



MESSAGE FROM THE CHAIR



This fall, we were fortunate to return to campus for in-person learning overcoming COVID-19 challenges and resumed our work providing a cutting-edge education to our students. Little did we know that we were stepping into a great semester for UNM Civil, Construction, and Environmental Engineering. We began the semester with a \$15M research grant from the National Science Foundation to Professor Mark Stone, Director of UNM Resilience Institute,

leading a national research network on climate change in the US Intermountain West. We conclude the semester by opening our donor-funded Media Lab equipped with state-of-the-art technology for teaching future civil and construction engineers, and construction managers. The Lab will be a hub for an interactive engineering education for all our students, and is a landmark articulating our robust relationship with our generous alums. In between these two events, our construction management program received six years

of accreditation from ABET, several of our students made extraordinary successful strides, and our faculty embarked on new research frontiers and received national recognition. I am delighted with our strong return back and our remarkable growth and successes. We look forward to a great academic year.

Mahmoud Taha, Distinguished Professor and Chair

CCEE AND RESILIENCE INSTITUTE RESEARCH CLIMATE CHANGE

Led by Dr. Mark Stone, the CCEE Department and the UNM Resilience Institute will lead a new research network addressing the climate crisis including drought, climate change, and community well-being. The Intermountain West Transformation Network (IMW-TN) received \$15 million from the National Science Foundation's program on Sustainable Regional Systems. IMW-TN is composed of UNM and Colorado State University, the University of Arizona, Northern Arizona University, Washington State University, Utah State University, New Mexico Tech and New Mexico State. The network has also partnered with over 50 organizations across the American Intermountain West to elevate the network's capacity.



NEW MEDIA LAB OPENS IN CCEE



The CCEE Department opened a new donor-funded learning space on November 1. The Media Lab, on the third floor of the Centennial Engineering Center, is a modern, mixed-use space equipped with state-of-the-art technology that will be used for classes, presentations, meetings and as a student lounge/study area.

"This space represents a dream that came true," said Mahmoud Taha, Distinguished Professor and chair of CCEE. "It is a step forward and a huge boost for students' visual learning experience, especially in fields like BIM [building information modeling] and GIS [geographic information system]." The space features five large screens (75" and 85"), two large projectors, speakers and cameras. The podium controls all the screens, projectors, speakers and cameras for classes and presentations. The camera allows for classes and presentations to be recorded or live-streamed over Zoom, ideal for remote or mixed-mode

learning. The new space increases the student capacity from 20 to about 56 students. The space cost around \$400,000 and was 90 percent funded by a group of donors, which included the estate of Dana C. Wood. Taha announced that fundraising efforts will continue to cover 100 percent of the cost of the CCEE Media Lab.



NEW FACULTY MEMBER



UNM CCEE welcomes a new faculty member, Dr. Ziyu Jin, Lecturer II in the area of construction. Dr. Jin's research is focused on promoting occupational worker safety and health in construction, with the help of advanced technologies (e.g., Building Information Modeling (BIM), light detection and ranging (lidar), and sensor-based systems (computer vision). Her research

work focuses on four areas: temporary structures, construction technologies, prevention through design (PtD) and work zone safety. Dr. Jin's teaching interests include Statics, BIM, Construction Safety, and Design of Temporary Support Structures. She recently received her Ph.D. from the School of Civil and Construction Engineering at Oregon State University.

FUNDRAISING CAMPAIGN

The CCEE Department has launched a major fundraising campaign to upgrade its facilities and shape its roadmap toward 2030. We need your leadership gift for UNM CCEE! For details, please contact:

Dr. Mahmoud Taha, CCEE Department Chair
mrtaha@unm.edu 505-277-1258

Leslie Currie, SOE Senior Director of Development
leslie.currie@unmfund.org 505-277-0230

BS CONSTRUCTION MANAGEMENT PROGRAM RECEIVES ABET ACCREDITATION



Engineering
Accreditation
Commission

The BS construction management program has been accredited to 2027 by the Applied and Natural Science Accreditation Commission (ANSAC) of ABET. The accreditation decision was made during the ANSAC of ABET 2021 Summer Meeting after a year-long review process. The BS construction management program has been around since 1985 and enjoys

a close relationship with the local construction industry. There are currently 64 students in the construction management program and an average of 14 graduates per year. Prior to 2019, the construction management program was accredited through ACCE. Now, all of the undergraduate programs in the CCEE department are accredited through ABET.

PHD GRADUATE JOINS FACULTY AT UNIVERSITY OF OKLAHOMA



Shreya Vemuganti earned her Ph.D. from the Department of Civil, Construction and Environmental Engineering at UNM in the summer of 2021 under the supervision of Dr. Mahmoud Reda Taha. Her dissertation work was pioneering research in developing ductile and pseudo ductile mono-type Fiber Reinforced Polymer (FRP) Composites with a design-based alternative bond approach using 3D printing technology. She won the UNM School of Engineering Outstanding Graduate Student Award for 2021. Her work at UNM has been recognized internationally as journal covers and editor's choice award publications. She joined the School of Civil Engineering and Environmental Science at the University of Oklahoma as an Assistant Professor. Her research focus includes aging infrastructure solutions with innovative materials and methods, adaptable phononic crystals, Nano synthesized zero-carbon, and 3D printed sustainable materials. Through her research, mentoring, teaching and service, she is passionate about fostering a robust and inclusive scientific community.

TEAM RECEIVES DOE GRANT TO ENHANCE GEOTHERMAL SYSTEMS



A UNM team led by John Stormont, a professor in UNM's Department of Civil, Construction and Environmental Engineering, is receiving a \$2 million grant from the Department of Energy (DOE) to develop improvements to enhance geothermal systems (EGS). The UNM team includes Nick Carroll (UNM), Mahmoud Reda Taha (UNM), Pania Newell (University of Utah), and Stephen Bauer (Sandia National Laboratories). EGS involve injecting cold water into a fractured hot rock formation where the water picks up heat as it moves through the fractures. The heated water is then collected in another well, pumped to the surface and used to produce electricity. The problem that the UNM team is addressing is thermal short circuiting—this occurs when injected water flows through one or more relatively large fractures rather than through the entire fracture network. Thermal short circuiting dramatically reduces the efficiency and longevity of a geothermal reservoir. The DOE funding will be used to develop innovative materials that can be injected into rock fractures and improve the extraction of heat energy from the rock.

DR. KERRY HOWE RECEIVES PROMOTION AND AWARD

Dr. Kerry Howe has been promoted to the rank of Distinguished Professor. This title is the highest faculty title at UNM and only a handful of professors are honored with the rank each year. His promotion followed his selection for the 65th Annual Research Lecture last year, which is one of the highest honors the University bestows on a faculty member in recognition of their research/creative activity. Howe has been the director of the Center for Water and the Environment (CWE) since 2013, which has research expenditures in the range of \$3 million per year, including over \$10 million from the NSF Centers of Research Excellence in Science and Technology (CREST) program. In addition to the promotion, Dr. Howe was selected as the Water Quality Person of the Year, an award presented jointly by the American Water Works Association and American Membrane Technology Association at the annual Membrane Technology Conference. He received the award in recognition for his 30 years of experience in water treatment and dedication to academic research on a wider variety of water treatment processes. Howe received a bachelor's degree in Civil and Environmental Engineering from the University of Wisconsin-Madison in 1984, a master's in environmental health engineering from the University of Texas at Austin in 1986, and a Ph.D. in environmental engineering from the University of Illinois at Urbana-Champaign in 2001. With this rank, Professor Howe joins a remarkable group of less than 3% of UNM faculty who have been recognized with the title of Distinguished Professor.



STUDENT NEWS

Roya Nasimi PhD Candidate



Roya Nasimi is a Ph.D. candidate working under Dr. Fernando Moreu. Her multidisciplinary research focuses on Cyber Physical Systems

(CPS) for non-contact infrastructure monitoring which includes designing and developing computational methods integrated with physical systems such as Unmanned Aerial Vehicles (UAVs) and Unmanned Ground Vehicles (UGVs) for low-cost intelligent measurements of structures. She received a second place at the ASCE-EMI national student paper competition in 2020. After graduation, she will continue to do research and remain in academia.

Benson Long BSCE Candidate



A Navajo student invested in research and transportation studies, Benson Long, is a senior pursuing his B.S. in civil engineering.

Mentored by Dr. Nicholas Ferenchak, Dr. Jose Cerrato, and Dr. Cherie DeVore, Benson has published two research manuscripts and has formulated an understanding of engineering application within a societal context. His work as a CAD technician and as a student representative for the Institute of Transportation Engineers will enhance future graduate studies in research and help strengthen transportation concepts within academia and industry.

CCEE Facts at a Glance

Number of Faculty	18
Number of Undergrads	254
Number of Grad Students	92
Number of Adjuncts	6

Annual Research Expenditures
FY 2021
\$5.6 Million

Department Scholarships
\$76,000 Awarded Annually to
Undergrad and Graduate Students