LSU

Department of Civil & Environmental Engineering

CEE IN FOCUS

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FROM THE DEPARTMENT CHAIR

The LSU Department of Civil and Environmental Engineering (CEE) Timoshenko Mechanics Lecture Series and Recent Funded Projects in CEE.

On October 11, LSU CEE hosted a distinguished seminar in the Timoshenko Mechanics Lecture Series featuring Professor Ahsan Kareem of the University of Notre Dame. In his presentation, Exploring the Influence of Turbulence, Noise, Damping, and Correlation in Taming Dynamic Systems: A Harmonic Oscillator Perspective, Professor Kareem discussed the critical role of turbulence, damping, noise, and system correlations in managing the dynamics of mechanical, electrical, aerodynamic, and hydrodynamic systems. His world-class insights, based on extensive research into the effects of natural hazards on civil engineering structures, were shared with graduate students and faculty, enriching their understanding of dynamic system management in engineering applications. Professor Kareem, a renowned expert and member of several prestigious engineering academies, has earned numerous honors for his contributions to the field, including the National Academy of Engineers in USA, the ASCE James Croes Medal, and the ASCE Nathan M. Newmark Medal.

In addition to the lecture, this newsletter highlights several recently funded projects within LSU's CEE department. Notably, Dr. Chao Sun and his research team received a grant to develop resilient offshore wind technologies tailored for the Gulf of Mexico, which faces significant hurricane risks. The nearly $500,000 award will support the creation of computational tools for the resilient design of offshore wind turbines, contributing to the state's clean energy future.

Another CEE research team highlight is the "Instrumented Settlement Plates Enhancement for Marsh Creation Monitoring" project led by Drs. Navid Jafari and Celalettin Ozdemir. With $348,810 in funding, this project aims to improve monitoring techniques for marsh creation projects, crucial for Louisiana's coastal protection against sea-level rise and flooding.

The department is also spearheading the "Resilience and Equity in Smart Community-Utility Energy Planning (RESCUE)" project, which addresses energy resilience in disaster-prone areas, particularly focusing on New Orleans. CEE faculty Dr. Celalettin Emre Ozdemir is collaborating with LSU Electrical Engineering faculty members Dr. Amin Kargarian and Dr. Mehdi Farasat on a project led by Dr. Kargarian. This $478,092 initiative aims to improve equitable energy distribution and resilience, particularly for vulnerable populations.
CEE faculty are also contributing to cutting-edge research in sustainable construction, with Dr. Hai "Thomas" Lin's NSF CAREER Award-winning project exploring the use of natural materials like mud dauber nests and fungal mycelia for 3D-printed, eco-friendly building solutions.

A newly awarded grant brings together researchers from CEE, including Dr. Muriel Bruckner, and the University of Texas at Austin to work on strengthening deltaic vegetation resilience and optimizing sediment transport in Louisiana's coastal areas. This project is funded by Louisiana's Coastal Protection and Restoration Authority (CPRA) and addresses some of the most pressing challenges faced by the region's deltaic ecosystems.

The Louisiana Department of Transportation and Development (DOTD) has secured a significant grant of nearly $32 million from the Federal Highway Administration (FHWA) through cooperation between DOTD staff and LSU CEE faculty at the Louisiana Transportation Research Center (LTRC).

All of these diverse and impactful projects reflect LSU's continued leadership in civil and environmental engineering, addressing global challenges such as energy resilience, sustainable infrastructure, and coastal protection.
Lastly, I would like to note that Professor Louay Mohammad was honored with the ASCE Lifetime Achievement Award, recognizing his contributions to infrastructure, sustainability, and mentorship within civil engineering.

Dr. George Z. Voyiadjis, D.Eng.Sc.,
Boyd Professor
Chair and Bingham C. Stewart
Distinguished Professor of Engineering

DEPARTMENT NEWS

TIMOSHENKO MECHANICS LECTURE SERIES IN THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

On Oct. 11, Professor Ahsan Kareem visited the LSU Department of Civil and Environmental Engineering and gave a Timoshenko Mechanics Lecture Series seminar titled, Exploring the Influence of Turbulence, Noise, Damping, and Correlation in Taming Dynamic Systems: A Harmonic Oscillator Perspective. The seminar was focused on exploring the influence of turbulence, damping, noise, and correlation in taming the dynamics of systems of mechanical, electrical, aerodynamic, hydrodynamic, and other origins. Professor Kareem delivered a world-class presentation and shared his insightful thoughts on the influence of turbulence, damping, and noise on civil engineering structures and systems with the CEE graduate students and faculty.

Professor Kareem is the Robert M. Moran Professor of Engineering in the Department of Civil & Environmental Engineering and Earth Sciences (CEEES) at the University of Notre Dame. He is the director of the Nathaz Modeling Laboratory. He also served as president of the American Association of Wind Engineering (AAWE) and International Association of Wind Engineering (IAWE). The focus of his work is on quantifying load effects caused by various natural hazards on structures and developing innovative strategies to manage and mitigate their effects. He is a member of the US National Academy of Engineering, Chinese Academy of Engineering, the Engineering Academy of Japan, and Indian National Academy of Engineering. He received numerous medals and prizes, awards, and honors, including the ASCE James Croes Medal, Nathan M. Newmark Medal, Earnest Howard Medal, Masanobu Shinozuka Medal, James Croes Medal, Theodore von Kármán Medal, Robert H. Scanlan Medal, Jack E. Cermak Medal, International Association for Wind Engineering A. G. Davenport Medal, Presidential Young Investigator Award, ASCE Civil Engineering State-of-the-Art Award, Distinguished Member of ASCE, Honorary Member of the Japan Association for Wind Engineering, Distinguished Research Award of International Association of Structural Safety and Reliability, Alfred Nobel Prize, The International Award of Merit in Structural Engineering, and American Association for the Advancement of Science (AAAS) lifetime fellow.

RECENTLY FUNDED PROJECTS IN THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

1. LSU Institute for Energy Innovation Award on Offshore Wind Development in Gulf of Mexic

The Gulf of Mexico region has enormous wind resources. Clean offshore wind energy can power hundreds of thousands of homes in the coastal regions of Louisiana. While offshore wind development is growing rapidly in the gulf, frequent and severe hurricanes are a major challenge. Dr. Chao Sun, an associate professor in the LSU Department of Civil and Environmental Engineering, is the principal investigator on a grant titled, Developing Hurricane Resilient Offshore Wind Technology for Gulf of Mexico Considering Climate Change, from the LSU Institute for Energy Innovation. The research team consists of co-PI Dr. Paul Miller from the LSU Department of Oceanography and Coastal Sciences and co-PI Dr. Celalettin Ozdemir from the LSU Department of Civil and Environmental Engineering. With the support of this nearly half million-dollar ($498,188) award, the research team will develop computational tools and essential datasets for the resilient design, planning, and operation of offshore wind turbines and farms in the Gulf of Mexico facing extreme tropical cyclones.

Currently, the first offshore wind farm in the Gulf of Mexico is under development on the Louisiana coast. Yet the metocean datasets for wind energy areas in the gulf and relevant modeling tools are lacking. This award will fill these gaps and greatly enhance the research and development capabilities of LSU and the State of Louisiana in offshore wind. Research outcomes will enable resilient and cost-effective offshore wind-facing extreme marine conditions and climate change in Louisiana, the Gulf of Mexico, and across the nation. Graduate and undergraduate students, especially those from underserved communities, will be engaged in the research. Also, the research team will offer seminars/webinars to industry collaborators, coastal community managers, and governmental officials to accelerate the clean energy transition in Louisiana.

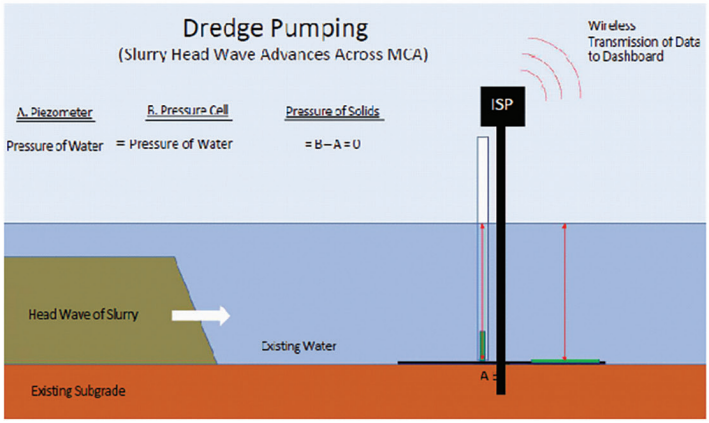
2. Project Highlight: Instrumented Settlement Plates Enhancement for Marsh Creation Monitoring

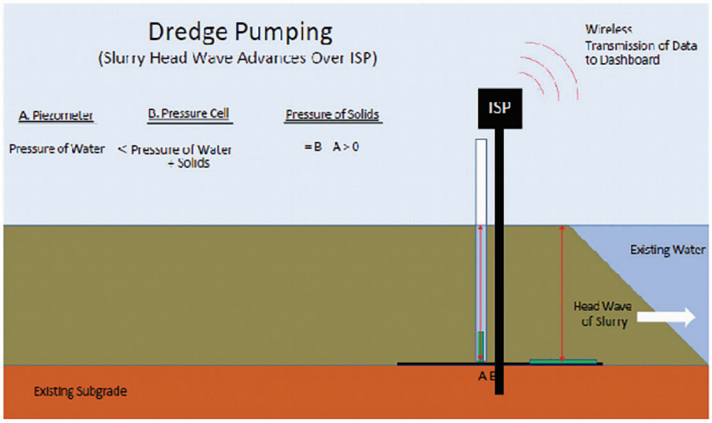
CEE faculty Dr. Navid Jafari and Dr. Celalettin Emre Ozdemir have been awarded $348,810 by RESTORE Act Center of Excellence for Louisiana to lead a project titled, Instrumented Settlement Plates Enhancement for Marsh Creation Monitoring. Spanning from October 2024 to September 2026, this project focuses on advancing technology to monitor and ensure the long-term effectiveness of marsh creation projects in Louisiana.

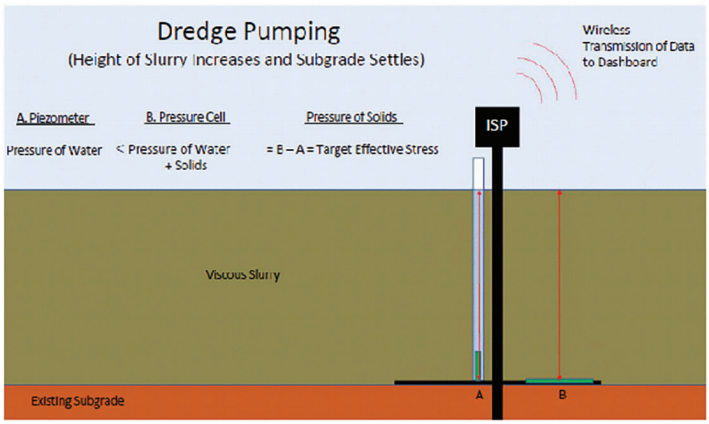
Louisiana's wetlands play a crucial role in providing flood protection, supporting ecological functions, and capturing sediment to keep pace with sea-level rise. Given the significant wetland loss since 1930, the state's Coastal Master Plan prioritizes marsh creation projects to sustain and restore these valuable ecosystems. A key component in these projects is achieving and maintaining target elevations in marshlands, which stabilize as sediment settles and compress over time.

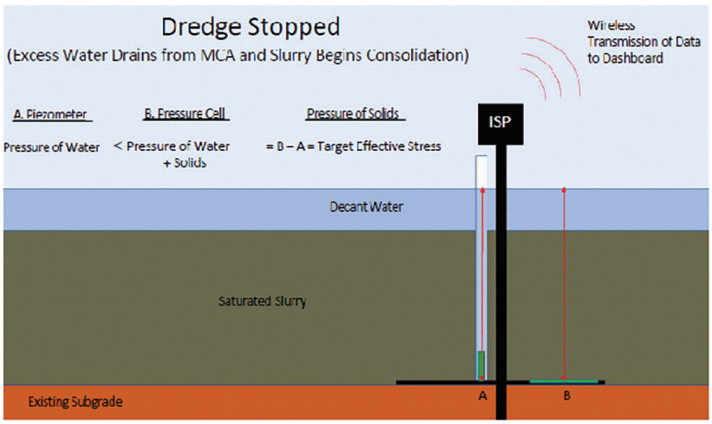
Instrumented settlement plates (ISPs) are currently used in post-construction surveys to measure ground and water pressure at the sediment bottom layer. However, these tools lack the capability to track pressure variations from the mudline (the top layer of mud) down to the bottom, which is essential for accurately monitoring soil settlement and compression. The primary challenge lies in precisely identifying where the mudline begins—a critical factor in tracking soil thickness and achieving reliable elevation targets.

This project aims to develop a novel sensor system to accurately track the mudline, enhancing the capability to monitor soil thickness as it consolidates under its own weight. The research will include laboratory experiments, field demonstrations, and ISP data analysis from completed marsh projects to evaluate the current technology's effectiveness. A custom software solution will accompany the new sensors, providing real-time data processing and visualization.
With this innovative approach, Drs. Jafari and Ozdemir aim to contribute essential advancements to marsh creation monitoring, supporting resilient and sustainable coastal ecosystems in Louisiana.

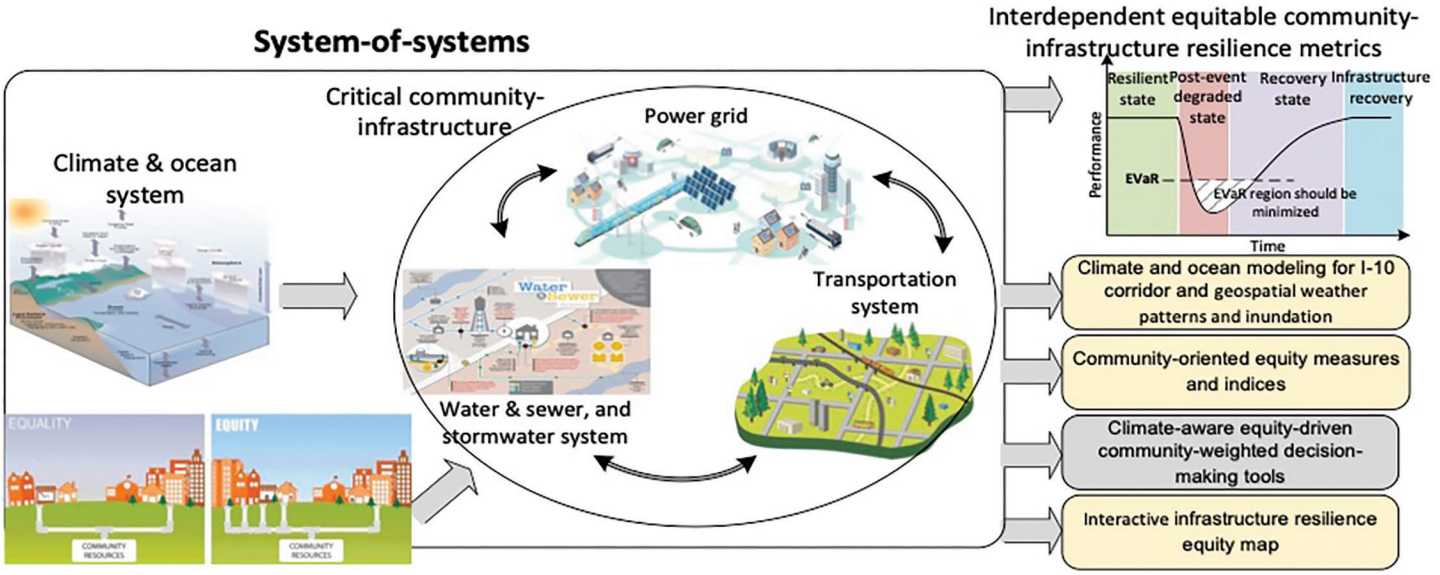








3. Project Highlight: Resilience and Equity in Smart Community-Utility Energy Planning (RESCUE)



CEE faculty Dr. Celalettin Emre Ozdemir is collaborating with LSU Electrical Engineering faculty members Dr. Amin Kargarian and Dr. Mehdi Farasat on a project led by Dr. Kargarian. Titled, Resilience and Equity in Smart Community-Utility Energy Planning (RESCUE), this $478,092 project is funded by the LSU Institute for Energy Innovation. Running from October 2024 to September 2026, the project addresses the critical need for equitable energy resilience in New Orleans, with potential applications across Louisiana and beyond.

The RESCUE project focuses on developing advanced resilience planning and energy management strategies tailored to the unique challenges of disaster-prone areas. Its goal is not only to ensure that energy resources are distributed fairly, especially to vulnerable populations, but also to create systems that withstand emergency conditions effectively. Central to this initiative is the creation of utility-community coordinated planning approaches that consider factors such as customer needs, demography, vulnerability, and socioeconomic status to assign essential power consumption equitably.

This project includes hierarchical planning that spans from individual households to entire neighborhoods, with proactive measures to protect critical infrastructure like substations before disasters occur. Post-disaster, a control hardware system will manage energy usage across neighborhoods and individual homes and will be supported by a central controller capable of connecting or disconnecting devices and managing energy provider connections as needed.

A key component of the RESCUE project is the development of an advanced energy management algorithm designed to enhance energy justice. This algorithm will use a robust communication network and prioritize power allocation based on customer tiers, addressing the unequal energy burdens often faced by low-income and disadvantaged communities. Testing on synthetic systems and a detailed simulation of a New Orleans distribution grid segment—including residential homes, community photovoltaic systems, and storage units—will validate these approaches.

By combining rigorous planning, testing, and real-world application, the RESCUE project aims to establish a scalable, equitable model of energy resilience. This model has the potential to serve as a benchmark for other regions, paving the way for more inclusive and just energy resilience practices across disaster-prone areas.

4. Strengthening Deltaic Vegetation Resilience and Optimizing Sediment Transport in Louisiana's Coastal Areas

A newly awarded grant to Dr. Muriel Bruckner brings together researchers from CEE and the University of Texas at Austin to work on strengthening deltaic vegetation resilience and optimizing sediment transport in Louisiana's coastal areas. This project, funded by Louisiana's Coastal Protection and Restoration Authority (CPRA), seeks to address some of the most pressing challenges faced by the region's deltaic ecosystems and will focus on creating an advanced model that enhances predictions for vegetation establishment and habitat stability in response to varying hydrodynamic conditions.

The project will leverage a detailed hydrodynamic-ecological modeling approach with a unique subgrid approach to assess vegetation establishment and expansion in one of Louisiana's river deltas. Using the coupled eco-hydrological model and available data, the team will assess the influence of vegetation on inundation times, flow dynamics, and habitat stability and provide insights into how different vegetation species alter deltaic flooding. Additionally, the model will track sediment transport pathways and assess the impact of vegetation on channel-island connectivity and sediment retention. By simulating these fine-scale feedbacks, the team aims to provide actionable insights for Louisiana's Coastal Master Plan, improving strategies to sustain Louisiana's vulnerable coastal ecosystems in the face of environmental changes.

Vegetation colonization and expansion in Wax Lake Delta (from Landsat imagery).

5. DOTD Awarded Low-Carbon Transportation Materials Grant From FHWA

The Louisiana Department of Transportation and Development (DOTD) has secured a significant grant of nearly $32 million from the Federal Highway Administration (FHWA) through cooperation between DOTD staff and Louisiana State University (LSU) Department of Civil and Environmental Engineering faculty at the Louisiana Transportation Research Center (LTRC). Awarded as a part of FHWA's Low-Carbon Transportation Materials (LCTM) program, this grant was prepared and submitted by the Materials Research staff at the Louisiana Transportation Research Center (LTRC). LSU Professor Louay Mohammad and DOTD Materials Research Administrator Samuel Cooper III prepared the grant proposal.

The LCTM grants program, established by the Inflation Reduction Act (IRA), focuses on advancing the use of low-carbon transportation materials in construction projects across Louisiana to promote performance and sustainability while reducing greenhouse gas emissions in the transportation sector. The objectives of the grant proposal are to:

- Increase the use of lower carbon transportation materials in construction projects;
- Facilitate the use of LCTMs while ensuring meeting DOTD engineering specifications and performance for use in projects;
- Construct field test sections that incorporate LCTMs and monitor their long-term engineering performance and quantification of GHG emissions;
- Promote technology transfer and enhancing workforce development to increase the adoption of environmental quantification techniques used in decision-making by DOTD staff and industrial partners; and
- Encourage DOTD and industrial partners to establish initiatives for the use of LCTMs in their construction projects. This will result in LCTMs identification frameworks that eventually may be replicated by non-state agencies eligible to apply for LCTM funding.

This effort aligns with federal goals to mitigate the environmental impact of ongoing infrastructure development nationwide. Funds will be distributed over a seven-year period, concluding on September 30, 2031.

The LTRC team is led by Dr. Samuel Cooper III and Dr. Samuel Cooper Jr. (grantee) of the DOTD, Dr. Louay Mohammad of the Department of Civil and Environmental Engineering at LSU, and industry partners. DOTD staff include Drs. Samuel Cooper III, Moses Akentuna, Zhen Liu, and Samuel Cooper Jr. (grantee). LSU faculty and staff include Drs. Louay Mohammed, Samuel Cooper III, Ibrahim Elnaml, and Samuel Cooper Jr. (grantee). Industry partners include Drs. Heather Dylla and Gaylon Baumgardner. Their combined expertise and years of experience will guide the development and implementation of innovative, sustainable construction practices. This project represents a significant step forward in the integration of environmentally responsible materials into the growing transportation infrastructure across Louisiana and the nation.

LTRC is a cooperative research and technology transfer endeavor administered jointly by DOTD, LSU, and six other Louisiana universities. This effort is a tremendous example of LTRC's unique ability to facilitate high-impact collaboration between DOTD and LSU.

6. Lin Receives NSF CAREER Award

Studying Application of Mud Dauber Nests and Fungal Mycelia to Future Homebuilding Techniques

Where some people see an eyesore that needs to be destroyed, LSU Civil and Environmental Engineering Professor Hai "Thomas" Lin sees inspiration for the future.

Lin's latest research project, funded by a nearly $630,000 National Science Foundation CAREER Award, is taking characteristics from mud dauber nests and the root systems of fungi to design 3D-printed soil for sustainable, durable, and cost-effective earthen buildings. More than three billion people around the world live in earthen buildings, which are gaining popularity in Europe, Western Australia, Canada, and California because of their eco-friendly and cost-effective credentials.

"Mud daubers are expert soil nest builders," Lin said. "Mud daubers carefully select the best type of soil for their nests, manage the moisture content of the soil to make it easier to work with, tap the soil repeatedly with their front legs and jaws to compact and make it stronger, and use the natural drying power of the air to harden the soil. Their nest shape is in clusters of tube-like cells, which make the nests light but strong, stable, and insulated.

"These techniques can inspire modern earthen building construction using 3D soil printing. By applying similar principles—controlling soil and moisture content, compacting the soil with vibrations, utilizing natural drying processes, and designing cellular structures—we can significantly enhance the strength, stability, and efficiency of earthen buildings."
So, how does 3D soil printing work?

The process begins by mixing soil with fungal spores and natural fibers, creating a soil-fungal mixture for optimal plasticity; printing and compacting the soil simultaneously; and allowing the fungal root structure to grow, reinforce, and waterproof the structure. Finally, the mixture dries, which further enhances the strength of the earthen walls.

"To increase efficiency, the method incorporates modular construction," Lin said. "This means that tubular elements, inspired by mud dauber nests, are printed in a controlled environment and then assembled on-site to build the final structure. This approach not only enhances the durability and sustainability of earthen buildings but also speeds up construction and reduces waste. By combining nature's wisdom with cutting-edge technology, this method offers a smart, eco-friendly way to construct the homes of the future."
Lin acknowledges that the idea of living in an earthen building might evoke mental images of primitive or uncomfortable structures, but he's quick to add that the type of structures he's proposing are anything but.

"Earthen buildings today can be as sophisticated and stylish as any contemporary structure, with the added advantage of natural insulation, excellent indoor air quality, remarkably small embodied energy, and a significantly reduced environmental impact," Lin said. "Far from living in a 'mud dauber's nest,' you'd be living in a modern, eco-friendly home that's designed with sustainability, comfort, and durability in mind. Essentially a home that's built for the future, not the past."
While the outcomes of this project could have a major impact on the future of housing and home building, the funding source behind it—the NSF CAREER Award—is sure to have a similar impact on the future of Lin's academic career and is a reflection of his past work and achievements.

"I'm extremely happy and grateful to receives this NSF CAREER Award," Lin said. "This recognition marks a significant milestone in my career and provides a solid foundation for the next 5-10 years of my research and teaching endeavors. With this support, my research team and I can continue pursuing my long-term goal of advancing sustainable, durable, and cost-effective earthen buildings through innovative bio-mediated and bio-inspired processes. This award not only validates our efforts but also energizes us to push the boundaries of what's possible in sustainable construction."

7. LSU Civil and Environmental Engineering Professor Bivins, Team Researching Faster Wetland Restoration Methods

It's not news that Louisiana wetlands are disappearing at an astounding rate—nearly 30 square miles annually, per the U.S. Geological Survey. With every acre lost of the three million acres that make up the state's wetland ecosystem, also lost are species and habitats that are unique to the state and provide protection from hurricanes and flooding.

Thanks to a Phase 1 $25,000 LSU Big Idea Research Grant from the Provost's Fund, LSU Civil and Environmental Engineering Assistant Professor Aaron Bivins is leading a team that includes LSU Oceanography & Coastal Sciences Associate Professors Matthew Hiatt, Giulio Mariotti, and Tracy Quirk in coming up with efficient and faster ways of growing vegetation and bringing in sediment to keep wetlands in place using microorganisms.

"The Mississippi River is one of the most engineered rivers in the world," Bivins said. "In order to provide flood protection, we've built all of these levees, which is great for not flooding our cities. But the downside of that is all the sediment that used to come down the river during flood events would be deposited in the delta, and that's what built the land over time. The river delta is fed by all that sediment that comes downstream. Now that we've built all the levees, we've disconnected the river delta from its sediment source, the river itself."

Bivins says land-building projects involve getting the sediment back into the deltas.

"There are diversions, which are large-scale, and then you have wetland creation or restoration on an individual case-by-case basis," he said. "What's currently being done is putting the fill material in, bringing the sediment in, and letting nature run its course. All of these natural processes that have sustained the delta for years are great, but they're a bit slow. It takes time."

Bivins says there's a natural succession of ecosystems that includes microorganisms, sediment/soil, plants, and water where vegetation ultimately grows and helps hold the sediment in place, with the sediment eventually becoming soil with organic content, which creates new land.

"The idea in our proposal is taking a look at these natural processes and identifying some ways to engineer the microbial aspects to be faster and more efficient," he said.

What's unique about the Mississippi River delta, according to Bivins, is that it has moved over time, creating a gradient of smaller deltas within the larger delta and all of the deltas are in different life stages. This gives his team the ability to take measurements along the smaller deltas and look at the changes over time that are occurring in the microbes and soil.

"We want to see if we can identify some of these deltas strategically, then set up instrumentation and experimental stations to look at this land formation over longer durations," Bivins said. "Based upon what we observe, we want to find ways to accelerate or amplify those natural microbial processes. It's land, which we desperately need."

Bivins' hope is that his team will be able to garner more funding for this research, with the ultimate goal being that within a decade, there will be a wetlands observatory at LSU that will change how deltas are managed throughout the world.

8. LSU Civil & Environmental Engineering Professor Studying Funding Models for Wildfire Prevention

Much like hurricane season in Louisiana, California deals with its own annual period of climate catastrophe during wildfire season, which typically runs from May or June until October or November. Restoration efforts can reduce the risk of wildfires, but restoration costs are high and often prohibit the landscape-scale restoration efforts needed for risk reduction.

LSU Civil and Environmental Engineering Assistant Professor Matthew Brand is working to address this by analyzing the expected impacts from restoration on runoff, erosion, and management costs borne by the Riverside County Flood Control District in Riverside, Calif. The ultimate goal of the project is to demonstrate the value of upstream restoration activities—activities that reduce the risk of wildfire within a watershed—to flood control districts, eventually leading to a Forest Resilience Bond (FRB) for the region.

Developed by Blue Forest in partnership with the World Resources Institute, USDA Forest Service, and the National Forest Foundation, the FRB deploys private capital to finance forest restoration projects to reduce the risk of catastrophic wildfire. Understanding the value of upstream restoration activities is critical for FRB success in the Cleveland National Forest.

“Upstream restoration activities…can include things such as removing smaller, flammable brush; controlled burns which remove small brush and debris without burning larger trees; and, what will likely be the largest in our case, creating armored corridors in high-risk locations,” Brand said. “Armoring involves removing flammable material from within a certain buffer distance from the road. There is a major road that many people use in the Cleveland National Forest (Ortega Highway), which is a hotspot for human-caused ignition sources from cars, cigarettes, etc.

“The wildfire destroys the vegetation which was stabilizing the soil, and then when it rains, it causes mass hillslope failure and other types of erosion, which results in debris flows and rapid infilling of debris basins and flood control channels, greatly increasing flood risks.”

Working alongside Brand on this project are the science team from non-profit Blue Forest, Co-Founder and Chief Scientist Phil Saksa and Director of Science Strategy Tessa Maurer; Ariane Jong-Levinger, a postdoctoral scholar at Chapman University; Luke Mangney, a graduate student in Brand’s lab; Riverside County Flood District; and the Cleveland National Forest.

“[Dr. Jong-Levinger’s] work looked at how wildfires increase the likelihood of floods by increasing post-fire erosion and, thus, sediment accumulation in flood infrastructure, such as debris basins and flood channels,” Brand said. “She developed a model that captures interactions between wildfires, precipitation, and infrastructure design and maintenance to estimate flood risk due to infrastructure overtopping.

“This project will tie together my Ph.D. work on quantifying dredging costs and financing of upstream interventions with Environmental Impact Bonds (EIBs) with the fire-flood risk model of Dr. Jong-Levinger to quantify the likelihood that fire management in the Cleveland National Forest upstream could pay for itself through reduced dredging costs and flood risks downstream in Riverside County.”

Mangney, a California native now pursuing his graduate education at LSU, has witnessed up close the damage wildfires have caused to his state and region and is eager to be part of the solution through his efforts here.

“My work will be primarily focused on incorporating costs into Dr. Jong-Levinger’s existing model,” he said. “Having witnessed firsthand the growing prevalence of wildfires in California, I’m excited to contribute to a project that aims to mitigate fire risk in Riverside County. It’s a chance to positively impact my friends and family back in California.”

Regarding Louisiana, Brand believes the work being done on this project is transferable, as sediment management and its funding sediment pose challenges everywhere. For instance, the lessons learned across the country in California can be applied to future wetland restoration projects and their funding.

“Specific to Louisiana, I’m hoping to develop an Environmental Impact Bond for wetland restoration for the purposes of flood-risk reduction and carbon sequestration, and I believe that the scale at which the EIBs allow us to do restoration can result in better outcomes for ecosystem health and co-benefits compared with more traditional grant funding sources and doing restoration in a piecemeal manner,” Brant said.

FACULTY NEWS

CEE'S MOHAMMAD RECEIVES LIFETIME HONOR FROM ASCE

LSU Civil and Environmental Engineering Professor Louay Mohammad has been awarded the prestigious 2024 Lifetime Achievement Award by the American Society of Civil Engineers (ASCE), Louisiana Section—Baton Rouge branch. The honor recognizes his contributions to the field of civil engineering, significant service to ASCE, and unwavering commitment to integrity and technical excellence.

Over the course of his 37-year career, Mohammad has made groundbreaking advancements in construction materials characterization, pavement engineering, asphalt science, and sustainable and resilient infrastructure. He has led numerous landmark projects, including efforts to improve the engineering state of practice in flexible pavement; showcase how to recycle waste tires for use on Louisiana roads without sacrificing performance quality; and establish multidisciplinary focus research on sustainability, the effects of climate change, and sea-level rise on the state's road infrastructure.

In addition to his professional achievements, Mohammad has been a dedicated member of ASCE for more than 40 years. He has held various leadership positions within the organization, such as founding member and chair of the ASCE Construction Institute, Bituminous Materials Committee; executive committee founding member and chair of the ASCE Transportation and Development Institute, Louisiana Chapter; Bituminous and Flexible Pavement section editor of the ASCE Journal of Materials in Civil Engineering; trustee of the ASCE Foundation Council of Trustees, Region 5; chair of the Materials Engineering Group of ASCE Louisiana Section, Baton Rouge Chapter; director-at-large of the ASCE Louisiana Section, Baton Rouge chapter; and he's also actively participated in initiatives aimed at advancing the profession and mentoring young engineers.

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Please include basic information, such as your full name, year of graduation, degree, mailing address, email address, telephone number, company, and your title/position. For your update, please include information on your recent professional and personal developments, along with a high-resolution photo, if available.

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