UNM Civil Engineering Newsletter
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Message from the Chair

UNM Civil Engineering continues its success with one of our junior faculty, Dr. Greg Rowangould, receiving the EPA Early Career award for investigating strategies for smart growth with controlled air pollution. Several faculty members are integrating their efforts with colleagues from the UNM School of Engineering and other schools across campus and taking steps to launch the UNM Resilience Institute. Our undergraduate students earned fifth place in the national competition of the National Association of Home Builders (NAHB). Our graduate students are successfully participating in the UNM Business Plan competition and securing funds for new economic development to save fresh water in New Mexico.

Mahmoud Taha, Professor & Chair, mrtaha@unm.edu

Early Career Award from EPA for Dr. Rowangould

Dr. Gregory Rowangould received a prestigious Early Career Award from the EPA, a 3 year grant for $335,605. The project aims to understand how different combinations of land-use and transportation strategies affect exposure to toxic vehicle emissions. Land-use strategies such as “smart growth”, infill development, and denser urban development are being used to reduce passenger vehicle use and therefore greenhouse gas emissions. However, these same strategies can also have the unintended consequence of increasing the population’s exposure to toxic vehicle emissions. This project will identify situations that may result in unintended exposures and then develop strategies that maximize both greenhouse gas emission reductions and exposure to toxic vehicle emissions. An integrated land-use, transportation, vehicle emission and exposure modeling framework developed by the research team will be used to carry out the research using Albuquerque, NM and Atlanta, GA as case studies.

Lobo Builders Place 5th in 2016 National NAHB Competition

The department’s construction management Lobo Builders team competed in the 2016 Residential Construction Management Competition in Las Vegas, NV, in January through the National Association of Home Builders (NAHB) student chapter. The team competed with 34 four-year university programs. The Lobo Builders team placed fifth overall with its oral presentation and defense of the fall semester project submittal. The competition allows students to apply skills learned in the classroom to a real construction company by completing a management project/proposal .

Infrastructure Resilience Goes Global

In December 2015, Dr. Mahmoud Taha and Dr. Mark Stone traveled to the Suez Canal for a conference sponsored by the National Science Foundation (NSF) to talk about resilience. Dr. Stone presented a talk on ways to apply resilience theory to socio-ecological systems while Dr. Taha chaired the workshop and talked about methods to quantify infrastructure resilience.

Website: civil.unm.edu

Civil PhD Student Places Third in UNM Business Plan Competition

Jake Collison, PhD student in the Civil Engineering Department, and Rachael Stanton, class of 2011 Anderson Graduate School of Management, placed third in this year's UNM Business Plan Competition. Their business, Agua del Sol Consultants, focuses on the accurate measurement of evaporation from lakes and reservoirs using their patent-pending floating evaporation pan technology. The floating evaporation pan is the cornerstone of Jake's PhD dissertation. The $15,000 prize money will help complete the research and validation phase. Congratulations Jake and Rachel!

Upcoming Events:

- Water Summit
  May 20, 2016
  UNM Sub Ballrooms
- UNM Resilience Colloquium
  May 10, 2016
  UNM Sub Ballroom A
- 3rd Annual BIM Summit
  September 30, 2016
  Albuquerque, NM
- 54th Annual Paving & Transportation Conference
  January 2017
  Albuquerque, NM

UNM Center for Water and the Environment Visit White House for EPA New Initiative

EPA announced a new initiative, the Water Community Assistance for Resiliency and Excellence (WaterCARE), at a White House event in January 2016. Heather Himmelberger, Director of the Southwest Environmental Finance Center (EFC), a program of the Center for Water and Environment, was attended to meet with officials from each of the 10 communities selected as well as officials from EPA, including the Acting Deputy Director for the Agency. Heather and Jeff Hughes, the Director of the University of North Carolina EFC, will co-manage this project. WaterCARE will provide the 10 communities with pre-project assistance to build their sustainability and resilience and assist them in developing their infrastructure projects.

ASCE Student Chapter Competes Regionally

The ASCE student chapter participated in and successfully completed all the events at the Regional competition in Denver CO. The steel bridge team completed assembly in less than 30 minutes and the bridge was able to hold the 2500 pound maximum load. The canoe team overcame several adversities including being rammed by a rival team. The teams were led by Jeff Scott, Peter Creighton, Fabian Carbajal, Stephen Lujan and others. We wish to thank all the sponsors (Bohannan Huston, NMSPE, Aui Inc., SMA, HDR, APWA, AISC, Roadrunner Redi-mix, Smith Engineering, Duke City Redi-mix, WRGC), volunteers and team members.

Research Professor Publishes in Nature

Dr. Alek Zubelewicz received his Ph.D. in Applied Mechanics at the Warsaw University of Technology, Poland. His research and R&D experiences result from the work conducted at Polish Academy of Sciences, Northwestern University, IBM Corporation and Motorola. Alek retired from LANL in 2014 and is currently a Research Professor in our Civil Engineering department. He is also a Guest Scientist at LANL. Alek's research focuses on predicting the material's behavior and fracture. Alek was recently involved in research collaborations with Professors Taha and Stormont on fracture of rocks and cement-rock interfaces and their significance on fluid flow. Alek's paper published in March 30, 2016, in Nature Scientific Reports suggests a new mechanisms-based viscoplasticity approach for metals and alloys.

Want to learn how to best support the CE Department?

Your support is the key in our quest to attract and retain the best and brightest students and faculty. Call Betty Karlsson, Sr. Director of Development, 505-277-0230 or email Betty.Karlsson@unmfund.org. To donate online, https://www.unmfund.org/fund/civil-engineering/

Department & Student News

Featured Graduate Student

Umme Amina Mannan is pursuing a Ph.D. in Pavement Materials and Geotechnical Engineering after finishing her Master's degree from the University of Akron and is studying under Dr. Rafiqul Tarefder. Her research focuses on the fatigue damage and healing ability of asphalt binder and recycled asphalt materials. Currently, she is working on an NMDOT project titled,

"Mechanical and Rheological RAP Characterization of NMDOT Mixes". She was the first recipient of the Elvidio Diniz Scholarship in 2015 and the Asphalt Pavement Association of New Mexico Asphalt Industry Scholarship in 2016.

Students Receive Awards

Outstanding Graduate Student:
Su Zhang
Outstanding Senior:
James Fluke
Outstanding Junior:
Brittany Antonczak
Breece Award Nominee:
Daniel McFadden
Graduation Speaker Nominee:
Melissa Mills
NMSPE Outstanding Senior:
Daniel McFadden
Sigma-Xi Research Excellence:
Elisa Borowski

CE Facts at a Glance

Number of Faculty	21
Number of Undergrads	134
Number of Grad Students	115
Number of Adjuncts	10

Annual Research Expenditures
FY 2015-2016
$5.5 Million