



Thursday, July 25th

The Labor Shortage Crises in Engineering and Construction: Causes, Effects, and Possible Solutions *(FES Track)*

Mohamad Hussein, PE – *GRL Engineers, Inc.* | **David Witsken** – *Universal Engineering Sciences* | **Scott Pittman** – *AJAX, FTBA* | **Stacy Miller, PE** – *FDOT* | **Dr. Jose Faria** - *FIU*

The historically tight labor market is having dramatic effects on all sectors of the national economy. There are 3 job openings for every 2 unemployed workers. The labor force shortage is acutely felt in the engineering profession and construction industry; and that is even without considering the tremendous additional need for workers to deliver the anticipated projects under the \$1.2-Trillion Infrastructure Investment and Jobs Act (IIJA). The situation in Florida is compounded by the increase in population growth with its corresponding increased demand for private and public works on top of the robust infrastructure work program. There are probably a multitude of reasons and causes to the labor shortage (e.g., pandemic effects, retiring baby-boomers, immigration regulations, changes in employment psychology and attitudes, decrease in civil engineering college enrollment, lack of interest in construction work, economic reasons, etc.). The negative effects are real and long-lasting – half of the engineering companies turned down work due to lack of human resources. The solutions are likely not easy, or quick. The distinguished panel will discuss this important and timely topic addressing the causes, effects, and possible solutions from different perspectives.

1 PDH

What Florida Must do to Deal with Projected Energy use Increase by 2050 *(ACEC Florida Track)*

Bill Bradford, PE | **Wade Conlan, PE** – *Hanson Professional Services, Inc.*

How does Florida meet our growing energy needs? The U.S. Energy Info. Admin., projects Florida's primary energy consumption will increase by 16% to 57% by 2050 compared with 2022. The Built Environment accounts for more than 60% of Florida's energy use. This presentation will look at methods Florida can use to increase energy efficiency, reduce energy use, and carbon emissions, promote a sustainable energy system and create a healthier environment. **1 PDH**

10:30am – 11:30am

	<p>Becoming a Professional Engineer (<i>FEE Track</i>)</p> <p>Zana Raybon – FBPE</p> <p>How does one become a licensed Professional Engineer in Florida? Zana Raybon, highlights the benefits of becoming a PE, and discusses the steps — education, exams, and experience — required to earn a PE license in Florida, how to maintain your PE license, and mobility of licensure between states. <u>0 PDH</u></p>
<p>1:30pm – 2:30pm</p>	<p>FDOT Safety Discussion (<i>FES Track</i>)</p> <p>Cristina Morales, PE – FDOT</p> <p>This presentation will focus on the safety program in the Florida Department of Transportation (FDOT) District 6, which oversees Miami-Dade and Monroe counties in the State of Florida. The program follows the Florida Strategic Highway Safety Plan (SHSP), and the team is structured in a way that each member is responsible for certain aspects of the plan. In addition to the SHSP, each member oversees different programs and initiatives delegated by FDOT Central Office with one goal in mind: zero fatalities and serious injuries. The way we make engineering decisions is through analyzing crash data, identifying crash patterns, and making recommendations applying the Safe System approach that will mitigate those identified crash patterns. In addition to engineering decisions, we also integrate enforcement, education, emergency services, innovation, and outreach as needed. Through examples of what our team has accomplished, we hope that the audience will know more about what we do for our community and inspire future engineers to take their career towards safety engineering.</p> <p><u>1 PDH</u></p>
	<p>Progressive Design Build for Aviation Project Delivery (<i>ACEC Florida Track</i>)</p> <p>Marcos Souza, PE, PMP – EXP US Services, Inc. Richard Forbes, PE – EXP Mauricio Gonzalez, PE - Kiewit</p> <p>While not formally adopted across Florida, Airport Authorities have entrusted their most prominent capital programs to the Progressive Design-Build (PDB) delivery method. Owners have benefited from PDB’s streamlined qualification-based selection, single point of responsibility, and Owner “off-ramps”. Insight provided from multiple angles of those involved in the PDB process including Architects, Engineers, Contractors, and Owners. <u>1 PDH</u></p>
	<p>Computing in Engineering Curriculum (<i>FEE Track</i>)</p> <p>Jeff Greenfield, Ph.D., P.E. F. NSPE – Broward County Water & Wastewater Services</p> <p>This presentation will include a PP to illustrate and introduce some of the tools important for engineers to know as they transition into their respective careers. This includes, but is not limited to, Microsoft Project, Excel, GIS, Autocad, BIM, Civil 3D, Revit, ETABS, and STAAD. Following the introduction of these software programs, we will have a panel discussion where students can ask questions. <u>0 PDH</u></p>

	<p>Flood Protection Level of Service for Central Northern Miami-Dade County <i>(FES Track)</i></p> <p>Laura Vogel, PhD, PE Brent Whitfield, PE – <i>Chen Moore & Associates</i></p> <p>The SFWMD is conducting a system-wide review of the regional water management infrastructure of critical watersheds within South Florida to determine the flood protection level of service (FPLOS) being provided by existing infrastructure under current and future conditions. This project involved preparing a FPLOS analysis for the roughly 200 square mile area in central Miami-Dade County defined as the C2, C3W, C4, C5 and C6 watersheds. <u>1 PDH</u></p>
<p>2:45pm – 3:45pm</p>	<p>How AI + Big Data will Transform the AEC Industry <i>(ACEC Florida Track)</i></p> <p>Javier Baldor – <i>BST Global</i></p> <p>AI and big data are changing the face of every industry. BST Global CEO Javier A. Baldor will examine how these technologies can be applied in the AEC industry to foster a data-driven consultancy, including: Embracing breakthrough innovations like ChatGPT, defining your firm’s big-data strategy, Investing in AI. <u>1 PDH</u></p>
	<p>Career Fair <i>(FEE Track)</i></p> <p>Please join us for the first annual FES Career Fair. The future of our profession comes to the FES conference every year hungry to get started in our profession. This recruitment opportunity is in the style of speed/mini-interviews that last around 5 minutes each. Enough time for an introduction, collect their CV and for them to answer a few short questions on skills and interest that you can have for the students. <u>0 PDH</u></p>
<p>4:15pm – 5:15pm</p>	<p>Two Subaqueous Water Transmission Mains, Two Protected Waterways, Two Funding Sources with Two Municipalities Equals One Successful Project <i>(FES Track)</i></p> <p>Kelcia Mazana Mark Worsham, PE – <i>CHA Consulting, Inc.</i> David Sackett – <i>Brierly Associates</i></p> <p>The Pineda Causeway Water Transmission Mains Project consisted of installing twin 16-inch water mains along the south side of the Causeway totaling 39,800 linear feet. In addition to open trenched sections, 7 jack and bore and 10 Horizontal Directional Drills (HDD) were utilized to install pipelines composed of fusible PVC (FPVC), HDPE, and ductile iron piping materials. The two alignments included subaqueous HDD crossings beneath two protected rivers, the Indian and Banana Rivers, with the pipe installed up to 90 feet below the river bottom, in materials consisting of medium dense sands and soft to stiff clays. The Cities of Melbourne and Cocoa shared the funding, design, permitting, and building of the water mains. This paper showcases the complexities of multiple design and construction methods and the permitting required to protect environmentally sensitive estuarine environments in addition to the efficiencies and cost savings realized by the collaboration of two municipalities. <u>1 PDH</u></p>

	<p>Design Build Procurement Methods – Pros and Cons (ACEC Florida Track)</p> <p>Clint Pletzer, PE – AVCON, Inc. Mark Jackson – JCJ Insurance</p> <p>The presentation will evaluate different delivery methods for design and construction of projects. The first part will define specifics about different delivery method types with a focus on the numerous different approaches to design build. The second half of the presentation will discuss the pros and cons to each delivery type and the potential risk in each for engineers. Lastly, an open discussion of project types suitable for each method. <u>1 PDH</u></p>
	<p>Student Presentations & Competition (FEE Track) <u>0 PDH</u></p> <p>Most Active Student Chapter Presentations</p> <p>The most active Alpha/Beta and Delta Student Chapters will present their student activities and lessons learned from the past year. The students will also discuss their goals for the next year.</p>

Friday, July 26th

<p>8:30am – 9:30am</p>	<p>Expanding Commuter Rail in South Florida (FES Track)</p> <p>Phil Schwab – RS&H Jie Bian – Broward County Transit Lisa Colmenares – Miami Dade DOT Lisa Maack - FDOT</p> <p>History of the corridor and early planning (Note- FDOT has studied 85 miles of the FEC corridor through 3 counties, prior to Brightline starting service and the counties starting their studies), benefits of Commuter Rail, FDOT participation/support BC and MD presentations would be: Overview of their individual studies/projects, Schedule of activities and next steps, Key challenges/benefits. <u>1 PDH</u></p> <p>Understanding FDOT’s New Design-Build PSPL Mandate – What Firms Should Know (ACEC Florida Track)</p> <p>Roger Guilian, JD – Greyling Insurance Brokerage & Risk Consulting</p> <p>This presentation will analyze FDOT's Feb. 2023 Engineering Operations Memorandum (EOM 23-01) that mandated project-specific professional liability insurance for design-build projects, touching on the EOM itself, what types of projects are implicated by the EOM, what kind of PSPL coverage and limits will be required, the mechanics of PSPL policies, and best practices recommendations for engineering firms. <u>1 PDH</u></p>
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<p>10:00am – 11:00am</p>	<p>Mastering Delegation: Using the 7 Essential Steps to Delegating Effectively (FES Track)</p> <p>Craig Wells, PE Tricia Hatley, PE – Freese and Nichols</p> <p>There is a constant pull on our time and resources and as you develop your career your capacity to do everything shrinks. Effective delegation is a critical skill for professionals at all levels, as it empowers teams, fosters growth, and drives productivity. In this professional development session, we will explore the seven crucial steps of delegation, providing participants with a practical roadmap to delegate with precision and finesse. <u>1 PDH</u></p>
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	<p>Navigating Flood Vulnerabilities and Enhancing Resilience in Panama City <i>(ACEC Florida Track)</i></p> <p>Sean Lahav, MPA – Halff Jennifer Aldridge, CFM - City of Panama City</p> <p>This presentation will reveal key findings from Panama City's vulnerability assessment, emphasizing flood and sea level rise susceptibility. Explore the impact of geographical characteristics, infrastructure, and storm surge. Uncover insights into high-risk areas, potential consequences, and proposed actionable recommendations. Learn how Panama City leveraged the assessment to apply for implementation funds from the Resilient Florida Program. <u>1 PDH</u></p>
<p>10:30 am – 11:30 am</p>	<p>Legislative Program <i>(ACEC Florida)</i></p> <p>This 1-hr program will include a recap of the 2024 Legislative Session, brief presentation regarding the legislative process and how you can support advocacy through FES ACEC Florida, and a preview of the 2024 Legislative Session including key focus areas. <u>0 PDH</u></p>
<p>1:30pm – 2:30pm</p>	<p>Making Connections for the Florida Panther <i>(FES Track)</i></p> <p>Alan Eldridge, PE Nicole Cribbs, CE – Faller, Davis and Associates, Inc.</p> <p>Habitat loss and collisions between vehicles and Florida panthers are leading causes of mortality of this endangered species. Engineers and scientists worked together to address a specific challenge along I-75 Alligator Alley, which was how to reconnect habitat important to the Florida panther that was fragmented by past roadway construction. The result was eight new passageways under I-75 for wildlife in western Collier County. <u>1 PDH</u></p> <hr/> <p>Leveraging AI to Enhance Operations and Asset Management <i>(ACEC Florida Track)</i></p> <p>Daniel Johns, GISP – England-Thims & Miller, Inc.</p> <p>This presentation discusses AI's role in engineering, focusing on GIS-based digital twins. AI enhances asset extraction, quickening project delivery and operations. It automates physical asset mapping, creating accurate digital twins. Benefits include improved accuracy, speed, and client engagement. Case studies illustrate AI's impact on engineering efficiency and accuracy, concluding with its future potential in innovation and asset management. <u>1 PDH</u></p> <hr/> <p>Engineering and Insurance Lessons Learned from a Hurricane <i>(Project Track)</i></p> <p>Angela Newland, PE – Sole Proprietor</p> <p>When a natural disaster does significant damage to a structure, the resultant engineering and property insurance issues are staggering. This presentation will explore these issues in depth using the real-world example of a hurricane that nearly destroyed the presenter's residential house in southwest Florida in 2017. <u>1 PDH</u></p>

	<p>FDOT D6 – SR 972 Roundabout <i>(FES Track)</i></p> <p>Raymond Valido, PE Enmanuel Espinal, PE – FDOT</p> <p>Our team will discuss how they successfully delivered FDOT D6’s first roundabout at SR 972/Coral Way and SW 15th Road. This presentation will discuss the collaborative and technical process applied by our technical experts. This team will delve into the planning, design, R/W, construction, CEI, and public engagement efforts that transformed a complex uncontrolled file leg intersection into a successful roundabout. <u>1 PDH</u></p>
<p>2:45pm – 3:45pm</p>	<p>Ethical and Efficient Use of AI in Engineering Projects and Proposals <i>(ACEC Florida Track)</i></p> <p>John Oliver Smith, PE – Haley Ward Davar Ardalan – TulipAI</p> <p>In the engineering field, mastering the art of creating effective proposals is just as crucial as possessing technical skills. Our lecture at the FES 2024 Annual Conference, titled "Ethical and Efficient Use of AI in Engineering Projects and Proposals," is designed to highlight the impact of Artificial Intelligence (AI) in elevating the work, standard of proposal and bid writing for engineers. <u>1 PDH</u></p>
	<p>Achieving Sustainable and Resilient Growth at Florida’s Seaports <i>(Project Track)</i></p> <p>Mark Valenti, PE – WSP David Candib – Carnival Corporation Glenn Wiltshire – Broward County Julie Ciucevich – Broward County Port Everglades Patrick Blair – Port of Tampa Bay Helga Sommer – Miami-Dade County Port Miami</p> <p>How are ports and maritime industry: (1) reducing carbon emissions, optimizing existing port capacity, handling larger vessels, and managing dredging projects sensitive to the environment; (2) achieving 2030 Sustainable Development Goals (SDGs); and (3) making their infrastructure resilient? <u>1 PDH</u></p>
<p>4:15pm – 5:15pm</p>	<p>Bay District Schools Land Development Analysis and School Planning <i>(FES Track)</i></p> <p>John Gilreath, GISP – JBPro, Inc.</p> <p>This presentation will cover the development of GIS school planning management tool to maintain, assess, and map Bay County (BDS) residential development and BDS school capacity and population data. Student population was assessed on a bi-annual basis from 2017 to 2023 to understand trend analysis related to Hurricane Michael and the Pandemic. The talk will lay a foundation for how Florida School Districts track growth in the state. <u>1 PDH</u></p>

Case Study: Creating a Path to Climate Resilience for Coastal Facilities *(ACEC Florida Track)*

Craig Wells, PE – *Freese and Nichols*

Storm surge from hurricane Irma flooded the Bethune Pointe WRF. After this event the City of Daytona Beach decided to conduct a vulnerability assessment and create a road to resilience for this critical piece of infrastructure. This presentation summarizes the steps taken to assess the vulnerability to climate change and the steps taken to create a road to resilience for this facility. The process used can be applied to any coastal facility. **1 PDH**

Professional Engineering Ethics, Risk and Liability with Technology *(Project Track)*

Ben Amaba, PhD, PE – *Analogy Solutions* | **Cate Richards** - *Sonatype*

Software has eaten the world. The rapid change in technological advancement is outpacing how to manage and/or protect public health, safety, and welfare from new emerging technologies, including artificial intelligence, cloud computing, and robotics underpinned by open-source software as the foundation. Software warrants how engineers should be accountable to protect the public's security and welfare. **1 PDH**

Saturday, July 27th

8:30am – 10:30am

Laws, Rules & Professional Ethics

Edwin Bayo

Licensees are required to obtain one (1) hour of continuing education focusing on Florida's professional engineering laws (F.S. 471) and rules (F.A.C. 61G15). Licensees are required to obtain one (1) hour of continuing education focusing on ethics for professional engineers. These courses are expected to cover the basic engineering canons. **2 PDHs**