



During these challenging times, I would like to share with you how our faculty and students in the department are coping with the COVID-19 crisis. As you all know, teaching and learning is now online. This decision has been made by LSU to protect the health of students, faculty, and staff. Our faculty and students have moved to this new educational platform successfully. It should be noted that, in 2019, the Civil and Environmental Engineering (CEE) Department initiated the online MS degree in civil engineering. Roughly half of its faculty prepared and taught courses in this new mode of instruction. This helped tremendously with the CEE faculty preparing for online courses during this period of remote learning.

I am listing some examples of headlines in this newsletter—Dr. Navid Jafari, LSU CEE Assistant Professor, Studies Disaster Reconnaissance Using Social Media, Drones; Dr. Brian Wolshon, LSU CEE Professor, Studies Effects of Coronavirus on Travel Patterns; Dr. George Z. Voyiadjis, LSU CEE Boyd Professor, Studies the Micromechanical Behavior of Additively Manufactured Inconel 718 Honeycombed Structure; The

President-Elect of the American Society of Civil Engineers, Dr. Clinton

Environmental Engineering, Has Been Named a Recipient of the 2019 Worley Professor of Excellence Award; Dr. Louay N. Mohammad, the Irma Louise Rush Stewart Endowed Professor, Received Emeritus Membership With the National Academies of Science, Engineering, and Medicine Transportation Research Record; and the several awards received by our students in the 30th WERC Design Competition.

As the spring semester progresses, I want to thank my colleagues for their Herculean efforts to shift everything online. Our seniors were able to graduate, even though the ceremony has been postponed. We should continue to practice social

that technology here. We need to figure out where the gaps are and use technology that is faster and more reliable.”

To further identify where the gaps are, Jafari asked Lam to join him to look at how often residents of Beaumont and Houston Tweeted about the state’s infrastructure. “Are they saying ‘levee breached’ or ‘bridge damaged’?” Jafari said. “We want to be able to see what they’re saying and what images or videos are posted and if we can extract any info that the EOCs can use. Most people have a smartphone and took photos of their neighborhoods during the 2016 flood and posted those pictures on social media saying, ‘Look how high the water is on my street.’ We want to be able to collect and use that information.”

To attain this pertinent information, Lam and a team of students are taking a look at 45 million Tweets that went out after Hurricane Harvey, along with ones from Hurricane Barry. “We’re focusing on infrastructure-related Tweets,” Lam said. “What are the words relating to this—‘damage,’ ‘no power,’ etc. Once you retrieve it, we still need a person to look at the context. It’s a lot of work.” Jafari said Tweets are more real-time than what one would get from a stream water-level gauge that is miles away. Gathering information quickly is important because people will change the natural environment and rebuild as soon as they can. “In an emergency, the DOTD (Department of Transportation and Development), DEQ (Department of Environmental Quality), CPRA (Coastal Protection Restoration Authority), 2lfs they caTmirmation.ectOOHO.”

Trenton graduated from LSU with a bachelor's in civil engineering and a minor in Spanish last December and now looks to start building his own legacy as a structural engineer with Quality Engineering and Surveying in Port Vincent, Louisiana. As part of his role there, he will travel to Puerto Rico to help rebuild cities destroyed by the last two major hurricanes, serving as a translator for his company and helping analyze the condition of existing water management structures to determine which areas need improvement. He will then design plans to address the subsequent issues.

But first, Trenton will have time to enjoy the fruits of his labor at LSU. "I am honored to graduate from LSU in civil engineering," Trenton said. "I am proud to have studied alongside so many determined and brilliant engineers. But most importantly, I take pride in my family name and hope to contribute just a fraction of [what] my grandmother made to the civil engineering industry. For her part, Miller takes equal pride in the achievements of her grandson. "I'm proud of him," said Miller. "He's a smart boy."

A number of metrics are being examined by experts to determine how successful, or unsuccessful, the nation's response to the coronavirus pandemic has been thus far.

For LSU Civil and Environmental Engineering Professor Brian Wolshon, that metric is traffic. Specifically, Wolshon and a group of fellow researchers are studying the impact of social distancing directives on human travel behavior, using highway volume data as a representation of personal activity and interaction. The research involves a comparison of roadway travel statistics throughout the state of Florida in March 2019 versus March 2020 to identify and track differences between rural and urban

during Hurricane Irma for a separate project, so we already knew how to collate, process, and organize the data from the (FDOT) files based on that project,” Wolshon said. “Effectively, we were doing the same thing but in the opposite direction. We were looking at traffic going down instead of going up like it does in evacuations.”

Next steps for Wolshon and the group are to analyze the “positive” aspects of the data in terms of reduced congestion and delay, especially as they relate to helping move freight and supplies, reduce fuel consumption and exhaust emissions, and increase safety and travel time reliability. They will also study other modes of transportation like regional rail, airlines, etc.

30TH WERC DESIGN COMPETITION GOES VIRTUAL

LSU Environmental Engineering students have competed in the WERC Environmental Design Competition at New Mexico State University since 1996. When the 30th WERC Design Competition went “virtual” this year, LSU Environmental Engineering teams had to immediately alter their teamwork strategies, moving from face-to-face group work in a laboratory to remote work scattered across the United States. The virtual format consisted of written reports as usual, oral presentations to engineering practitioner judges via Zoom, and bench-scale presentations consisting of in-depth conversations with smaller groups of judges over a two-hour period. The LSU team had another great year, winning three Task Awards and a Judge’s Choice Award.

Students won tasks submitted by Freeport-McMoran for an algae-based remediation system (phycoremediation) for acid-mine drainage and a task submitted by Los Alamos National Laboratory for a water treatment system that recovered valuable materials. Lang (en-US)/MCID 442 BDC BT-0.003 Tc -56

LSU AND LTRC RESEARCHERS LED BY

Four of the project teams worked on stormwater designs for specific sites along the Plank Road corridor as part of the Plank Road Master Plan developed by Build Baton Rouge. Site development and stormwater management concepts were developed by Nick Serrano's LSU landscape architecture urban design studio with input from Traci Birch's architecture community design studio. The concepts were turned into designs, developed with assistance from HNTB and LADOTD, and included bioswales, rain gardens, reduction in pervious cover, detention ponds, and Bus Rapid Transit stops.

"[It's] great work that adds to our knowledge base," said Build Baton Rouge President and CEO Christopher Tyson. "As various projects move forward, including the Bus Rapid Transit and associated environmental reviews, it's good to have these ideas at the forefront so that we can advocate for them early." Two of the project teams worked on stormwater mitigation projects for the City of Baker. After meetings with the LSU Coastal Sustainability Studio (CSS) and Baker officials, the teams selected two projects to work on—improving drainage in the Baker Estates subdivision and implementing green infrastructure along Groom Road. Alternatives for these projects included rain gardens, channel improvements, bioswales, and detention ponds. The teams made site visits and worked with HNTB and the CSS to develop strategies for these sites.

"Thank you for the presentations; they were very informative, professional, and well-crafted. We appreciate the time and

