



Delaware Section



Bridge Construction Presentations:

Rapid Bridge Replacement by Dr. Christopher Meehan & DelDOT Accelerated Bridge Construction (ABC) Techniques by Jason Hastings

Wednesday – April 4, 2018

Co-sponsored by ASME, ASCE, & ASME, ASCE Student Sections

Agenda:

- **5:30 Light Dinner and Networking**
 - **6:00 Rapid Bridge Replacement Presentation with Q&A by Dr. Christopher Meehan, UD Professor**
 - **7:00 DelDOT ABC Techniques Presentation with Q&A by Jason Hastings, DelDOT**
 - **8:00 Closing**
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- **Location: University of Delaware, Room 106 in Composites Manufacturing Science Lab (Delaware Ave & Academy St.)**
 - **Cost is \$10 for Professionals and Students are Free.**
 - **Two Professional Development Hours (PDH) will be award.**

RSVP to deasce.rsvp@gmail.com no later than Friday, March 30.

Due to room size there is a limited number of attendees, please RSVP to attend.

UD photography policy: "Photography and videography from this event may be used for promotional purposes. Notify the event photographer at the time the photograph is being taken if you prefer not to be photographed."

Rapid Bridge Replacement – Dr. Christopher Meehan

Title:

Construction and Performance Monitoring of a Geosynthetic Reinforced Soil Integrated Bridge System

Abstract:

The Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS) is a composite bridge structure built using GRS abutments and prefabricated bridge superstructure elements. This accelerated bridge construction technology has been developed and promoted by researchers and engineers from the United States of America's Federal Highway Administration (FHWA). GRS-IBS technology has proven itself useful for rapid, cost-effective bridge construction in other regions of the United States. Consequently, the Delaware Department of Transportation (DelDOT) constructed the first GRS-IBS in the state of Delaware (Br. 1-366) in 2013 to explore the effectiveness of this technology for use within their own bridge inventory.

This presentation provides an overview of the construction and monitoring process for this structure. Recorded performance data for the structure from the time of construction, live load testing, and over four years of in-service operation were collected using different types of instruments and analyzed.

Christopher Meehan Bio:

Christopher L. Meehan, Ph.D., P.E. is an associate professor of civil engineering at the University of Delaware, with a specialty focus in soil mechanics and geotechnical engineering. Dr. Meehan holds a B.S. in Civil Engineering from the University of New Hampshire, and M.S. and Ph.D. degrees in Civil Engineering (Geotechnical) from Virginia Tech. He has 16 years of experience in geotechnical engineering research, practice, and education. His areas of particular research and teaching focus include soil shear strength, slope stability, earth dam and levee engineering, foundation engineering, and ground improvement. He has published more than 60 refereed journal and conference papers, as well as numerous technical reports. He typically advises 5-10 graduate students at any given time, and oversees a large and diverse portfolio of research projects. He is the Director for the Delaware Center for Transportation, a Fellow of ASCE, a former holder of the honorary Bentley Systems Incorporated Chair of Civil Engineering at UD, and is a Fulbright Scholar. He is also an active member of the United States Universities Council on Geotechnical Education and Research and ASCE's Geo-Institute Committee on Embankments, Dams, and Slopes.

DelDOT ABC Techniques – Jason Hastings

Title:

Delaware's Accelerated Bridge Construction Experience

Abstract:

The Federal Highway Administration and state departments of transportation around the country have been working to improve customer service by delivering construction projects faster in recent years. A significant focus has been in accelerated bridge construction (ABC), which takes advantage of prefabricated bridge elements and systems to perform more construction activities off-site, thereby reducing the amount of time on-site construction activities are occurring. By using prefabricated elements, work zones are made safer for both workers and drivers, on-site inspection is reduced, and durability of the bridge elements is increased.

This presentation provides an overview of the ABC techniques that have been and will be utilized by the Delaware Department of Transportation, along with case studies, lessons learned, and cost data.

Jason Hastings Bio:

Jason Hastings, M.C.E., P.E. is the State Bridge Engineer for Delaware DOT. Jason has 16 years of experience in the public and private sectors, most of it managing and designing bridge replacement and rehabilitation projects in Delaware. He has played a key role in implementing the Accelerated Bridge Construction Program at DelDOT. Jason serves as the primary member for Delaware on the AASHTO Committee for Bridges and Structures and has been a member of that committee since 2011. He received a Bachelor of Civil Engineering degree in 2000 and a Master of Civil Engineering degree in 2001, both from the University of Delaware. Jason received a 2011 FHWA Partners in Quality Award, the 2012 DES Young Engineer of the Year award, and the 2016 UD Dept. of Civil and Env. Engineering Citation for Outstanding Achievement.

Publications include: Master's Thesis - "Bridge Rating Using In-Service Data"; "Reliability-Based Load and Resistance Factor Rating Using In-Service Data", Journal of Bridge Engineering, ASCE, v. 10, n. 5, September/October, pp. 530-543; and "Strengthening of a Steel Bridge Girder Using CFRP Plates", Journal of Bridge Engineering, ASCE, v. 6, n. 6, November/December, pp. 514-522.

Directions to Composites Manufacturing Science Lab at Delaware Ave & Academy Street and Parking:

For directions to CCM, please visit the [College of Engineering Map and Directions to UD Engineering Buildings](#) web page and click on the Center for Composites link at the top of the page. CCM is located at the southeast corner of the intersection of Delaware Avenue and Academy Street. The main entrance is on Academy Street and the reception area is on the second floor. If you have difficulty finding CCM, please call (302) 831-8149.

Parking:

- Lot #1 is located between Main Street and Delaware Avenue, behind the Galleria
- Lot #2 is located at the intersection of Main and Academy Street
- Lot #3 is located off of Main Street, between the Center and Choate Street.

