



**Agenda**  
**2020 ASCE Mississippi Section Meeting**  
**Virtual**  
**September 16-18, 2019**

<b>Wednesday, September 16</b>	
<b>Virtual Welcome Social</b>	<b>6:00 - 8:00</b>
<b>Thursday, September 17</b>	
<b>Welcome and Opening Session</b>	<b>8:00 - 8:05</b>
<b>Environmental Master Planning for a University Campus - Ian Banner, AIA</b>	<b>8:05 - 9:00</b>
<b>Break - AECOM</b>	9:00 - 9:10
Bridge Security Engineering & Design - Vincent Chiarito	9:10 - 10:00
<b>Break - PCI Gulf South</b>	10:00 - 10:10
NEXT Beam: A Solution for Today's Aging Bridges - Dan Eckenrode	10:10 - 11:00
<b>Break - Tensar</b>	11:00 - 11:10
Harahan Bridge - Reestablishing its Multi-Use Capacity - Harry Pratt	11:10 - 12:00
<b>Break</b>	12:00 - 12:05
<b>2020 Mississippi Infrastructure Report Card - Jacob Forrester and Christy Prouty</b>	<b>12:05 - 12:55</b>
<b>Break</b>	12:55 - 1:00
Geogrids for Subgrade Stabilizations & Roadway Optimization - Eden Thomas	1:00 - 1:50
<b>Break - Mississippi State University</b>	1:50 - 2:00
Soft Soil Settlement Remediation and Roadway Elevation with Permeable Low-Density Cellular Concrete: A Case Study of Lake Eloise Drive - Nico Suttmoller	2:00 - 2:50
<b>Break - Burns Cooley Dennis</b>	2:50 - 3:00
Evaluating Existing Concrete Structures and Pavements - Robert Varner	3:00 - 3:50
<b>Break - Gresham Smith</b>	3:50 - 4:00
Spring Street Bridge - Emergency Repairs - John Weres	4:00 - 4:25
MDOT Long Range Interstate Bridge Widening Design-Build Plan - Emery Sayre	4:25 - 4:50
<b>Break</b>	4:50 on
<b>Friday, September 18</b>	
Do I Really Need to Consider Sea Level Rise in Design?: Why?, How?, and How Much? - Scott Douglass	8:00 - 8:50
<b>Break - Cypress Environment &amp; Infrastructure</b>	8:50 - 9:00
Proposed Sediment Diversions in Louisiana Coastal Master Plan - Dennis Lambert and Moby Solangi	9:00 - 9:50
<b>Break - Sherwin Williams</b>	9:50 - 10:00
Potable Water Corrosion Mechanisms and Solutions - Brian Huffman	10:00 - 10:50
<b>Break</b>	10:50 - 10:55
<b>2021 Officer Induction</b>	<b>10:55 - 11:00</b>
<b>Student Chapter and Civil Engineering Department Updates</b>	<b>11:00 - 11:55</b>
<b>Break</b>	11:55 - 12:00
Post Installation Inspection of Storm Water Systems - Don Conrad	12:00 - 12:50
<b>Break - Mississippi Concrete Association</b>	12:50 - 1:00
Designing Concrete Pavements: From Parking Lots to Intersections with Full Depth and Concrete Overlay Designs - Amanda Hult	1:00 - 1:50
<b>Break - Helms Polyfoam</b>	1:50 - 2:00
Chemical Grouting - Examples and Benefits of a No Excavation Approach J.R. Crowell	2:00 - 2:50
<b>Break - Ewing &amp; Ray</b>	2:50 - 3:00
<b>Equity in Action: Treating All Persons Fairly (Ethics based on ASCE Canon 8) - Shawnboda Mead, Ed.D.</b>	<b>3:00 - 4:00</b>
<b>2021 Award Winners</b>	4:00 on

## PDH DOCUMENT FORM

Time	Session Title	Hours	Attended
AM/PM	Thursday, September 17, 2020		
8:05	Welcome and Opening Session <b>Environmental Master Planning for a University Campus</b> - Ian Banner, AIA	1.0	<input type="checkbox"/>
9:10	<b>Bridge Security Engineering &amp; Design</b> - Vincent Chiarito	1.0	<input type="checkbox"/>
10:10	<b>NEXT Beam: A Solution for Today's Aging Bridges</b> - Dan Eckenrode	1.0	<input type="checkbox"/>
11:10	<b>Harahan Bridge - Reestablishing its Multi-Use Capacity</b> - Harry Pratt	1.0	<input type="checkbox"/>
12:05	<b>2020 Mississippi Infrastructure Report Card</b> - Jacob Forrester and Christy Prouty	1.0	<input type="checkbox"/>
1:00	<b>Geogrids for Subgrade Stabilizations &amp; Roadway Optimization</b> - Eden Thomas	1.0	<input type="checkbox"/>
2:00	<b>Soft Soil Settlement Remediation and Roadway Elevation with Permeable Low-Density Cellular Concrete: A Case Study of Lake Eloise Drive</b> - Nico Suttmoller	1.0	<input type="checkbox"/>
3:00	<b>Evaluating Existing Concrete Structures and Pavements</b> - Robert Varner	1.0	<input type="checkbox"/>
4:00	<b>Spring Street Bridge</b> - Emergency Repairs - John Weres	0.5	<input type="checkbox"/>
4:25	<b>MDOT Long Range Interstate Bridge Widening Design-Build Plan</b> - Emery Sayre	0.5	<input type="checkbox"/>
AM/PM	Friday, September 18, 2020		
8:00	<b>Do I Really Need to Consider Sea Level Rise in Design?: Why?, How?, and How Much?</b> - Scott Douglass	1.0	<input type="checkbox"/>
9:00	<b>Proposed Sediment Diversions in Louisiana Coastal Master Plan</b> - Dennis Lambert and Moby Solangi	1.0	<input type="checkbox"/>
10:00	<b>Potable Water Corrosion Mechanisms and Solutions</b> - Brian Huffman	1.0	<input type="checkbox"/>
12:00	<b>Post Installation Inspection of Storm Water Systems</b> - Don Conrad	1.0	<input type="checkbox"/>
1:00	<b>Designing Concrete Pavements: From Parking Lots to Intersections with Full Depth and Concrete Overlay Designs</b> - Amanda Hult	1.0	<input type="checkbox"/>
2:00	<b>Chemical Grouting - Examples and Benefits of a No Excavation Approach</b> - J.R. Crowell	1.0	<input type="checkbox"/>
3:00	<b>Equity in Action: Treating All Persons Fairly</b> (Ethics based on ASCE Canon 8) - Shawnboda Mead, Ed.D.	1.0	<input type="checkbox"/>

Registrant Name (Print) \_\_\_\_\_ Signature \_\_\_\_\_ Total Hours Claimed \_\_\_\_\_

*The Mississippi Board of Registration for Professional Engineers and Land Surveyors (BOR) has established the formal Professional Development Hour (PDH) in the requirements for license renewal. Seminars within this meeting conform to the rules established by the BOR, and in consequence, should qualify for a formal 16.0 PDH credits*

ASCE Officer Name (Print) \_\_\_\_\_ ASCE Officer Signature \_\_\_\_\_

## PROFESSIONAL DEVELOPMENT SEMINAR SCHEDULE

**THURSDAY, SEPTEMBER 17, 2020**

Thursday, 8:00 a.m. – 9:00 a.m.

### **Welcome & Opening Session**

Welcome message by ASCE President Jennifer Sloan Ziegler, Ph.D., P.E., ENV SP

### **Environmental Master Planning for a University Campus**

**Ian G. Banner, AIA, Director of Facilities Planning and University Architecture, University of Mississippi**

*Ian was born in England (Lutterworth England and grew up in Rutland – a rural county and the smallest in England) and came to the United States in 1984. He has professional and teaching experience, having worked in private practice from 1982 to 2002 and with the School of Architecture at Mississippi State University from 1987 to 1994. He received tenure and was named associate professor in 1994.*

*In 2005, Ian was appointed Director of Facilities Planning at the University of Mississippi and retains the position of University Architect and Director of Sustainability.*

*Ian's areas of architectural expertise are in energy-efficient design and construction, daylighting, passive systems such as thermal buoyancy "stack-effect" ventilation, and environmental impact of building-materials selection.*

*He has written on architecture and the environment, indigenous houses in the Appalachians, natural lighting in overcast and clear-sky regions, and humidity and ventilation of medieval buildings in northern Europe.*

#### Education:

*ONC Building Construction; Peterborough Technical College*

*Bachelor of Arts in Architecture, Plymouth University*

*Graduate Diploma in Architecture, Plymouth University*

*Master of Philosophy, University of Cambridge (Environmental architecture)*

*Member of Darwin College, Cambridge*

#### Professional Affiliations:

*Registered Architect in the United Kingdom, 1987 – 2008*

*Member of the Royal Institute of British Architects (1987 - 2007)*

*Member of the American Institute of Architects*

*Registered with the National Council of Architectural Registration Boards (U.S)*

*Member Association of University Architects*

#### Positions:

*The University of Mississippi in 2004; University Architect.*

*Director of Facilities Planning in July 2006*

*Director of The Office of Sustainability; University of Mississippi, 2012*

*Architect in private practice with Shafer/Banner Architects from 1987 – 2004*  
*Associate Professor, School of Architecture at Mississippi State University, 1987 – 1994*  
*Received Tenure in 1994*  
*Areas of professional expertise: low-energy architecture environmental impact of buildings,*  
*daylight/sunlight & the interior environment, materials procurement, stack-effect natural ventilation.*

Thursday, 9:10 a.m. – 10:00 a.m.

### **Bridge Security Engineering & Design**

**Vincent Chiarito, P.E., Federal Highway Administration, Office of Infrastructure**

This presentation provides an overview of bridge security engineering and design. The purpose is to educate and motivate owners and stakeholders responsible for bridge safety to conduct risk assessments that identify security vulnerabilities. The vulnerabilities of concern include those from intentional threats. Concepts for solutions that create countermeasures to successfully mitigate the unacceptable consequences are presented.

Bridge safety is a strategic goal of Federal Highway Administration (FHWA) and is achieved by providing and maintaining an asset that first meets requirements for: strength, service, function, and operation. Security and resilience are two additional characteristics that can also enhance safety. There are resources through the FHWA and the American Association of State Highway Officials that address how to provide physical security protection through conceptual design, case studies, and operational requirements. A secured facility is one that is protected against intentional hazards such as fire, blast, or other sabotage. A resilient facility absorbs any credible hazard, survives, recovers, and returns to function. Protective measures, based on assessing risks of vulnerabilities, may include certain design enhancements such as hardening of selected structural components, or preparations to respond when an intentional event occurs. The FHWA directed activities with collaborators and stakeholders seeks to continue to develop specific design and analysis tools. These tools can enable owners understand the options for providing necessary physical security using a risk management approach.

***Vince** is a Senior Bridge Engineer with the Federal Highway Administration, Office of Infrastructure. He focused on Safety and Security for bridges and tunnels. Prior to joining FHWA he conducted research in structural engineering regarding blast effects, dynamics, and experimental structural response performance for FHWA, DHS, and many other agencies for almost 38 years. He holds a Professional Engineering License from the State of Mississippi and has a license issued by the Structural Engineering Certification Board.*

Thursday, 10:10 a.m. – 11:00 a.m.

### **NEXT Beam: A Solution for Today's Aging Bridges**

**Dan Eckenrode, PCI Gulf South**

Initially developed in the New England states, the NEXT beam has slowly seen steady growth within the other areas of the country. Developed primarily for the 50 to 90-foot spans, this technology is well suited for local and smaller state bridges and for any project that is considering the Accelerated Bridge Construction method. This presentation will cover the basic types of NEXT beam and highlight a few regional projects recently completed.

*Dan is the Executive Director of PCI Gulf South. Through his extensive experience and knowledge of the precast/prestressed concrete industry, Dan is leading the charge to bring precast concrete products to the forefront of the building industry in the gulf states region. Dan enjoyed many years working shoulder to shoulder with builders and designers in PA before moving to MS in June 2016. In his short time along the Gulf Coast, he has come to realize the significant impact precast can make to solving issues unique to the coastal environment. Dan is heavily involved in PCI (Precast/Prestressed Concrete Institute) on the national level through participation in various committees that share the common goal of educating and promoting the uses of precast as a versatile, durable and sustainable building product. Dan conducts on-site Lunch & Learn programs and university presentations for design professionals and students who desire a deeper understanding of precast/prestressed products.*

Thursday, 11:10 a.m. – 12:00 p.m.

**Harahan Bridge – Reestablishing its Multi-Use Capacity**  
**Harry Pratt, P.E., President & Civil Engineer, Allen & Hoshall**

The Big River Crossing (BRX), connecting Memphis, Tennessee to West Memphis, Arkansas, is the longest rail-to-trail conversion in the US. It serves as a key link in a regional network, and ultimately a national trail corridor that will extend from New Orleans to Minnesota. Completed in summer 2016, the BRX is notable not only for its extremes in both length and height above grade, but also for the fact that the bridge, first opened in 1916 for both wagon and train passage, still carries active rail traffic.

The presentation will review the history that led to the development of the Harahan Bridge, highlight the elements of the Bridge's construction, discuss the local surge of enthusiasm for greenway spaces, and highlight the collaboration among local leaders representing multiple jurisdictions that lead to the development of the BRX. The presentation will discuss the various methods considered for constructing the walkway, show how the bridge was modified to protect cyclists and pedestrians, and how it was designed to meet ADA and security concerns.

*Harry is the President – CEO of Allen & Hoshall; he is located in their Memphis office. He has been with the firm for 45 years. Harry is a professional civil engineer licensed to practice in six states.*

*Harry has been active in a number of associations including the Consulting Engineers of Tennessee, the American Consulting Engineers Council, the National Society of Professional Engineers, the UoM Executive MBA Alumni Association, the Christian Brothers University Construction, Engineering & Inspection Consortium, and Kiwanis International. He has also served on several advisory boards including: the Herff College of Engineering Dean's Advisory Board, the Christian Brothers University Engineering Dean's Advisory Board, and the Christian Brothers CEE Department Advisory Board.*

*Education:*

*B.S., Civil Engineering, Christian Brothers University  
M.S., Civil Engineering, The University of Memphis  
MBA, the University of Memphis*

Thursday, 12:05 p.m. – 12:55 p.m.

**2020 Report Card for Mississippi's Infrastructure**  
**Jacob Forrester, P.E., 2020 Report Card Chair, Assistant General Manager, Starkville Utilities**  
**Christine Prouty, Ph.D., Senior Manager, Infrastructure Initiatives, American Society of Civil Engineers**

2020 ASCE Mississippi Section Meeting  
September 17 & 18, 2020

From the roads and bridges we drive on, to the water we drink, the wastewater we flush, and the levees protecting our homes from flooding, infrastructure is a vital part of every Mississippian's everyday life. It not only powers our homes when we flip a light switch, but it powers our economy taking goods from our ports and transporting them via rails and roads to our grocery store shelves. Mississippi's transportation infrastructure ensures we can move between our homes, workplaces, and schools and that emergency services can respond quickly in times of need. Our infrastructure systems play a critical role in the State's economic prosperity and help preserve – and can enhance – quality of life for all Mississippians. While many Mississippians might not think about infrastructure every day, Mississippi's civil engineers do! We work hard to build and maintain our infrastructure systems for the public's health, safety, and welfare. This presentation will reveal the grades from the 2020 Report Card for Mississippi's Infrastructure, highlight solutions to raise the grade, and inform listeners on the various ways they can get involved to improve our infrastructure.

**Jacob** earned his B.S. and M.S. at Mississippi State University (MSU) in 2009 and 2014, respectively, in Civil and Environmental Engineering. He is currently pursuing a Ph.D. in Public Policy and Administration at MSU.

*In July of 2018, Jacob began serving as the Assistant General Manager of Starkville Utilities where he oversees all of operations for Electric, Water and Sewer infrastructure. Jacob is also responsible for overseeing the successful implementation of \$1.5 million of capital design and construction annually, which is an aggressive reinvestment initiative into the local infrastructure, funded annually by capital, in lieu of longer-term debt initiatives, for the City of Starkville.*

*Jacob's background includes several years in private Civil Site and Water Resources consulting. Subsequently, he joined MSU where he was responsible for overseeing nearly \$400 million dollars in commercial construction improvements. After successfully managing the construction improvements, MSU promoted Jacob to overseeing the Utilities department, where he managed and successfully implemented programs to improve reliability of infrastructure and employee production.*

**Christy** earned her Ph.D. in environmental engineering at the University of South Florida. She has worked with grassroots and institutional stakeholders across the US and around the world on engineering solutions and research related to sustainability, resilience, innovation adoption, and climate adaptation.

*Using her background in engineering and research, Christy now works with the American Society of Civil Engineers (ASCE) Infrastructure Initiatives team to develop and leverage advocacy tools and resources. Namely, Dr. Prouty collaborates with nationwide members of ASCE to train, oversee, and produce the engineers' state-based and national assessments of different infrastructure categories – ASACE's Infrastructure Report Cards.*

*Christy enjoys the research-based nature of her work and is especially passionate about bridging the gap between engineers' technical writing and producing materials that are widely accessible and usable by policy makers, the business community, and the public.*

*Dr. Prouty likes collaborating on holistic engineering solutions that shift away from traditional, siloed approaches and towards those that pursue resilience, sustainability, and innovation across different types of infrastructure and among a varied group of stakeholders. Christy's other degrees are also in*

*environmental engineering (University of South Florida—2013—Master's International Peace Corps Program, Uganda; Louisiana State University—2009).*

Thursday, 1:00 p.m. – 1:50 p.m.

### **Geogrids for Subgrade Stabilizations & Roadway Optimization**

**Eden W. Thomas, P.E., Tensar International Corporation**

Geogrids have been utilized for 40 years in roadway applications. Subgrade stabilization, pavements optimization, and shrink-swell mitigation have been areas of interest for researchers. The presentation will provide an overview of geogrid applications in roadways, an overview of the results of performance-based research and testing, and how the results of research to date can be utilized in roadway designs.

***Eden** is a graduate of Mississippi State University. He started his career with the US Army Corps of Engineers, Vicksburg District while in school. In 2012 he went to work in geotechnical consulting, working on projects mostly in the Gulf Coast region. His experience includes projects in the industrial sector, the commercial sector and governmental sector. Since joining Tensar, he has worked as an Area Engineer where he has focused on geogrid use in a variety of applications, with emphasis on subgrade stabilization and pavement optimization. He lives in Houston, Texas and works on projects across the Gulf Coast region.*

Thursday, 2:00 p.m. – 2:50 p.m.

### **Soft Soil Settlement Remediation and Roadway Elevation with Permeable Low-Density Cellular Concrete (PLDCC): A Case Study of Lake Eloise Drive**

**Nico Sutmoller, Global Lightweight Fill Specialist, Aerix Industries**

The presentation will address the feasibility of using permeable low-density cellular concrete (PLDCC) in soft soil remediation and roadway elevation applications.

In this discussion, the presentation will examine the case study of a project conducted at West Lake Eloise Drive in Winter Haven, Florida, and will also review and evaluate data from recent studies conducted at the University of Missouri - Kansas City related to the physical properties of PLDCC, including permeability, lightweight characteristics, compressive strength, and resistance to buoyancy.

In its discussion of the Lake Eloise Drive project, this paper will posit the effectiveness of 30-pcf (pounds per cubic foot) PLDCC in the remediation of settlement caused by soft soils as well as the elevation of roadways in areas that experience high water tables.

Design was completed in 2018, with permitting in 2019 and construction completed in May 2020.

***Nico** works in conjunction with the technical staff in providing his knowledge and experience with numerous geotechnical, civil and structural issues, including unacceptable soil settlement, lateral load reduction, slope stabilization and reducing loads over buried utility issues. Nico also works with specialty contractors, sub-contractors and general contractors to install the Aerix technologies including the Aerix patented pervious cellular concrete technology.*

Thursday, 3:00 p.m. – 3:50 p.m.

### **Evaluating Existing Concrete Structures and Pavements**

**Robert Varner, P.E., Senior Concrete Materials Engineer, Burns Cooley Dennis, Inc.**

Concrete is the world's most versatile construction material and is utilized in almost every construction project. Concrete is also very durable and strong when the mixture is properly proportioned with quality materials. Concrete in combination with reinforcing steel provides Engineers with strength needed to design the most complex structures. However, sometimes the strength of the concrete does not meet the specified strength or information is needed for the concrete and/or reinforcing steel in an existing structure. Equipment as well as codes and standards are available to assist Engineers when faced with these challenges. This presentation will review codes, standards, and testing available including; ground penetrating radar, core testing, petrographic analysis, and corrosion evaluation.

#### **Learning Objectives**

1. List the most common ASTM standard and ACI code useful in evaluating concrete within an existing structure.
2. Describe compressive strength requirements of concrete cylinders and drilled cores.
3. Describe important properties of concrete and reinforcing steel that can be obtained with the use of ground penetrating radar.
4. List important properties / characteristics of concrete that can be determined through petrographic analysis.

***Robert** has been involved in the construction industry for over 30 years with experience in training and certification, concrete materials testing, research, special inspections, forensic investigations, concrete pavement design, association management, and metal building design. Robert is responsible for concrete pavement design, concrete testing, and special inspections for Burns Cooley Dennis, Inc. He is a voting member of three ACI technical committees including; committee 330 for Concrete Parking Lots and Site Paving, 522 for Pervious Concrete, and 610 for Technician Certification. Robert is the past Chairman of committee 330 serving two terms.*

Thursday, 4:00 p.m. – 4:25 p.m.

### **Spring Street Bridge – Emergency Repairs**

**John Weres, P.E., Gresham Smith**

In late April 2020, an Union Pacific (UP) train derailment caused substantial damage to Bent 3 of the US 71 Spring Street Bridge in downtown Shreveport, LA; forcing the closure of the heavily traveled NB Spring Street Bridge. LA DOTD issued a task order to Gresham Smith under our existing IDIQ contract for Complex Bridge Inspections and Repairs. While not officially a Construction Management at Risk (CMAR) contract, the work generally followed a CMAR type of arrangement as the DOTD later selected CEC, Inc. out of Lafayette LA as the general contractor.

Gresham Smith worked closely with DOTD and CEC to develop a temporary strong back system to support the structure from above the deck, for the temporary shoring system, permanent bridge repairs, and installation of a concrete crash wall. The track system is operated by KCS and is used jointly by KCS and UP Railroads. Close coordination was required with the railroads on both the construction details and constructability aspects. With between 8 and 16 trains per day through the corridor, close coordination with the railroads was critical. The large volume of train traffic, and the requirement to clear the



construction workers from the right-of-way for each train movement, has dramatically limited the working time available to complete the repairs.

The temporary strong back system included steel beams on the bridge deck with hanger rods to support the floor beam for the removal/replacement of the existing steel columns. Temporary shoring was designed based on limited height restrictions and the need to support train operations. Foundations for the crash wall were design with helical piles to support the design loads, including the potential overturning of the crash wall from a future derailment. The existing horizontal clearance of 7'-9" (center of track to face of substructure) was increased to 8'-0" with the cantilevered crash wall design.

Construction is anticipated to be completed prior to Labor Day 2020.

***John** is a professional engineer with 40 years of varied experience in bridge inspection, bridge design, and construction management. John is a graduate of the University of Pittsburgh and is licensed in MS, LA and 7 other states. John began his career with the City of Pittsburgh Bridge Division and following 10 years as a facility owner, he has worked for a variety of small and large private consultants throughout the country.*

*Currently, John is the lead bridge engineer for Gresham Smith's Louisiana bridge design team, but he is also serves as the Engineer of Record for bridge projects in Florida and Kentucky; and he performs QC reviews for MS and other state practices for Gresham Smith.*

*John lives with his wife in Gulfport, MS. They have 3 adult children living throughout the US and just welcomed their first grandchild (Katie) this summer.*

Thursday, 4:25 p.m. – 4:50 p.m.

### **MDOT Long Range Interstate Bridge Widening Design-Build Plan Emery Sayre, P.E., Gresham Smith**

Gresham Smith was called upon to develop a prioritization plan for the Mississippi Department of Transportation (MDOT) to use in planning for future design-build bridge widening projects along interstate routes statewide. In the past, MDOT has used the design-build methodology to widen bridges with narrow shoulders primarily focusing along hurricane contraflow routes. This prioritization plan address the balance of such bridges along interstates in the rest of the state in a systematic, logical manner. Gresham Smith developed a data-driven Bridge Widening Index, and along with engineering judgement, has scored, ranked, and grouped bridges into bundles that can be planned for and developed into future design-build projects. This presentation is to provide a general overview of the plan.

***Emery** is a professional engineer with a wide variety in bridge design, repair, and construction management. Over the past two decades, Emery has worked as a Section Engineer in MDOT's Bridge Division as well as for the US Army Corps of Engineers, other consulting engineers, and contractors. Emery is a graduate of the University of Mississippi and is licensed in Mississippi, Louisiana, and 9 other states.*

*Currently, Emery serves as the Lead Bridge Engineer for Gresham Smith's Mississippi Transportation team. In addition to ASCE, Emery is a member of the Mississippi Engineering Society and the Society of American Military Engineers. In their "spare time", Emery and his wife enjoy being parents to five active and curious children under age ten.*

## PROFESSIONAL DEVELOPMENT SEMINAR SCHEDULE

**FRIDAY, SEPTEMBER 18, 2020**

Friday, 8:00 a.m. – 8:50 a.m.

### **Do I Really Need to Consider Sea Level Rise in Design?: Why? How? How Much?**

**Scott Dougalss, P.E., Ph.D., DCE, M.ASCE, South Coast Engineers**

Sea levels are rising along much of the US coast and the rate of this rise is projected to increase significantly this century. This raises a fundamental question about “how much sea level rise should be accounted for in the design of coastal infrastructure today?” This presentation will summarize the best available science of sea level rise projections and make three recommendations that address that fundamental question.

Two problems that sea level rise is already causing today, increased flooding due to relative sea level rise (so-called “nuisance flooding”) and increased vulnerability/damage to infrastructure in extreme events, will be discussed. The oceanographic causes of sea level rise and the projections based on climate modeling will be summarized with a focus on the most recent Intergovernmental Panel on Climate Change numbers and the Fourth National Climate Assessment numbers. In particular, the National Climate Assessment’s planning “scenarios” will be carefully compared with the scientific, process-based projections from both organizations (which are essentially now equivalent). It will be noted that many of the planning scenarios are significantly higher than the scientific process-based projections.

The recommendations for the use of these sea level rise projections in coastal engineering design are:

1. They should be used in the design of both nature-based and gray infrastructure design, and
2. The relative sea level rise rate, at the project’s location, corresponding to 2 feet of global mean sea level rise by the end of the century, based on the project’s planning horizon, is a minimum acceptable level for use in design, and
3. The full range of uncertainty in these sea level rise estimates should be understood and appropriately accounted for in design (this may include a factor of safety and/or use of higher values for design of infrastructure that is sensitive to assumed future sea levels)

The minimum recommendation is consistent with the median scientific process-based sea level rise projections for the two intermediate representative concentration pathways (RCPs), or emissions scenarios, used in the climate models. The argument will be made that such an approach is similar to the way civil engineers handle scientific input uncertainty in a variety of other situations including rainfall-runoff modeling (regression equations or rational method with Manning’s Equation). Examples will be discussed.

**Scott** was one of the authors of the Transportation chapter in the Fourth National Climate Assessment: Volume 2 Impacts, Risks, and Adaptations (2018). The National Climate Assessment is mandated by Congress every four years to assess the science of climate change and variability and its impacts across the United States, now and throughout this century. Douglass is president of South Coast Engineers, a coastal engineering and science consulting firm in Fairhope, Alabama; and an Emeritus Professor in the Civil, Coastal and Environmental Engineering Department at the University of South Alabama.

Friday, 9:00 a.m. – 9:50 a.m.

**Proposed Sediment Diversions in Louisiana Coastal Master Plan**

**Dennis Lambert, M.Eng, P.E., D.NE, D.PE, F.ASCE, IEM**

**Moby Solangi, Ph.D., President and Executive Director of the Institute for Marine Mammal Studies**

The purpose of the proposed sediment diversions (the Mid Barataria Sediment Diversion and the Mid Breton Sediment Diversion) in the Louisiana Coastal Master Plan are:

- Reconnect Mississippi River;
- Reduce land loss rates and sustain wetlands;
- Use, as an initial basis of design, a peak flow capacity of approximately 75,000 cfs;
- Design and construct the diversion intake and control structure, conveyance channel, flood protection features and any additional necessary appurtenances to maximize sediment capture, maximize flow efficiency, and allow for operations adaptability, while minimizing Operations, Maintenance, Repair, Replacement and Rehabilitation;
- Meet state and federal design criteria and environmental compliance requirements as required to achieve project regulatory approval.
- Maintain the current level of flood risk reduction of the Mississippi River Levee under the Mississippi River and Tributary program, and the local government, Plaquemines Parish, non-federal levee system.

The projects are under environmental review for clearance under the National Environmental Policy Act of 1969. They have been placed on the Federal dashboard authorized under FAST Act. They have received waivers to the Marine Mammal Protection Act. They are being funded by the various settlement trusts of BP including the RESTORE Act, NRDA and the National Fisheries and Wildlife Foundation. Commercial fisheries along with other non-governmental organizations and stakeholders have questioned the process and impacts of diverting the Mississippi River into the coastal estuaries. This presentation will discuss the regulatory issues, the construction means and methods explored, the impact analysis and the status of each project.

***Dennis**, M.Eng., P.E., D.NE, D.PE, D.WRE, F.ASCE currently is serving as a Benefit Cost Analyst at IEM reviewing flood mitigation applications for the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP). He recently achieved Academy of Coast, Ocean, Port and Navigation Engineering (ACOPNE) Diplomate status for Navigation Engineering (D.NE) and Diplomate status for Port Engineering by board certifications. In addition, Mr. Lambert was recognized by the American Academy of Water Resources Engineers (AAWRE) as a Diplomate (D.WRE) as well. He was board-certified by eminence for his advanced expertise, advanced education, and attainment of specialized body of knowledge in navigation and port engineering. Mr. Lambert is also a Fellow of the American Society of Civil Engineers (F.ASCE) and is a civil and environmental engineer with over 35 years of experience in construction and engineering. He has managed over 90 conventional infrastructure projects. His expertise includes marine environments and all phases of conventional infrastructure in Louisiana including more than 14 NEPA projects with two EISs and one 3rd party EIS. Currently, Mr. Lambert is serving as the Chair of the Waterways Committee. He worked on Independent Technical Review of the four proposed sediment diversions along the Lower Mississippi River and the New Orleans Municipal Yacht Harbor, the Lower Mississippi River Inland Waterway Study and a Fender Pile Study at the Port of New Orleans.*

***Moby** is the President and Executive Director of the Institute for Marine Mammal Studies. He founded the organization in 1984 to promote marine research, conservation and education. Dr. Solangi received his Ph.D. in marine biology from the University of Southern Mississippi in 1980. He has conducted pioneering*

*research on dolphins and sea turtles both in the wild and under human care. His research experience includes work in the effect of crude oil on fishes, ecology, marine education, marine mammal behavior, husbandry and veterinary care. In addition, Dr. Solangi serves as adjunct faculty at multiple universities and accordingly has supervised graduate students conducting research on marine mammals and sea turtles. He also served as the president of Marine Life Oceanarium in Gulfport for 25 years, until Hurricane Katrina in 2005. Dr. Solangi has an extensive list of publications ranging over multiple scientific disciplines.*

Friday, 10:00 a.m. – 10:50 a.m.

### **Potable Water Corrosion Mechanisms and Solutions**

**Brian Huffman, Sherwin Williams**

We will discuss High Performance Coatings for Potable Water Environments. The topics we will cover include:

- History of Linings & Coatings in Potable Water Storage & Treatment
- Shifts in product selection for Potable Water Storage & Treatment Applications
- Potable Water Storage Tank Challenges
- Water Treatment Plant Challenges
- Coating and Lining Product Selection

A closeout discussion will be had on upcoming changes effective 1-1-23 to what coatings will be approved for potable water storage moving forward. NSF is making sweeping changes in the coatings that are allowed to come in contact with drinking water and we will discuss specifics.

***Brian** has worked for Sherwin Williams in the coatings industry for 28 years with the most recent 15 being working with coatings specific to the water/wastewater industry. His current role for Sherwin Williams is Business Development Manager for the Southeastern Portion of the US. He is a NACE Level III Coatings Inspector and an SSPC Certified Concrete Coatings Inspector.*

Friday, 10:55 a.m. – 11:00 a.m.

### **2021 ASCE Mississippi Section Officer Inductions**

Friday, 11:00 a.m. – 11:55 a.m.

### **Student Chapter and Civil Engineering Department Updates**

**Farshad Amini, Ph.D., P.E., F.ASCE, Professor & Chair, Department of Civil & Environmental Engineering, Jackson State University**

**Dennis D. Truax, Ph.D., P.E., BCEE, DEE, D.WRE, F.ASCE, F.NSPE, Department Head, James T. White Chair and Professor, Department of Civil & Environmental Engineering, Mississippi State University**

**Yacoub “Jacob” Najjar, Ph.D., P.E., Department Chair & Professor, Civil Engineering, University of Mississippi**

Friday, 12:00 p.m. – 12:50 p.m.

### **Post Installation Inspection (PII) of Storm Water Systems**

**Don Conrad, P.E., Forterra**

A discussion of the current techniques for Post Installation Inspection of all pipe materials used in storm water drainage systems. Both man entry and remote methods will be presented. National Standards for PII will be discussed as well. With reduced full time inspection on many projects, PII is necessary to assure an installation that meets the EOR's design, specifications and plans.

***Don** is a Technical Resources Engineer for Forterra Drainage Pipe & Precast, where his territory includes LA & South MS. He holds a Bachelor of Science degree in Civil Engineering from the University of Tennessee and is a Registered Professional Engineer in Virginia. Employed with Forterra/Hanson for 6 years. 15 years in the water/wastewater/storm water pipeline industry.*

Friday, 1:00 p.m. – 1:50 p.m.

### **Designing Concrete Pavements: From Parking Lots to Intersections with Full Depth and Concrete Overlay Designs**

**Amanda H. Hult, P.E., National Ready Mixed Concrete Association**

Concrete has traditionally been perceived as the higher priced but longer lasting material for pavements. Now, with asphalt prices up in the last several years, concrete is more competitive in terms of initial cost to go along with its long-standing advantage in life cycle costs. Now owners and agencies can enjoy the benefits of concrete including long service life and low maintenance along with environmental benefits including cooler surfaces and reduced lighting requirements.

This presentation provides instruction on how to design light commercial parking lots, trucking facilities and intersections either using full depth or concrete overlay design methods. The Attendee will be introduced to the appropriate design manuals and software for each application. We will evaluate concrete properties and thickness design as well as recommendations for subgrade support, reinforcement and pavement jointing are provided.

***Amanda**, senior director of Local Paving with the National Ready Mixed Concrete Association (NRMCA), provides technical expertise and education to the ready mixed concrete industry and its customers to advance the applications and use of ready mixed concrete for streets, local roads and parking areas, including conventional concrete, concrete overlays and pervious concrete. Amada provides pavement recommendations and jointing plans for parking lots through NRMCA's Design Assistance Program (DAP). Ms. Hult holds a bachelor's degree in civil engineering from the University of Florida and a professional engineering license in Colorado.*

Friday, 2:00 p.m. – 2:50 p.m.

### **Chemical Grouting – Examples and Benefits of a No Excavation Approach**

**J.R. Crowell, Helms Polyfoam**

It has been said that if you continue to perform the same activities, you can expect the same results. Helms Polyfoam entered the Chemical Grouting industry with a focus on new, innovative repairs that solved persistent, complex problems. Chemical grouting and polyurethane resins are not new technology

and are certainly time tested. But as with any industry, when you explore new opportunities you tend to find new problems to solve. The goal of this presentation is to explore ways that polyurethane resins are or can be used to solve problems related to poor soil conditions (deep stabilization), sub-grade water intrusion mitigation, infiltration and inflow issues, concrete lifting and support, and many more. We intend to open to vault on chemical grouting and foster a healthy discussion surrounding the benefits and limitations of this industry.

*J.R. wears many hats at Helms Polyfoam, but his favorite one is a Q & A presentation. As an innovative contractor in the chemical grouting world, Helms Polyfoam is constantly looking for ways to improve the industry and a room full of inquisitive minds is the best way to accomplish that goal. J.R. has approximately 6,500 hours of chemical grouting experience and presents between 30-50 times per year on the subject.*

Friday, 3:00 p.m. – 4:00 p.m.

### **Equity in Action: Treating All Persons Fairly (Ethics)**

**Shawnboda Mead Ed.D., Vice Chancellor for Diversity & Community Engagement, University of Mississippi**

This workshop invites participants to learn about the issues that impact understanding, respecting, and valuing others in our daily lives. We will explore expectations and individual experiences related to diversity, equity, and inclusion. As you continue our commitment to CANON 8, it is important to ensure fair and equitable practice. This workshop will provide the tools and strategies for putting equity into action in your various teams and professional settings.

*Named interim Vice Chancellor for Diversity and Community Engagement in July 2020, Dr. **Shawnboda Mead** is responsible for advancing institutional diversity, equity, and inclusion goals. Mead provides leadership and coordination of the University of Mississippi's strategic efforts to create an inclusive and welcoming environment for all members of the community. Mead joined UM in July 2014 as the inaugural director of the Center for Inclusion and Cross-Cultural Engagement and most recently served as the university's Assistant Vice Chancellor for Diversity.*

*Mead earned a bachelor's degree in educational psychology from Mississippi State University and a master's degree in student affairs/higher education administration from Western Kentucky University. She holds a doctorate in higher education administration from UM and has over 16 years of experience in higher education.*

*A native of Prentiss, MS, Dr. Mead and her husband, Neal, have two young sons.*