After a decade of successful SC Engineering Conference and Trade Shows, COVID-19 has challenged us to overcome and adapt. This year, we are excited to offer the same quality programs for professional engineers virtually. Registrants will have the opportunity to earn up to 15 PDH’s through diverse tracks such as environmental/geotechnical, structural transportation, general/business and civil engineering.

The mission of the SC Engineering Conference continues to be to provide “timely presentations on various engineering subjects, keynote presentations and enough professional development hours to substantially meet the annual requirement.”
Thursday, August 13

8:00 - 8:50 AM ................................................................. 1 PDH
Coincidental Cost Curves – Litigation and New Product Development
Jon Tirpak, Sabattis, LLC

In 2019 when reviewing cost curves for court cases AND new product development, it was noted that both processes, although designed for different domains, are remarkably similar. For both client driven processes information is “purchased” along the way, and pre-established decision points serve as Go/No Go milestones. By following documented processes, engineers working with their clients (lawyers for litigation and OEMs or relevant manufacturing tiers for new products) manage cost and risk while seeking an optimal outcome. During this presentation, attendees will gain insight into both processes and will see the application of select tools from a metallurgical engineer’s perspective as applied to these processes. Upon further review of these processes in 2020 with another case involving litigation and new product development, it was observed how the two processes intersect.

9:00 - 9:50 AM ................................................................. 1 PDH
SCDOT Update
Leland Colvin, PE, Deputy Secretary of Transportation, SCDOT

10:00 - 10:50 AM ............................................................. 1 PDH
The Liberty Trail
Chris Haynes, Davis & Floyd, Inc.

Many historians consider the Revolutionary War to have been decided in the swamps, fields, woods and mountains of South Carolina, won by the resilience and determination of Continental soldiers and Patriot militia. Although the full story of the Southern Campaigns is not widely known, the events of 1779-1782 in the Carolinas directly led to an American victory in the war.

Soon, The Liberty Trail will be a unified path of preservation and interpretation across South Carolina, telling this remarkable story. These important battlefields, still largely unspoiled, deserve to be preserved. Since early 2016, Davis and Floyd has been working with the South Carolina Battleground Preservation Trust and the American Battlefield Trust to design immersive historic interpretation parks across the state.

More than 200 battles and skirmishes occurred in South Carolina during the war. Working with a panel of historians and archaeologists to select the most significant of these actions, the Battleground Trust developed plans to form The Liberty Trail, an innovative driving route designed to connect these battlefields. With Davis and Floyd’s help, The South Carolina Battleground Preservation Trust and the American Battlefield Trust are now working toward the launch of the initial phase of The Liberty Trail.

This presentation will provide attendees with an overview of the project and historic sites identified across the state to be a part of the larger trail network. Davis & Floyd will also present the master plans for the first two sites on the Trail: Fort Fair Lawn located in Moncks Corner, SC and the Camden Battlefield and Longleaf Pine Preserve located in Camden, SC.

11:00 - 11:50 AM ............................................................. 1 PDH
The Seven Deadly Sins of Email
Karen McCabe, IMCI

11:50 AM - 12:25 PM ...................................................... Lunch Break
12:30 - 1:30 PM .......................................................... KEYNOTE ADDRESS
Ports Update
Barbra Melvin, COO, South Carolina Ports Authority

1:40 - 2:30 PM .......................................................... 1 PDH
Professional Ethics – Right or Wrong: You Decide
Rick Guerra, National Society of Professional Engineers

Ethics is often referred to as the right or wrong way of doing things. But how do we act when no one is watching? This presentation begins with a brief review of the NSPE Code of Ethics and an introduction to the NSPE Board of Ethical Review as a valuable ethics resource. Attendees will then together explore and analyze several case studies that will help them strengthen their own professional ethics by discussing common dilemmas facing engineers in today’s work environment.

2:40 - 3:30 PM .......................................................... 1 PDH
Legal & Ethical Aspects of Practice for Engineers & Their Employers
Sam Wellborn, Robinson Gray Stepp & Laffitte, LLC

This session will equip you and your firm with an understanding of what ethical and legal issues to avoid in your practice as an engineer. The session will also cover what to expect after you have received a notice of complaint, how to navigate the complaint process, and how to protect your firm from liability.

3:40 - 4:30 PM .......................................................... 1 PDH
Business Planning and Protection and Legal Compliance
Kim Raber, Law Office of Kimberly A Raber, PA

Everyone is forming their own business entity, such as LLCs, but they often do not have everything they need to save taxes and protect their personal assets from the debts and liabilities of their business. They also do not know the steps they have to take to maintain their business or what happens if another owner becomes incapacitated or disabled, dies, quits, or wants to sell his or her interest in the business. In this segment, we will discuss how to set up and maintain your business properly, how to deal with a business owner that wants to sell his interest in the company, and how to deal with issues such as incapacity and death of a business owner.

8:00 - 8:50 AM .......................................................... 1 PDH
When Good Buildings Go Bad
Mike Hammill, ECS Southeast, LLP

Topic Environmental Engineering/ Risk Management: This presentation will be an overview of ECS experiences, lessons learned, and review of mold and moisture impact and remediation for new construction from an engineering/industrial hygiene perspective. ECS is heavily involved in new construction as a construction materials testing firm. As such our environmental engineering group is frequently requested to evaluate, test, and monitor mold and moisture remediation in new construction in a variety of projects, ranging from single family homes to 600 unit apartment complexes, and from commercial department stores to hotels. This presentation will review assessment techniques, recommendations for remediation, and practical applications as it relates to mold/moisture abatement on various work sites, and also what is involved in post-remediation documentation of completion of work.

9:00 - 9:50 AM .......................................................... 1 PDH
The Environmental Evolution - "YOU GOT TO BE KIDDING ME!"
Thomas Jordan, PE, Davis & Floyd, Inc.

A look back at the evolution of environmental permitting and compliance over the past 4 decades. A discussion related to almost every area of progress and economic development including issues and hurdles related to industrial, air, storm water, wastewater, hazardous waste, transportation, solid waste management, educational facilities, asbestos, demolition, redevelopment, and public involvement.
During construction, ECS also performed a condition assessment of the Historic Wilcox Hotel, limited vibration monitoring of specialty geotechnical contractor to collect additional subsurface data and refine the design to preferred means and methods. Wurster Engineering and Construction was selected as the specialty geotechnical contractor. Post award, ECS worked with the means and methods employed during construction. Crowder Construction Company was awarded the repair project, and developed construction drawings to allow for the repair. With all geotechnical systems, the performance is highly dependent on the soil and rock conditions. The project Civil Engineering firm. As part of the initial phase, ECS developed three (3) conceptual alternatives to stabilize the railroad cut slope under passing several downtown bridges. There are many homes and businesses that were built along the railroad including the Willcox Inn which was built in the late 19th century in downtown Aiken. The City of Aiken received a two phased Federal Hazard Mitigation Grant from FEMA to stabilize the railroad cut slope to prevent the foundation of the Willcox Inn from being compromised. The first phase of the project was to consist of constructing a geotechnical evaluation of the embankment; completing the design of the stabilization project; developing project specifications and a bid specification; and completing a bid of the project to determine the actual costs for FEMA consideration of a Phase 2 award consisting of the stabilization of the railroad cut slope. During the first phase of the project, ECS provided Geotechnical Engineering consultation and subsurface exploration services as a sub-consultant to under Johnson, Laschober & Associates, P.C. who was the project Civil Engineering firm. As part of the initial phase, ECS developed three (3) conceptual alternatives to stabilize the slope and hotel. The conceptual design phase and alternates considered cost, schedule, and constructability concerns and were presented to the City of Aiken for approval. ECS developed a detailed design for the selected stabilization system and then developed construction drawings to allow for the repair. With all geotechnical systems, the performance is highly dependent on the means and methods employed during construction. Crowder Construction Company was awarded the repair project, and Wiener Engineering and Construction was selected as the specialty geotechnical contractor. Post award, ECS worked with the specialty geotechnical contractor to collect additional subsurface data and refine the design to preferred means and methods to reduce overall project cost. The City of Aiken directly benefited from this value engineering and reduction in project cost. During construction, ECS also performed a condition assessment of the Historic Wilcox Hotel, limited vibration monitoring of the Hotel and materials testing services.
Tunnels in Greenville and Charleston  
Jonathan Ard, Black & Veatch

Hugh K. Leatherman Sr. Terminal Port Expansion Project  
Ryan Keiper, Insight Group
The Hugh K. Leatherman Sr. Terminal located along the Cooper River in Charleston, SC, is one of the Nation's largest port expansion projects. The new terminal is built on historic marsh and dredge spoils, where soils are anticipated to consolidate up to 12 inches over the next 25 years. As a result of the challenging site conditions, the site was surcharged with rock for multiple years and the project installed some of the most linear feet of wick drains as any project in the country. ADS' polypropylene pipe was selected over conventional rigid box culverts along with trenches that are supported with geotextiles to minimize differential settlement. If you have sites with challenging soft soils and settlement, this case study’s design may be beneficial to you.

Friday, August 14

Civil/General

PFAS  
Rick Welch, SCDHEC
One class of these emerging contaminants is per- and polyfluoroalkyl substances (PFAS), a group of more than 4,000 man-made chemicals that have been used since the 1940s for their heat resistance and water, oil, and dirt-repellence. Because of their stability, PFAS resist breakdown by natural processes and persist in the environment indefinitely, earning them the nickname “forever chemicals.” The most common exposure route is from swallowing food or water that contains PFAS.

Floodplain Design, Construction, and Impacts on Flood Insurance  
Zach Faulkner, Floodproofing.com
This session provides insight into the importance of proper foundation flood vents and dry floodproofing techniques for buildings located in a flood zone. It will identify FEMA, NFIP, ASCE, ICC, and Building Code regulations, codes, and standards as they relate to sustaining foundations and overall business continuity in flood hazard areas and analyze the role of building compliance in securing lowering flood insurance rates and what mitigation solutions are available. After the session, participants will have a thorough understanding of floodproofing options and the important role they play in designing a sustainable structure.

Infrastructure Management Software Integrated with Robotic Technology  
Mike Mraovich, AET-360, LLC
AET-360 and AET Services have collaborated to provide our clients the ability to merge all Drainage, Roadway, Bridge and Erosion Control Inspections into one interactive site that can begin Pre-Construction and remain throughout Project completion and into Maintenance Planning.

Solutions for Failing Culverts  
Tiffany Ferrell, Rinker Materials
Failing culverts create maintenance and budget challenges for DOTs and Public Works Agencies. Public agencies exercise both temporary and permanent strategies to address the safety and structural concerns created by failing culverts. This class highlights trenchless and open cut replacement practices.

Lunch Break
Drum Island Marsh Restoration

Jonathan Sigman, Collins Engineers, Inc.

During construction of South Carolina Ports Authority’s Hugh K. Leatherman Sr. Terminal in North Charleston, 11 acres of salt marsh were filled in. To offset the loss of those 11 acres, 22 acres of marsh were restored on the southern tip of nearby Drum Island in Charleston Harbor. Collins Engineers, Inc. provided coastal and marine engineering services for the intertidal marsh restoration. The goal was to recreate the natural grade of affected areas by removing dredge material, providing an inlet and creek system to nourish the marsh, and replanting the area with indigenous species. It’s central location in Charleston Harbor ensures that its function as an intertidal marsh provides an ecosystem to help maintain water quality and provide a habitat for juvenile fish and other local marine and avian species. Additionally, the tidal marsh acts as an attenuator of the destructive wave forces that accompany large storms.

Update from the Board of Registration

John Peeples, PhD, PE, SC State Board of Professional Engineers and Surveyors

SC811 Law and Updates

Misty Wise, SC811

This session covers SC811 Dig Law, compliance, enforcement, useful resources and tools for engineers, and how we can better partner on large projects in SC.

US 76 over Wateree: Applications of Changing Flood Distributions and 2D Hydraulic Modeling

Ryne Phillips, Davis & Floyd, Inc.

Natural flow regimes throughout South Carolina have been significantly altered by dams and other man-made structures. In some cases, USGS regression equations cannot be implemented, therefore requiring adoption of non-stationary flood frequency techniques. Couple these issues with a 4-mile wide floodplain, a 2,300-foot main span bridge, three 600-foot overflow bridges, and backwater effects from the Congaree River, and you have US 76 over Wateree. Applications of stationary and non-stationary flood frequency techniques are implemented to better evaluate peak flood flow predictions. Flood modeling using GIS techniques and advanced 2D hydraulic models are executed to quantify flow splits and hydraulic losses through existing bridge structures. Hence, historical and current stochastic hydrology techniques and 2-D hydraulic modeling will be presented to explore the good, the bad, and the ugly as applied to US 76 over the Wateree River.

Steel Fiber Reinforced Concrete

Claire Gandee, Bekaert Corporation

Yearly, millions of square feet of concrete floors are reinforced with fibers globally. Discover why more and more engineers are designing concrete floors with this innovative replacement of traditional reinforcement. Steel fibers are the perfect reinforcement for stronger, safer, cost-effective, and higher performing concrete floors.

Off-System Load Ratings and Assessments

Michael Schrepfer, TRC Engineers

Many rural local agencies have limited tax bases and budgets. These budgets are stretched to cover necessary expenses from fire and police protection to water and sewage services. With limited budgets, shortcuts on engineering services, and little oversight for infrastructure programs, these local agencies are experiencing a critical transportation and infrastructure problems. Due to pressure on these local agencies from federal and state agencies, TRC is helping local agencies in South Carolina, Louisiana and Mississippi with their bridge conditions. Through teamwork, detailed planning and coordination, the right safety culture and a recognized QC/QA program, TRC’s bridge assessments and load ratings are ensuring the people in these rural areas can travel over these bridges. TRC’s multi-state load ratings were completed ahead of schedule and under budget thus saving money for the citizens of these states. This presentation shows the planning, coordination, and load rating methodologies for the off-system concrete and timber bridges.
Registration Information

Registration Rates
- Full Conference: $275.00
- Thursday Only: $165.00
- Friday Only: $165.00

Registration Deadline - August 3

To register for the Conference click on the link below:
Conference Registration

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SAVE THE DATE
FOR THE 2021

SC ENGINEERING
CONFERENCE & TRADE SHOW

June 3 – 5, 2021
Embassy Suites Myrtle Beach
at Kingston Plantation

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Contact Information

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11:00 AM - 11:50 AM ......................................................... 1 PDH
SCDOT Inspector Certification Program and Placement on Candidates
Mike Simpson, Davis & Floyd, Inc.
TBD

11:50 AM - 12:25 PM .......................................................... Lunch Break

12:30 - 1:20 PM ................................................................. 1 PDH
Cold-In-Place Recycling (CIR) and Stone-Matrix-Asphalt (SMA): Could
These Two Special Applications of Asphalt be the Answer to Improving
South Carolina’s Roadway Infrastructure?
Kimberly Lyons, South Carolina Asphalt Pavement Association

This presentation is an overview of CIR and SMA; and their application in South Carolina during the paving season of
2019. These two technologies were used on several projects in SC in 2019. This presentation will go in depth on each
technology and how it was used successfully in SC in 2019 to improve some of our roadway infrastructure.

1:30 - 2:20 PM ................................................................. 1 PDH
SCDOT Transportation Specifications Update
Kimberly Lyons, South Carolina Asphalt Pavement Association

This presentation is an overview of all the updates to the technical specs in the transportation track since the summer of
2019.

2:30 - 3:40 PM ................................................................. 1.5 PDH
How Inclusion drives the success of major urban infrastructure projects
Joy Riley, SC DOT

Learn how SCDOT is using inclusion strategies to develop the largest infrastructure project in SCDOT history. The I-
526 Lowcountry Corridor Project is a major project in the fastest growing urban area in SC. SCDOT is taking new
approaches to find solutions that will drive success for the state as well as the local communities.