a high-performance computing environment.

"In my teaching, I aim to incorporate advancements I research to expand students' knowledge and understanding of engineering concepts," he said. "I cherish the opportunity to share knowledge and to encourage others to think and appreciate the fundamental concepts in engineering from different perspectives."

MANISH KUMAR will join the department as an associate professor of environmental and water resources engineering this fall.

Kumar is currently an associate professor of chemical engineering, civil and environmental engineering, and biomedical engineering at Pennsylvania State University. He is also affiliated with the Penn State's Materials Research Institute, the Institute for Natural Gas Research and the Institutes of Energy and the Environment.

He received his B.S. in chemical engineering from the National Institute of Technology in Trichy, India, in 1998 and his M.S. in environmental engi-

neering from the University of Illinois Urbana-Champaign in 2000. In 2006, he returned to the University of Illinois to continue his graduate studies. His Ph.D. research resulted in one of the first reports on biomimetic membranes for desalination.

His technical interests include studying and mimicking biological processes and materials at the molecular scale to describe biological phenomena and then develop materials and processes that bring the exquisite specificity and functionality of biological molecules and processes to engineering scales. He is currently focused on cell membrane components — lipids and membrane proteins — and ways to mimic their function in synthetic systems and environmental engineering applications.

"I am particularly enthused by the department's strategic vision concerning the nexus of cities, water and energy due to my own work and passion to contribute to work at this nexus," Kumar said. "I look forward to contributing to the high performance, innovation-driven culture in Texas and at UT Austin."

PAWEL K. MISZTAL will join the Department of Civil, Architectural and Environmental Engineering at The University of Texas at Austin as an assistant professor in September 2019.

Misztal received his Ph.D. in Chemistry from the University of Edinburgh in 2010. He received his M.Sc. in Analytical Chemistry and B.Sc. in Chemistry and Physics from Maria Curie-Skłodowska University in Poland.

His technical interests are broad and include quantification of fluxes of volatile organic compounds (VOC) by eddy covariance at ecosystem (tower) and regional (aircraft) scales; understanding the fate, transformations and removal processes of gas-phase aerosol precursors to understand and quantify the role of VOCs for secondary organic aerosol formation; thinking holistically to understand the feedbacks between

anthropogenic pollution, biogenic VOCs (BVOCs), and atmospheric chemistry, and their links to climate, food security and health; and interdisciplinary research to quantify the links between atmospheric chemistry (indoors and outdoors), environmental microbiome, and human health.

Misztal says, "I am truly delighted to join the outstanding department of Civil, Architectural and Environmental Engineering at UT Austin and am looking forward with excitement to interdisciplinary collaborations with the colleagues in and outside of the department to make a better world for the local and global community."

BERKIN DORTDIVANLIOGLU will join the Department of Civil, Architectural and Environmental Engineering at The University of Texas at Austin as an assistant professor in January 2020.

Dortdivanlioglu recently completed his Ph.D. in Civil and Environmental Engineering at Stanford University where he also received his masters degree. He received his bachelor's degree in Civil Engineering from the Middle East Technical University in Turkey in 2013.

His technical interest includes investigating dynamic shape-shifting and functional changes in soft natural materials, elucidating the complete interplay between responsive and multi-physics material with their stimuli as well as discovering new deformation modes and leveraging surface energetics and topology optimization for soft robotics.

"It is a pleasure to join the esteemed department of Civil, Architectural and Environmental Engineering at UT Austin at such an exciting time." Said Dortdivanlioglu, "I eagerly look forward to starting a collaborative and interdisciplinary research program in the Mechanics, Uncertainty, and Simulation in Engineering group by integrating advanced experimental and computational techniques."

CAEE PROFESSORS, PIONEERS IN THEIR FIELDS, RETIRE

DAENE MCKINNEY

Environmental and Water Resources Engineering, W.A. (Bill) Cunningham Professorship in Engineering

Daene McKinney was honored and celebrated for his accomplishments and contributions made to the success of the department in May 2018. For 28 years, McKinney changed the lives of many colleagues, staff and students.

McKinney joined the department faculty in 1990 as an assistant professor and, over the course of his career, made many administrative contributions in addition to maintaining a stellar teaching record and robust research program.

He served on numerous university and Cockrell School of Engineering committees and served the department multiple times as associate chair, curriculum committee chair and accreditation steering committee chair. He had a deep commitment to making sure that our department thrives and improves. Not only has McKinney shared his technical skills with the CAEE community, he has also been a public servant by sharing his knowledge with organizations such as the U.S. Department of State, the National Science Foundation, USAID, the World Bank, World Water Council and more.

DAVID MAIDMENT

Hussein M. Alharthy Centennial Chair in Civil Engineering

In October 2018 David Maidment was honored for his 37 years of service to the Department of Civil, Architectural and Environmental Engineering.

Maidment is a specialist in surface water hydrology, specifically in the application of geographic information systems (GIS) to hydrology. He is an expert in statistical techniques in hydrology, water resources planning and water use forecasting.

In 2016, he was elected to the National Academy of Engineering. In addition, he was the 2015 recipient of the J. Mike Howard Lectureship of the Texas Floodplain Management Association and has been recognized as Geospatial Scientist of the Year by Geospatial Media. Maidment's work in the application of GIS to water resources engineering is so significant that in 2010 he received the American Water Resources

Association's Award for Water Resources Data and Information Systems, which was subsequently renamed the David R. Maidment Award for Water Resources Data and Information Systems by the organization.

FORMER CAEE CHAIR BECOMES DEAN OF PORTLAND STATE ENGINEERING

Indoor air quality expert Richard L. Corsi was named dean of Portland State University's Maseeh College of Engineering and Computer Science. He began his appointment in September 2018.

Corsi joined the Texas Engineering faculty nearly 25 years ago and served as chair of the Department of Civil, Architectural and Environmental Engineering from 2013 to 2017. Among his accomplishments as department chair, Corsi hired eight new faculty members, launched a new undergraduate degree program in environmental engineering and led the development of the department's strategic plan, which focuses on solving complex problems surrounding the nexus of cities, water and energy.

IN MEMORIUM

EARNEST F. GLOYNA

Professor Emeritus and former Texas Engineering Dean Earnest F. Gloyna died on January 9, 2019, at the age of 97, leaving behind a legacy at The University of Texas at Austin and in the Department of Civil, Architectural and Environmental Engineering, where he served as a faculty member for two decades before becoming dean, marked by exceptional leadership, vision and dedication to engineering education.

"Earnest made us a nationally and then an internationally acclaimed program," said Bob Gilbert chair of the CAEE department. "Then, he did the same thing for the College of Engineering and The University of Texas at Austin as a whole. I was fortunate to know him and to learn from him. We all are fortunate for everything he did in service to our university and our country."

Gloyna joined the civil engineering faculty as an assistant professor in 1949. His research focused on the evaluation and improvement of water quality, providing invaluable solutions to some of society's most complicated environmental issues regarding the management of water resources.

Gloyna played a key role in development of the department's programs, helping to establish the graduate program in environmental and water resources engineering by initiating new research programs and expanding the scope of the academic curriculum. He served as the director of the Environmental Health Engineering Laboratories from 1954 to 1970 and the director of the Center for Research in Water Resources from 1963 to 1973.

He was appointed dean of the College of Engineering in 1970 (the same year he was elected to the National Academy of Engineering) and served in this role until 1987. Gloyna's time as dean was marked by visionary leadership and the advancement of a more diverse and inclusive engineering student body. With a dream for UT's engineering school to serve as a model for the development of other engineering institutions in the United States, he spearheaded the building of Ernest Cockrell Jr. Hall, the Engineering Teaching Center and the Chemical and Petroleum Engineering building; dramatically expanded research initiatives; encouraged a focus on developing student leaders; and launched the school's Equal Opportunity in Engineering Program—an initiative that still thrives today—thus setting the precedent for engineering schools nationwide.

NORMAN K. WAGNER

Associate Professor Emeritus Norman K. Wagner died on January 27, 2019, at the age of 86. Regarded as an outstanding teacher and mentor, Wagner leaves a memorable mark for his kindness, generosity and impeccable dedication to The University of Texas at Austin and the Cockrell School of Engineering. Wagner joined UT as a researcher in the Electrical Engineering Research Center and a faculty member in the Atmospheric Sciences program within the Department of Civil Engineering for several years before pursuing his doctoral degree.

His research focused on wind distribution and associated momentum fluxes in the atmospheric boundary layer; the role of the atmosphere in estuarine dynamics; and the temporal and spatial variations in the wind field close to the earth's surface.

An expert in meteorology, he paved the way for advances in environmental engineering and a deeper understanding of the effects of urbanization on the environment.

THE LEGACY FUND

OPPORTUNITIES FOR STUDENTS TO WORK ALONGSIDE FACULTY

The Legacy Fund in the Department of Civil, Architectural and Environmental Engineering provides scholarships and fellowships for undergraduate and graduate students to work on research projects with faculty. With the Legacy Campaign, the department seeks to raise funding from alumni and friends to support these scholarships and fellowships.

LEGACY SCHOLARS

KELLY ADAMS, B.S. CE 2019

Motivated by the destruction that Hurricane Sandy brought to her home state of New York in October 2012, Kelly Adams is working with professor Blair Johnson to better understand the implication of global warming and its effects on water-based disasters such as hurricanes, floods and other natural disasters. As waters around the globe warm because of global warming, glaciers are starting to melt at a faster rate than before, making coastal cities susceptible to flooding, especially during storms. Adams is studying different ice-melting processes, both underwater and on the surface of glaciers with an objective of understanding how the heat generated by kinetic energy dissipation affects glaciers and ice in general. Being able to identify how different processes contribute to glacial melting would mean that we would be one step closer to better predicting and mitigating the effects that glacier melting has on our coasts.

YUAN CAI, B.S. AE HONORS 2019

Current green-building rating systems, such as LEED, only focus on reducing energy consumption rather than improving indoor air quality. Consequently, buildings are certified, but occupants receive inadequate natural light and ventilation, which further elevates carbon dioxide concentrations in buildings. Yuan Cai is interested in evaluating the advantages and disadvantages of current environmental control systems and seeks potential improvements in creating a healthy indoor space. She has worked with professor Atila Novoselac over the last year on characterizing ozone deposition velocity at the UTest House. Last summer, UTest House hosted an experiment called HO-MEChem (House Observations of Microbial and Environmental Chemistry), which incorporated 20 research groups from 13 universities to identify the most important aspects of the chemistry that controls the indoor environment. Cai is working to streamline the data collected from the experiment to ensure consistency and is responsible for processing data regarding the air exchange rates introduced by indoor/outdoor pressure difference.

RAY YU, B.S. CE HONORS 2019

Having always had a passion for structures, Ray Yu wants to pursue a career in the design of sustainable infrastructure to reduce construction waste and potentially improve building design. Yu will be conducting research under professor Patricia Clayton on the System Level Seismic Performance of Steel Gravity Framing to test the connections of gravity framing and its resistance to earthquakes. Yu will be completing the previous research database in order to improve preliminary design and aid in the prototype model, gaining insights and experience he plans to use in his future career. The results of this project will advance the retrofit design of older buildings by reducing costs and improve city infrastructure by reducing the amount of time and material needed to ensure older buildings can endure earthquake conditions.

LEGACY FELLOWS

BRUNO FONG-MARTINEZ, CE PH.D. CANDIDATE

Since his undergraduate years at Cornell University, Bruno Fong-Martinez has committed his professional experiences to furthering his expertise on concrete. Fong-Martinez's research, under the direction of professor Kevin Folliard, is focused in the area of concrete durability and deterioration that may be caused by environmental factors, incompatible mix materials or both. His project, "Chemical Solutions to Concrete Durability Problems," is sponsored by TxDOT and aims to provide economic solutions to concrete durability problems that can be established across the state. The project's overarching goal is to find alternative solutions to concrete durability-related issues that have previously been mitigated through the use of fly ash. While the benefits of fly ash are undisputed, changes in emission standards and the overall decline of the coal industry have created concerns for the longevity of fly ash use. Fong-Martinez plans to attend and present at professional conferences, as he has recently done at the ACI and ASTM conferences.

TERESA JARRIEL, EWRE PH.D. CANDIDATE

Teresa Jarriel has focused her research on addressing the issues surrounding dynamic

coastal river delta networks and the millions of people currently residing on them. She is specifically focused on the Ganges-Brahmaputra-Meghna Delta (GBMD) on the coast of Bangladesh and West Bengal India. This river delta is particularly important not only because it is home to more than 170 million people, but it also hosts the largest continuous mangrove forest in the world, contains important marine and fluvial navigation pathways and produces the majority of agricultural resources for the surrounding region. Jarriel's research goals are to extract the GBMD channel networks through time, analyze how the network is changing and compare changes in the channel network with changes in urban development, transportation networks, water and sediment flow volumes, etc. to potentially link changes in forcings to changes in network characteristics. She aims to create a methodology that will allow the monitoring of this network and predict how various forcings will affect those living on the delta. This methodology will serve as a valuable decision-making tool for policymaking in Bangladesh and encourage sustainability as they continue to develop.

HEEDONG GOH, CE PH.D. CANDIDATE

Heedong Goh's research focuses on the paradigm shift for mitigating the effects of strong seismic action. Instead of designing structures to resist the seismic action, Goh suggests that controlling or altering the propagation of seismic waves so that they bypass the structure may offer a more effective way of seismic protection. The research goal of this project is to design a barrier-like structure that would act as a seismic shield by refracting, reflecting or attenuating the incoming wave, thus protecting the target structure from seismic wave exposure. This barrier design would utilize metamaterials, which are engineered materials with an unusual dispersion relation, allowing control over the waves that travel through them. The outcomes of Goh's research could be implemented to protect not only an individual structure but also a larger area of the built environment, including entire cities, which is impossible to accomplish with conventional seismic designs.

FROM LONGHORN TO CONSTRUCTION INDUSTRY LEGEND



After receiving his B.S., M.S. and Ph.D. in civil engineering in rapid succession (between 1958 and 1963) from The University of Texas at Austin, Richard Tucker went on to have a prolific civil engineering career that recently garnered him two of the field's biggest lifetime achievement awards — the American Society of Civil Engineers' (ASCE) Henry L. Michel Award for Industry Advancement of Research and the Engineering News-Record (ENR) Texas & Louisiana Legacy Award.

For ASCE's 2019 Henry L. Michel Award for Industry Advancement of Research, an Outstanding Projects and Leaders Award, Tucker is recognized for his outstanding achievement and leadership in the field of engineering. The award is given to a visionary leader whose work has had an impact on research and innovation in design, construction and the environment. The award was presented to him at an awards gala in March.

Last March, Tucker was honored by ENR Texas & Louisiana with the fifth annual Legacy Award. This award recognizes industry veterans whose experience and contributions have greatly impacted the engineering profession and community. In choosing this year's recipients, ENR's editors weighed several criteria, including each nominee's history of innovation, outstanding career highlights and engagement within the industry and the surrounding community.

Over the course of his career, Tucker introduced real-world construction to the study of engineering and academic

research to real-world construction. In addition to revolutionizing the curriculum for the Department of Civil, Architectural and Environmental Engineering, Tucker founded the Cockrell School of Engineering's Construction Industry Institute, the country's leading construction research organization, and the National Academy of Construction, whose members create a nationwide network of industry expertise.

After completing his Ph.D. at UT Austin, Tucker began teaching engineering at the University of Arlington – now The University of Texas at Arlington. Eventually, he became associate dean of engineering and graduate affairs, establishing the university's first graduate and research engineering programs.

In 1976, Tucker returned to UT Austin as a professor of civil engineering and helped launch the school's construction engineering and project management graduate program. Since its inception, over 100 doctoral degrees and 900 master's degrees have been awarded.

When asked what his most memorable accomplishment has been, Tucker says, "I have had a large number of accomplishments in my career, but the one I'm most proud of is the success of the construction engineering and project management program in Texas CAEE."

In addition to teaching and other activities, Tucker involved himself in improving construction productivity measures, designing delay surveys, constructability issues, methods for evaluating design effectiveness and pre-project

planning.

Tucker also served as a consultant for Procter & Gamble, Monsanto and Texaco, where his efforts to elevate construction productivity were noticed. Consequently, research funding poured into the department and in 1983, he and others convinced the university to establish the Construction Industry Institute with a mission to advance quality, productivity and safety within the field of construction. Tucker served as director of the institute until 1998.

In 1999, recognizing how different fields contribute to capital projects and realizing the grit of his peers, Tucker founded the National Academy of Construction, which aims to honor distinguished leaders in construction but also serve as a resource for addressing critical issues facing the industry and nation. Tucker officially retired in 2003, although he remained the general secretary of the academy until 2015. In 2003, he was named the Joe C. Walter Jr. Chair Emeritus in the Cockrell School.

Among his many other contributions to the construction industry, he is a member of the National Academy of Engineering, the National Research Council, the American Society of Civil Engineers, the Associated General Contractors, the National Society of Professional Engineers and the American Association of Cost Engineers.

Tucker's legacy started at Texas CAEE. His contributions to society and to the field of construction engineering continue to inspire our students.



Class of 2018-19 in back row: Hong-Gun Park, Robert B. Daigh, David H. Sanders, David M. Stueckler, Karl Frank (Honoree Member), William M. (Billy) Camp III. Front row: John N. Furlong, Deb A. Niemeier, Thomas W. Schuessler, Richard B. Easley

ACADEMY OF DISTINGUISHED ALUMNI

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 and mentors to our students.

WILLIAM M. (BILLY) CAMP III, M.S. 1988

Billy Camp is a technical principal, vice president and chair of S&ME's Geotechnical Practice Council. He serves as senior engineer on many large, critical structures in the Southeastern United States and Latin America such as port facilities, nuclear sites, bridges and powerplants. He is also a prominent leader in deep foundation design and testing in the region and has been instrumental in growing his firm's site-testing capabilities.

Camp developed and advanced several of S&ME's geotechnical testing methods such as dynamic pile testing, cone penetration testing and seismic testing. His leadership in introducing new testing methods led to the growth of one of the largest in-situ testing fleets in the eastern U.S.

Camp serves on the Geo-Institute's (GI) Deep Foundations Committee, the PDCA Technical Committee, the DFI Ground Improvement Committee and the ASCE Standards Committee on the Seismic Design of Piers and Wharves.

ROBERT B. (BOB) DAIGH, B.S. 1977

Bob Daigh is an engineer, leader and big thinker. He has served the public through the Texas Department of Transportation (TxDOT) for over 20 years and is a major contributor to the Central Texas transportation infrastructure. Daigh has served TxDOT in many capacities and most notably served

simultaneously as the deputy director of the Turnpike Division and director of Turnpike Development with the principal focus of planning the design and environmental clearance for the \$3.2 billion Central Texas Turnpike project, which, at the time, was the largest highway project in the country.

Daigh has been a constant supporter and advocate of the department's transportation engineering program. Throughout his career, he has always understood the importance of investing in human capital and research necessary for the future requirements of a highway network. He has used his influence to channel agency research dollars to the transportation engineering program and the Cockrell School's Center for Transportation Research. This has helped fund countless graduate researchers and create the Network Modeling Center. In turn, our graduate students have provided industry with solutions to many previously unsolved network problems.

RICHARD B. EASLEY, B.S. 1992, M.S. 1994

Richard Easley has taken a leading role in the planning and deployment of Intelligent Transportation Systems (ITS) on a national scale. His advancement of ITS has benefited the traveling public, departments of transportation, toll authorities, the freight industry, law enforcement and travel information providers. Easley is a respected professional

who is advancing the transportation engineering industry. He helps his varied clients implement effective and sustainable solutions to transportation related challenges. As founder and president of E-Squared Consulting, he is currently growing his international reach and celebrating 20 successful years in business.

Easley has served on many committees for the Transportation Research Board (TRB), ITS America, the Institute of Transportation Engineers, the Commercial Vehicle Safety Alliance and more. He recently received a TRB Blue Ribbon Committee Award as Chair of the Intermodal Freight Transport Committee. He has also given technology presentations and workshops throughout the U.S., Asia and Europe. Easley has said that he feels very strongly that to whom much is given, much is expected. He also gives back through mission work in Central America, Haiti and Africa.

KARL H. FRANK, HONORARY MEMBER

University of California, Davis (B.S. CE 1966), Lehigh University (M.S. CE 1969, Ph.D. 1971) Karl Frank is a professor emeritus of UT Austin and has had an enormous impact on the structural engineering profession through his teaching and research at UT. He served as a faculty member for over 35 years and is recognized as an honorary member of the Academy of Distinguished Alumni for

making a profound impact on generations of students and for his significant research and administrative contributions that have enhanced the department. Outside of the university, his breadth and depth of knowledge in structural engineering has made him a world-renowned expert in the field.

Frank's research has brought international attention to the CAEE department, and he has received recognition and awards, including the ASCE Raymond C. Reese Research Prize, the ASCE James Croes Medal and the Lifetime Achievement Award from the American Institute of Steel Construction. He has a unique ability to fully understand the structural demands of a bridge and to identify problematic designs from either a fabrication or erection perspective while also being able to recommend improved details or fabrication techniques.

JOHN N. (JACK) FURLONG, B.S. 1974

Jack Furlong is recognized for his over 40 years in water resources engineering and construction management, and his proficiency and versatility on diverse projects and considerable professional society activities. He has distinguished himself professionally, shared his knowledge and donated countless hours to support engineering and civic organizations. He is the senior construction manager and water practice leader at Jacobs Engineering Group for North Texas, Oklahoma and Arkansas and has held many leadership positions within the ASCE.

Furlong has designed and inspected bridges, buildings, roadways and landfills, and he served as a resident engineer for a major tollway. He is also proud of his volunteer efforts for the Richardson Area Habitat for Humanity, where he has worked on over 20 houses in the Dallas area and led over 200 civil engineers to complete a greenhouse build which was the 100th Anniversary House for the ASCE Texas Section. As a practitioner, Furlong has spent decades helping to deliver solutions for a more connected, safe and sustainable world.

DEB A. NIEMEIER, B.S. 1982

For two decades, Deb Niemeier has focused on integrating models for estimating mobile source emissions with transportation modeling. She has developed groundbreaking tools to assess the multi-sector impact of major infrastructure projects. Her work has led to new ways of identifying spatial properties or mobile source emissions, new methods to develop vehicle emissions inventories and improved regulatory guidance, including better identification of vulnerable populations. A National Academy of Engi-

neering Member, Niemeier is a professor in the Department of Civil and Environmental Engineering at the University of California, Davis, where she has focused on teaching, research and administration for 20 years.

Niemeier's research on transportation-related air pollution has become its own field. In addition to teaching and research at UC Davis, she has served in administrative roles including chair of the department and associate vice chancellor for the university's Office of Research, and she has served as director of a variety of research centers.

HONG-GUN PARK, PH.D. 1994

Hong-Gun Park is a professor in the Department of Architecture and Architectural Engineering at Seoul National University in Korea. He is an award-winning international expert in earthquake design, reinforced concrete structures and composite structures. He is a member of the Korean Academy of Science and Technology and the National Academy of Engineering of Korea.

Park has developed technologies in the areas of shear design of beams, punching shear in slabs and steel plate shear walls. For his work, he received the 2012 Chester Paul Siess Award from the American Concrete Institute for a notable achievement in research that advances design applications.

Park is currently leading the revision and publication of the Korean Building Code for the structural division and is head of the Korean Building Code Center. His consultancy work includes the evaluation of the shear design of concrete mega column-steel belt truss connection for the Lotte World Tower and solutions for high-speed construction of high-rise buildings and semiconductor plants. This work has resulted in significant cost and time savings for various projects.

DAVID H. SANDERS, MS 1986, PH.D. 1990

David Sanders is recognized for excellence in teaching, research and community service. Throughout his career he has served as a leader among students and his professional colleagues and has achieved national prominence for his considerable contributions to concrete technology and advancements in the civil engineering profession. He is currently the Greenwood Department Chair in Civil, Construction and Environmental Engineering at Iowa State University, where his appointment began in July 2018.

Sanders previously held a university foundation professorship in the Department of Civil and Environmental Engineering at the University of Nevada, Reno, where he conducted landmark research in seismic evaluation, design, and strengthening and

repair of bridges, including large-scale component and systems experiments and analysis. Due in part to his contributions, the university's civil engineering department has built world-class experimental facilities for research in earthquake engineering.

He received the ACI Joe Kelly Award for bringing his prolific and innovative research into the classroom.

THOMAS W. SCHUESSLER, B.S. 1991

Thomas Schuessler has demonstrated exceptional technical, managerial and leadership qualities throughout his distinguished career with ExxonMobil. He has excelled in several challenging supervisory and managerial roles within the company and has held key positions throughout the world. A strong presence in the oil and gas industry, he is the current president of ExxonMobil's Upstream Research Company, charged with managing the material inputs needed for production and directing the work of over 650 researchers.

He serves on the UT Energy Institute's Advisory Board and has served on the department's External Advisory Committee. He also gives guest lectures and technical presentations and helped to create the new room that houses the UT ASCE Student Chapter in Ernest Cockrell Jr. Hall on campus.

Schuessler manages complex, multifaceted projects, invests in people and their skills, and cares about giving back to the community.

DAVID M. STUECKLER, B.S. 1982

Throughout his career, David Stueckler has been a builder, project manager, corporate executive and industry leader. He is president and CEO of Linbeck, a Texas-based, technology-driven building construction firm. Stueckler has been involved in some of the most iconic buildings constructed in the U.S., and he has enabled investment in applied technologies, including spatial coordination through building information modeling (BIM), laser scanning, digital document management, total robotic stations, extensive drone usage, 360-degree photography and the early stages of 3D printing. He is currently focused on automation in construction, primarily in using robotics to execute the mundane and most dangerous tasks.

Stueckler is deeply committed to workplace safety and has helped Linbeck attain one of the best workplace safety records in the building industry through a visionary program, Behavior Based Safety. He has also formalized and expanded the company's volunteerism through a community service program.

2018 OUTSTANDING YOUNG ALUMNUS

Established in 2003, this award recognizes a graduate of Texas CAEE under the age of 40 who has distinguished himself or herself with outstanding service and contributions to the engineering profession and society.



ANTHONY J. GONZALES

B.S. 2001, M.S. 2009

Anthony Gonzales is the founder and managing principal of Spire Consulting Group, an award-winning 40-person national construction engineering consulting firm specializing in project advisory and dispute resolution services. At Spire Consulting Group, Gonzales is a construction engineering expert with extensive experience in developing, monitoring and forensically analyzing effective construction processes and project controls systems for architectural, engineering and construction industry professionals. He is involved in a wide variety of professional services that include managing capital projects and programs for clients, serving as a consultant on project controls matters, providing expert testimony in industry disputes and lecturing to large national and international audiences. Gonzales has worked on more than 200 projects totaling more than \$30 billion in construction across 15 countries and 25 U.S. states.

He has been recognized with an ENR Top 20 Under 40 award and his company was named a Community Relations Winner at the Greater Austin Business Awards. He is also a highly regarded lecturer in the CAEE department's construction engineering and project management program, teaching graduate courses and lecturing on contracts, liability and ethics in undergraduate courses.

ACADEMY SCHOLARS

This spring, members of the Academy of Distinguished Alumni created the Academy Scholars program, an undergraduate research program to offer freshmen and sophomore students opportunities to engage in experiential learning.

EKIN UGUREL CIVIL ENGINEERING, HONORS

Growing up as a child of two highway design engineers has sparked Ekin Ugurel's interest in transportation engineering, specifically in public transit systems, corridor-planning and automated vehicle systems. Ugurel will be working with assistant professor Christian Claudel to analyze the energy and cost life-cycle for vertical take-off and landing pages of devices.

ABIGAIL SACKETT ENVIRONMENTAL ENGINEERING, HONORS

Having seen the impact of inefficient water systems in her hometown of Houston, Abigail Sackett's interest lies in management of water resources and storm water. Sackett will work with associate professor Navid Saleh on water treatment of ceramic spheres.

JACOB T. WRIGHT ENVIRONMENTAL ENGINEERING

Jacob Wright is interested in air and water quality, specifically in how designing buildings and cities plays into the stability and health of the surrounding environment. With assistant professor Zoltan Nagy, Wright will use air-quality sensors to investigate how air pollution from main corridors in Austin creeps into the UT campus. Results will provide more information about general pollution levels and their spatio-temporal distribution, as well as give insight to the buildings' HVAC operation and filters.

FRANCISCO GUERRERO CIVIL ENGINEERING

Fascinated by the juxtaposition of the city structures of his two hometowns: Durango, Mexico, and Dallas, Francisco Guerrero's interests lie in structural engineering, construction and project management engineering, and environmental and water resources engineering. Guerrero will work with associate professor Navid Saleh to design and test underwater turbines.

JUGAL AMODWALA CIVIL ENGINEERING

Jugal Amodwala's previous experience with the transportation division of Austin's Development Services Department has shaped Amodwala's interest in infrastructural materials research. Amodwala will work with professor Kara Kockelma on a project exploring energy and cost life-cycle analysis for vertical take-off and landing devices in Austin.

URIEL LOREDO CIVIL ENGINEERING

Uriel Loredo is pursuing a career in project management. He plans to return to his hometown of Dallas to add his "strand" to the spiderweb of the city. Loredo will work with professor Lance Manuel on a study related to sustainable development of infrastructure.

KEONHAK KIM CIVIL ENGINEERING

Inspired by his dad's work in architecture, Keonhak Kim decided to pursue a career in structural engineering, specifically in land development and design. Kim will work on a project with professor Spyros Kinnas on the design and testing of underwater turbines, where he will be involved in the 3D printing of blades and experiments in the flume.

CONNOR CHEWNING ENVIRONMENTAL ENGINEERING

Connor Chewning's observation of sustainable development inspired him to pursue designing and implementing sustainable and affordable water solutions for developing countries. Chewning will work with assistant professor Lina Sela on a project evaluating water and electricity consumption in the five types of buildings on campus, understanding the unique drivers of water and energy demands of residential and non-residential buildings.

JENNY QIN CIVIL ENGINEERING

Jenny Qin wants to use her experience with computer science to enhance her future career in either structural engineering or infrastructure materials engineering. Qin will work with the director of the Laboratory for Infrastructure Materials Engineering, associate professor Raissa Ferron, on infrastructure materials. Qin will learn about additively manufactured concrete and self-healing concrete.

LILY CROWDUS ARCHITECTURAL ENGINEERING

Lily Crowdus wants to apply her skills in architectural engineering and project management to research projects. She will work with associate professor Fernanda Leite and assistant professor Kasey Faust on their Green Fund Grant project, which will use 4D simulation to understand and determine potential avenues of reuse for the waste generated by campus construction projects.

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INDUSTRY OPEN HOUSE

This fall, the CAEE department will hold its 3rd annual Industry Open House to educate our undergraduate and graduate students on the many career paths within the fields of civil, architectural and environmental engineering. Practicing engineers from a variety of technical backgrounds will come to campus to share information about careers in consulting, construction, research, government, education and more inside the Cockrell School of Engineering's Engineering Education and Research Center.

If you and your organization are interested in participating, visit caee.utexas.edu/industry-open-house-co, or contact Jessica Serna at caee@austin.utexas.edu for details.

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