

# 2019 National ABC Conference – Pre-Conference Workshop

## W-04: ABC Steel Girder Bridge Case Studies

Wednesday, December 11, 2019 – 1:00 p.m. to 5:00 p.m.

### Introduction:

Steel bridges lend themselves well to accelerated bridge construction due to their reduced weight, which allows for smaller and less expensive construction equipment, and resistance to variable stresses during erection. Steel is commonly used for ABC construction and this session explores a few examples from around the country, including a lateral slide on the New Pennsylvania Turnpike, a cost-effective press-brake-formed steel tub project with prefabricated decks in West Virginia, a 245-foot unbraced network arch in Michigan, and a compilation of several bridge projects from pre-engineered bridge manufacturers.

### Workshop Organizer and Moderator:

Jeff Carlson, P.E., National Steel Bridge Alliance (NSBA)

### Program:

1:00 p.m.	Welcome and Introduction to Workshop	Moderator – Jeff Carlson, P.E.
1:05 p.m.	National Bridge Price Study	Mike Digregorio, P.E.
1:35 p.m.	Accelerated Construction of Unbraced Network Arch Bridge	Mike LaViolette, P.E., PEng
2:25 p.m.	The PA Turnpike Launches into ABC - WB-224B Lateral Slide	Brad Updegrave, P.E., and Shawn Tunstall, P.E.
3:05 p.m.	<i>Break</i>	
3:30 p.m.	West Virginia's First Modular Press-Brake-Formed Steel Tub Girder Bridge	Ahmed Mongi, P.E., and Gregory Michaelson, Ph.D., P.E.
4:30 p.m.	Pre-Fabricated and ABC Steel Bridges	Michael Barker, Ph.D., P.E.
5:00 p.m.	Adjourn	

## Speakers & Bios, W-04: ABC Steel Girder Bridge Case Studies

### **Jeff Carlson**, carlson@steelbridges.org (Organizer & Moderator)

Jeff is a director of market development for the National Steel Bridge Alliance. He represents the steel bridge fabrication industry on matters of steel bridge fabrication and construction. Jeff's role with NSBA is to provide technical assistance, education tools, and resources pertaining to steel. Additionally Jeff has been a volunteer for the non-profit philanthropic organization Bridges to Prosperity for more than four years where he has led two separate teams of volunteers to Panama.

### **Michael G. Barker, Ph.D., P.E.**, barker@uwyo.edu

Michael received his BS and MS in Civil Engineering from Purdue University and his PhD from the University of Minnesota. He was a Civil Engineering faculty at the University of Missouri-Columbia for 13 years before joining Civil & Architectural Engineering at the University of Wyoming in 2003. Michael is a member of the AISI Bridge Task Force and is a Bridge Technology Center representative to the Short Span Steel Bridge Alliance. His primary research pertains to steel bridges, experimental testing, bridge design specifications, bridge field testing, high performance steel and reliability analyses of structures.

### **Mike Digregorio, P.E.**, michael.digregorio@hdrinc.com

Mike is the national cost estimating lead at HDR Engineering specializing in cost estimating, cost engineering and construction scheduling services for large transportation, transit and water resources programs. In this role, he typically leads the cost estimating efforts throughout various phases of a projects development lifecycle; from parametric estimating in support of feasibility analysis or budgetary control, to bottoms up contractor style estimating in support of construction.

### **Mike LaViolette, P.E., PEng**, mike.laviolette@hdrinc.com

Mike is a Professional Associate and National Bridge Practice Leader with HDR. He has over 27 years of experience in complex bridge design and construction for US and international projects. Mike was the lead bridge designer for the I-94 2nd Avenue Bridge. His previous projects include senior leadership roles for the new Tappan Zee Bridge and for the PennDOT Rapid Bridge Replacement Program. Mike earned his Bachelor's and Master's degrees from Iowa State University.

### **Gregory K. Michaelson, Ph.D., P.E.**, michaelson@marshall.edu

Greg is an assistant professor in the Weisberg Division of Engineering at Marshall University. He completed his Ph.D. at West Virginia University in 2014 and is a registered professional engineer in West Virginia. Greg's research interests are focused in the area of structural engineering and include efficiency and economics of steel bridge design, modular/accelerated bridge construction, and experimental investigation of structural systems.

### **Ahmed Mongi, P.E.**, Ahmed.N.Mongi@wv.gov

Ahmed is a quality control and quality assurance unit leader at the West Virginia Department of Transportation, Division of Highways. He completed his B.S. and M.S. at West Virginia University. Ahmed is a registered professional engineer in West Virginia and has 28 years of experience at the WVDOH, working in various highway and bridge construction projects.

### **Shawn Tunstall, P.E.**, shawn@tunstallengineering.pro

Shawn received his Bachelor's degree from the University of Pittsburgh at Johnstown and Master's degree from Carnegie Mellon University. He has over 20 years of experience in bridge design working for consultants. He is currently President of Tunstall Engineering Group. He provides engineering services to contractors such as bridge erection and demolition procedures and Accelerated Bridge Construction engineering support.

### **Brad Updegrave, P.E.**, bupdegra@paturndpike.com

Brad graduated from the University of Pittsburgh at Johnstown in 1996. He worked 8 years for a consultant doing bridge inspection and design. He started with the Commission in 2004 as a Project Manager in the bridge department doing design projects. Brad currently serves as the Bridge and Tunnel Maintenance Engineer (since 2014), overseeing design, maintenance and inspection contracts.