

2022

INTERNATIONAL ACCELERATED BRIDGE CONSTRUCTION CONFERENCE: INCLUDING ADVANCED BRIDGE TECHNOLOGIES

December 7th-9th, 2022

Workshops December 7th

Hyatt Regency Miami
Miami, Florida



PRE-CONFERENCE WORKSHOPS

Wednesday
December 7, 2022

MORNING

8:00 AM TO 12:00 PM

W-01: Steel Bridge Design Workshop: Design of Straight and Curved Girder Steel Bridges, Using Latest edition of *AASHTO LRFD Bridge Design Specifications*

Room: Tuttle Room

Workshop Organizer: Atorod Azizinamini

The objective of this workshop is to familiarize the attendees with background and design provisions related to design of straight and curved steel bridges, provide best fabrication practices and provide them with available resources that can assist them with economical design of steel bridges, especially when it comes to using ABC.

Workshop Instructors:

Atorod Azizinamini, Ph.D., PE, Ronnie Medlock, PE, Michael Barker, Vin Bartucca

1 Analysis (Atorod Azizinamini, ABC-UTC)

This portion of the workshop will provide a brief summary of *AASHTO LRFD Bridge Design Specifications* related to:

- a. Loads and load combinations
- b. Distributions factors
- c. Analysis tools and approaches to obtain shear and moment envelope moment diagrams.

W-02: Composites Bridge Design Workshop: Design of Fiber-Reinforced Polymer (FRP) Composites Bridges Using *AASHTO* and Other Specifications

Room: Brickle Room

Workshop Organizer: John Busel, American Composites Manufacturers Association (ACMA)

Fiber-reinforced polymer (FRP) composites are a proven innovative and durable material that has been used in more than 500 bridges in North America for over 25 years. Because they are lightweight and able to be prefabricated, composites are faster to install, have reduced assembly and installation time resulting in lower costs for new construction as well as retrofitting existing structures, and require minimal disruption during repairs and upgrades to bridges that are already in service.

Workshop Instructors:

John Busel, Gregg Blaszak, PE, Bill Davids, Ph.D., PE, Anthony Diba, Ronald Grefhorst, Scott Reeve, Ken Sweeney, PE, Dustin Troutman

1- Design of FRP Bridge Tub Girders, Using *AASHTO LRFD Bridge Design Specifications* (Bill Davids, UMaine, Ken Sweeney, ENV-SP, Anthony Diba, AIT Bridges) (90 minutes)

The objective of this section is to familiarize the attendees with the development, design, and construction of FRP Tub Girder Bridges. Best fabrication practices and available resources to assist with economical design of FRP Bridges in the context of accelerated bridge construction (ABC) technology are discussed.

2- Design (Atorod Azizinamini, ABC-UTC)

The following topics related to steel bridges and included in the *AASHTO LRFD Bridge Design Specifications* will be covered, by briefly explaining their background, intention and use. Their use will be demonstrated using short examples. These short examples will be part of a complete design of a multi-span steel bridge, a copy of which will be provided to attendees.

- a. Constructability limit state
- b. Service limit state
- c. Strength limit state
 - i. Positive section design considerations
 - ii. Negative section design considerations
- d. Estimating fl term
- e. Role of cross frames in steel bridges
- f. Brief overview of bridge deck design using empirical approach as stated in Chapter 9 of *AASHTO LRFD Bridge Design Specifications*
- g. Design for shear
- h. Fatigue and fracture considerations
- i. Stability during construction
- j. Introduction to steel connection design with emphasis on steel gusset plate rating in existing steel truss bridges

2- Lightweight, Prefabricated Cantilever Sidewalks for Shared Use Paths on Vehicle Bridges (Scott Reeve; Dustin Troutman; Gregg Blaszk, Creative Composites Group) (60 minutes)

Cantilever sidewalks can be quickly installed on vehicle bridges to provide shared-use paths to accommodate recreational and commuter users. These sidewalks consist of lightweight, prefabricated FRP structural panels that can be quickly installed on beam supports attached to the vehicle bridge. Case study summaries will be shown for the different types of decking and attachment designs used on previous sidewalks. Design details and calculations will be explained for one of the larger sidewalks that was part of DOT vehicle bridge rehabilitation projects for the Higgins Ave. Bridge, Missoula, MT. The 14-ft-wide sidewalk totals 448 ft in length over three bridge spans. The deck attached to both I-beam stringers and the concrete superstructure. The exterior railing attached to the exterior FRP curb.

While stepping through the calculations and drawings, any items that are specific to FRP will be highlighted. This will alert drawing reviewers to FRP pertinent details to look for when using FRP decking. A secondary case study will show the use of FRP floor beams to further reduce the dead load.

3- Best Practices in Fabrication (Ronnie Medlock, High Steel) (30 minutes)

This portion of the workshop will provide the attendees with recommendations for achieving the best fabrication schedule while optimizing fabrication cost.

4- Available free analysis, design, and other resources (Michael Barker, SSSBA; Vin Bartucca, NSBA) (30 minutes)

This portion of the workshop will provide the attendees with a list of major tools and resources, such as educational courses through SSSBA and NSBA, available publications, software and other help, that are available for design and construction of economical steel bridges, with emphasis on the use of ABC. These materials will be provided, free, as part of attending the workshop.

3Design & Engineering Methodology for InfraCore® FRP Vehicular Bridges (Ronald Grefhorst, Design Lead, FiberCore Europe) (60 minutes)

Fiber Reinforced Polymer (FRP) bridges are gaining traction for infrastructure applications for their promise of having a high specific tensile strength and high resistance to adverse environmental influences such as (salt) water and corrosion.

InfraCore® bridges are developed with precisely these principles in mind. InfraCore bridges are multibeam structures in which the potential Achilles' heel of FRP (the effects of matrix failure and damage growth) are limited and inconsequential for the performance and safety of the bridge. InfraCore incorporates the lessons learned from previous applications of FRP while still being structurally efficient. To be cost-effective and to ensure short lead times, the design and production processes are highly standardized and supported by specialized, easy to use tooling.

4 Overview of FRP Bridge Application Case Histories (John Busel) (30 minutes)

PRE-CONFERENCE WORKSHOPS

Wednesday
December 7, 2022

AFTERNOON

1:00 P.M. TO 5:00 P.M.

W-03: Prestressed Concrete Bridge Design

Workshop: Design of Prestressed Concrete Bridges, Using Latest Edition of *AASHTO LRFD Bridge Design Specifications*

Room: Tuttle Room

Workshop Organizer: Bijan Khaleghi

The objective of this workshop is to familiarize the attendees with background and design provisions related to design of prestressed concrete bridges, spliced-girder bridges, and segmental concrete bridges, and provide best fabrication practices and available resources that can assist them with economical design of prestressed concrete bridges, when it comes to using accelerated bridge construction (ABC) technology.

Workshop Instructors:

Bijan Khaleghi, Ph.D., PE, SE, Gregg Freeby, PE, William Nickas, PE

The workshop will be taught, jointly with academia and industry, to deliver the material in the most practical and yet informative manner. The workshop material is developed for bridge design engineers who would like to have a deeper understanding of design provisions that are included in the latest version of the *AASHTO LRFD Bridge Design Specifications* related to prestressed concrete bridges. Further, the workshop is aimed at providing the attendees with the latest advances in design and construction of prestressed concrete bridges. The workshop will elaborate of using prestressed concrete in ABC projects.

W-04: Non-Propriety ABC-UTC UHPC Workshop: Mix Design, Material Properties, and Applications

Room: Brickle Room

Workshop Organizer: Royce Floyd

The objective of this workshop is to familiarize the attendees with locally developed non-proprietary ultra-high performance concrete (UHPC) as a construction material. This will include discussion of mix design development material properties, structural behavior, and applications, application, especially related to ABC.

Workshop Instructors:

Royce Floyd, Ph.D., PE, David Garber, Ph.D., PE, Mohamed Moustafa, Ph.D., PE

The workshop will be taught by researchers affiliated with the ABC-UTC, but tailored to be useful for a broad audience. The workshop material is developed for state DOT officials, bridge design engineers, and contractors who would like to have an introduction to the possibilities available for non-proprietary ABC-UTC UHPC, as well as those who wish to have a deeper understanding of how to develop a mix design, use UHPC in structural design, or apply non-proprietary UHPC in projects the field. Finally, the workshop is aimed at providing the attendees with the state of the art in UHPC applications for ABC and non-proprietary UHPC research from across the United States.

1 Analysis and Design (Bijan Khaleghi) (2 hours)

This portion of the workshop will provide a brief summary of AASHTO LRFD Bridge Design Specifications related to prestressed concrete bridge design.

- Basic philosophy of prestressed concrete
- Prestress concrete materials and properties
- Time-dependent properties and prestress losses
- Transfer and development length of prestressing strands
- Camber and deflection of prestressed concrete members
- Flexural design of prestressed concrete members
- Shear design of prestressed concrete members
- Post-tensioning anchorage and disturbed zones
- Seismic design of precast concrete members and connections
- Design of spliced girder bridge
- Complete prestressed concrete bridge design example

2 Fabrication of Prestressed Concrete Bridges (William Nickas, PCI) (30 minutes)

This portion of the workshop will provide the attendees with recommendations for achieving the best fabrication schedule while optimizing fabrication cost, and ABC considerations.

3 Segmental Bridge Design and Construction (Gregg Freeby, ASBI) (30 minutes)

This portion of the workshop will provide the attendees with recommendations for segmental bridge design, fabrication, and construction while optimizing project cost, and ABC considerations.

4 Available bridge analysis, design, and other resources (20 minutes)

This portion of the workshop will provide the attendees with a list of major tools and resources, such as educational courses, available publications, software, etc., that are available for design and construction of economical prestressed concrete and segmental bridges. These materials will be provided, free, as part of attending the workshop.

5 Q/A and open discussions (10 minutes)

1 Introduction and Overview of ABC-UTC initiative to develop non-proprietary ABC-UTC UHPC (Atorod Azizinamini, FIU)

Development of Non-Proprietary UHPC mix, was identified as number one research priority for State DOT's in 2017. As a result, a coordinated and comprehensive body of work was undertaken by ABC-UTC and was coordinated by the Director of ABC-UTC to address the request. Significant amount of work has been carried out by ABC-UTC for application of UHPC which is covered elsewhere.

2 Introduction and Mix Development (Royce Floyd, OU) (30 minutes)

This portion of the workshop will provide an introduction to UHPC and description of mix design development using the ABC-UTC mix design as an example. This discussion will include considerations for constituent material selection and mix proportioning methods.

3 Mixing, Placement, and Curing (David Garber, FIU) (30 minutes)

Requirements for mixers used to mix ABC-UTC UHPC, mixing methods, placement methods and considerations, and curing methods and effects will be discussed.

4 Material Properties (Royce Floyd, OU) (45 minutes)

Material and durability properties of the non-proprietary ABC-UTC UHPC mixes examined by ABC-UTC researchers will be discussed. This will

include compressive strength, flexural strength, modulus of elasticity, creep, shrinkage, bond behavior with reinforcement and concrete, freeze-thaw, and corrosion behavior, and will include effects of changing fiber type and content.

5 Considerations for Local Materials (David Garber, FIU) (30 minutes)

The experience of ABC-UTC researchers examining the same non-proprietary mix design at different locations and different constituent materials will be discussed. This discussion will include considerations.

6 Applications for ABC (Mohamed Moustafa, UNR) (30 minutes)

Proven and potential structural applications of non-proprietary UHPC will be discussed. This will include results of laboratory testing on connections and repairs, field implementations, and potential issues related to implementation of non-proprietary ABC-UTC UHPC.

7 Testing Methods and Quality Control (Royce Floyd, OU) (30 minutes)

Methods used for material property and quality control testing will be discussed in the context of modifications to standard methods required for UHPC.

8 Summary of UHPC Work Across the Country (30 minutes)

A summary of research sponsored by various state DOTs and federal agencies on non-proprietary UHPC will be provided. This will include example mix designs and research results from the literature and known implementation projects using non-proprietary UHPC.

MORNING - AUDITORIUM

7:00-8:00 AM	Complimentary Breakfast - Exhibit Hall	10:05- 10:35 AM	Coffee Break - Exhibit Hall
8:00-9:00 AM	Welcome Atorod Azizinamini, Director, ABC-UTC Kenneth A. Jessell, President, Florida International University Firas Sheikh Ibrahim, Director, OST-R, U.S. Department of Transportation Cheryl Hersh Simmons, Chair, ABC-UTC Awards Committee	11:00-11:25 AM	Keynote Talk - 3D Printing: It is already here Atorod Azizinamini, Director, ABC-UTC
9:00-9:30 AM	Keynote Address - The new funding programs dedicated to highway bridges in the Bipartisan Infrastructure Law Joseph (Joey) L. Hartmann, FHWA	11:30-11:55 AM	Keynote Talk - Thoughts on Future of Bridge Engineering Ted Zoli, HNTB
9:30-9:45 AM	Recognition of Travel Scholarship Contributors Mike LaViolette, HDR, Inc.	11:55 AM-12:20 PM	Keynote Talk - UHPC Bridge Design Guidance Benjamin A. Graybeal, FHWA
9:50-10:05 AM	Award Presentation Cheryl Hersh Simmons, Chair, ABC-UTC Awards Committee	12:20- 1:50 PM	Lunch & Cash Bar at Exhibit Hall and Poster Display

AFTERNOON - BREAKOUT SESSIONS

ROOM	BRICKELL	ORCHID	HIBISCUS	JASMINE	TUTTLE
	SESSION 1 CASE STUDIES	SESSION 2 TOOLS AND SOLUTIONS	SESSION 3 RESEARCH	SESSION 4 REPAIR AND REPLACEMENT	SESSION 5 SUBSTRUCTURE
MODERATOR	Jamal Elkaissi FHWA	Bruce Johnson Otak, Inc.	Bijan Khaleghi Washington State Dept. of Transportation	Kathy Crowell Formerly New Mexico Dept. of Transportation	Armin Mehrabi Florida International University
	22-001	22-004	22-007	22-010	22-013
1:50-2:20 PM	Middlebury Bridge and Rail Project *Aaron Guyette - VHB	Stay-In-Place-Fascia-Forms (SIPFF) - the fastest & safest way to construct bridge overhangs *Gary Dinmore - Dinmore Engineering PLLC	Risk-Based, Spatial, Multi-Criteria Analysis for Prioritizing Accelerated Bridge Construction Activities **Nasim Mohamadiazar - Florida International University Ali Ebrahimiyan - Florida International University	Replacement of the Crystal Lake Road Bridge in Gilmanton, NH *Katelyn Welch - Hoyle, Tanner & Associates, Inc. Josif Bicja - Hoyle, Tanner & Associates, Inc.	Accelerated Retrofit of Critical Bridge Foundation *Mohab Hussein - New Jersey Department of Transportation
	22-002	22-005	22-008	22-011	22-014
2:20-2:50 PM	California High Speed Rail Precast Tub Girders Design Approach *Velvet Bridges - Jacobs Engineering	Accelerated Bridge Deck Preservation using Hydrodemolition and Very Early Strength LMC Overlays *Edward Liberati - Hydro-Technologies/Modified Concrete Suppliers	Development of Inspection-data Based Bodel and its Process for Pre-assembly of Prefabricated Bridge *Gitae Roh - Chung-Ang University Cuong Nguyen - Chung-Ang University Changsu Shim - Chung-Ang University	Construction and Span Replacement for CSX Bridge over Potomac River *Matthew Struempf - OCCI John Boschert - Genesis Structures	Substructure Re-Use on Accelerated Bridge Replacement Projects Saving the Environment while Minimizing Cost, Schedule and Traffic Disruption: Theory and Case Study *David Whitmore - Vector Corrosion Technologies
	22-003	22-006	22-009	22-012	22-015
2:50-3:20 PM	Blackhall Road Over Rum Creek - Modular Deck Beams Constructed using AASHTO Bulb-Teegirders *James Aitken - CHA Consulting, Inc. Kevin Kahle - CHA Consulting, Inc. Michael Culmo - CHA Consulting, Inc.	Development of Prefabricated Barrier System utilizing UHPC Connection for ABC Applications *Abbas Khodayari - Florida International University	Investigation of live load moment and tension force in bridge deck slab overhang due to transverse vehicle impact *Khaled Sennah - Ryerson University Chinnu Shaja - Ryerson University	Joint Base Lewis-McChord Emergency Fish Passage Culvert Replacement *Michael Carfagna - Contech Engineered Solutions LLC Joe Eberhardt - KPFF Consulting Engineers Justin Vena - Brice Civil Constructors	Turn-Key Disc Bearings for use in Precast Concrete Segmental Bridge Construction *Zachary Searer - R.J. Watson, Inc.
3:20-3:50 PM	COFFEE BREAK - EXHIBIT HALL				

AFTERNOON - BREAKOUT SESSIONS

ROOM	BRICKELL	ORCHID	HIBISCUS	JASMINE	TUTTLE
	SESSION 1 CASE STUDIES	SESSION 2 TOOL AND SOLUTIONS	SESSION 3 RESEARCH	SESSION 4 REPAIR AND REPLACEMENT	SESSION 5 SUBSTRUCTURE
MODERATOR	Jamal Elkaissi FHWA	Bruce Johnson Otak, Inc.	Bijan Khaleghi Washington State Dept. of Transportation	Kathy Crowell Formerly New Mexico Dept. of Transportation	Armin Mehrabi Florida International University
	22-016	22-019	22-022	22-025	22-028
3:50-4:20 PM	Use of ASTM A1035-CS Corrosion Resistant and High Strength Reinforcement in the New Nice Middleton Bridge Project for Sustainable Bridge Construction *Hans Geber - Commercial Metals Company	Critical Lift & Demolition of Historic Rogers Bridge over the Chattahoochee River *Amrithraj Anand - Heath and Lineback Engineers, Inc. Masood Shabazaz - Heath and Lineback Engineers, Inc.	Combination of precast bridge girders and deck slab elements for accelerated bridge construction *Franz Untermarzonner - TU Wein Michael Rath - TU Wein Johann Kollegger - TU Wein	Modular Accelerated Deck Replacement of the 89 Year Old Liberty Bridge *Nick Burdette - HDR Mike Riley - Bridge Grid Flooring Manufacturers Association	Guide for Selection of Substructure for ABC Projects *Armin Mehrabi - Florida International University Musharraf Zaman - University of Oklahoma Seyed Saman Khedmatgozar Dolati - Florida International University
	22-017	22-020	22-023	22-026	22-029
4:20-4:50 PM	Inverse Application of Utah's Wide Flange BT Girders *Clint Krajnik - RS&H, Inc.	Is Nonlinear Analysis Becoming a Standard Tool for Design of Concrete Bridges? *Jan Cervenka - Cervenka Consultings.r.o. Jiri Rymes - Cervenka Consultings.r.o.	Exploring Fiber-Reinforced Polymer Concrete for Accelerated Bridge Construction Applications *Carolyn Donohoe - University of Washington Travis Thonstad - University of Washington	ABC Construction of The Dalles (Columbia River) Bridge *Nicholas Brown - Otak, Inc. Scott Nettleton - Otak, Inc.	Major highway bridge rehabilitation projects in France & Switzerland using UHPC *Laurent Boiron - UHPC Solutions Daniel Hardegger - UHPC Solutions Peter Siebert - UHPC Solutions
	22-018	22-021	22-024	22-027	22-030
4:50-5:20 PM	Rapid Rehabilitation of the I-285 Bridge Over Snapfinger Road *Blake Liberati - Hydro-Technologies/Modified Concrete Suppliers	The FHWA Lightweight Concrete Bridge Design Primer - A New Resource for Bridge Designers *Reid Castrodale - Castrodale Engineering Consultants, PC Andrew Foden - WSP	Non-Destructive Testing of Reinforced-Concrete Bridge Deck Slabs with Ground-Coupled Ground Penetrating Radar System *Wael Zatar - Marshall University Hien Nghiem - Marshall University Research Corporation Hai Nguyen - Marshall University	Bascul Bridge Lessons Learned - the Chicago Department of Transportation's ABC Method for replacing bridges along the Chicago River *Eric Ozimok - AECOM Luis Benitez - Chicago Department of Transportation	Bridge Erection inside of SR 836 corridor *Christopher Guido - RS&H, Inc. Dhaval Gandhi - Archer Western De Moya JV
6:00-7:30 PM	RECEPTION IN THE EXHIBIT HALL				

MORNING

MORNING - BREAKOUT SESSIONS

7:30 - 8:20AM - COMPLIMENTARY BREAKFAST - EXHIBIT HALL

ROOM	JASMINE	BRICKELL	TUTTLE	ORCHID	HIBISCUS
	SESSION 6 DOT EXPERIENCE	SESSION 7 UHPC - CASE STUDY	SESSION 8 INTERNATIONAL EXPERIENCE	SESSION 9 CONTRACTING & DECISION MAKING	SESSION 10 SEISMIC
MODERATOR	Cheryl Hersh Simmons Utah Dept. of Transportation	Sandra Larson Formerly Iowa Dept. of Transportation	Michael P. Culmo CHA Consulting, Inc.	Ted A. Kniazewycz Tennessee Dept. of Transportation	Reid W. Castrodale Castrodale Engineering Consultants, PC
	22-031	22-034	22-037	22-040	22-042
8:30-9:00 AM	Design and Construction of Prefabricated Bridge Elements for the Replacement of Bridges 1-676 and 1-677 *Nicholas Dean - Delaware Department of Transportation Scott Walls - Delaware Department of Transportation	UHPC Piles for a detour bridge in Ontario, Canada - Challenges & Lessons Learned *Philip Loh - Facca Incorporated	Transportation Infrastructure Mega Project - Upgrading the 4th Ring Transportation Corridor in Zhengzhou, Henan, China *Gernot Komar - Sun Engineering & Technology International, Inc. Junling Sun - Sun Engineering Consultants International, Inc. Wenbin Lei - Sun Engineering Consultants International, Inc.	Accelerated Construction Techniques Implemented on Van Wyck Expressway Capacity & Access Improvements to John F. Kennedy Airport Design Build Project Contract 1 *John McSweeney - German-Pedersen, Inc.	Design and Detailing of ABC Bridge with Earthquake Resiliency Consideration *Bijan Khaleghi - Washington State Department of Transportation Khashayar Nikzad - Trantech Engineering Consultants
	22-032	22-035	22-038	22-041	22-044
9:00-9:30 AM	Design, construction, and evaluation of UHPC Bridge Deck Overlays for NJDOT *Samer Rabie - New Jersey Department of Transportation Jess Mendenhall - New Jersey Department of Transportation Jordy Padilla - WSP	Field Implementation of UHPC Beam End Repair on Steel Girder Bridge in East Hartford, CT *Alexandra Hain - University of Connecticut Arash Esmaili Zoghi - University of Connecticut Andrew Cardinalli - Connecticut Department of Transportation	Pinecrest Road Rigid Frame Accelerated Bridge Construction using Lateral Slide Technology *Adriano Dirienzo - WSP Scott Linde - WSP Ali El-husseini - WSP	Design-Build Delivery - Using ATC's to Enable ABC *Evan Lowell - TranSystems Corporation	Evaluation of Test Methods for Mechanical Rebar Couplers for Seismic Zones *Scott Muzenski - FHWA
	22-033	22-036	22-039	22-042	22-045
9:30-10:00 AM	Acceler-8 I-90 Bridge Replacement Project *Preston Huckabee - Gill Engineering Fedorah Berlus - Gill Engineering	Stage 1 - Delaware Memorial Bridge Deck Rehabilitation - The Largest UHPC Overlay Preservation Project in the US *Peter Seibert - UHPC Solutions North America Gil Brindley - UHPC Solutions North America Jerry Reece - WALOCivil	ABC on the Lunar Surface *Nerma Caluk - Florida International University	Incorporating Sustainability for Bridge Decision Making *Michael Barker - University of Wyoming	Evaluation of embedment length for external socket connections for the seismic design of bridges *Julio Samayoa Avalos - North Carolina State University Mervyn Kowalsky - North Carolina State University Giorgio Proestos - North Carolina State University
10:00-10:30 AM	COFFEE BREAK				

MORNING - BREAKOUT SESSIONS

ROOM	JASMINE	BRICKELL	TUTTLE	ORCHID	HIBISCUS
	SESSION 6 DOT EXPERIENCE	SESSION 7 UHPC - CASE STUDY	SESSION 8 INTERNATIONAL EXPERIENCE	SESSION 9 CONTRACTING & DECISION MAKING	SESSION 10 SEISMIC
MODERATOR	Cheryl Hersh Simmons Utah Dept. of Transportation	Sandra Larson Formerly Iowa Dept. of Transportation	Michael P. Culmo CHA Consulting, Inc.	Ted A. Kniazewycz Tennessee Dept. of Transportation	Reid W. Castrodale Castrodale Engineering Consultants, PC
10:30-11:00 AM	22-046 New Hampshire's First Slide-In Bridge Construction (SIBC) Project *Jennifer Reczek - New Hampshire Department of Transportation James Bowles - New Hampshire Department of Transportation Samuel White - McFarland Johnson, Inc.	22-049 Emergency Culvert Replacement *Jordy Padilla - WSP Steve Esposito - WSP	22-052 High Early Strength Concrete for Rapid Bridge Deck Overlays *Bruce Johnson - Otak, Inc.	22-055 Needs Assessment of a Formal Project Management Plan (PMP) for ABC Projects *Matthew Reyes - University of Oklahoma Somik Ghosh - University of Oklahoma Thandolwenkosi Mpofu - University of Oklahoma	22-058 Design of SR-43 Concrete Network Tied Arch Bridge for California High Speed Rail Project *Marcos Loizias - Jacobs Engineering Haldi Al-Khateeb - Jacobs Engineering Arjuna Ranasinghe - Jacobs Engineering
11:00-11:30 AM	22-040 40 Day Bridge Replacement, A-1 Mountain TI *Tad Niemyjski - Arizona Department of Transportation Lance Briley - Arizona Department of Transportation Ivan Tullao - Arizona Department of Transportation	22-050 ABC Replacement of Five Multispan Texas Bridges Reopens Each Bridge within 11 Days using UHPC Closure Pours *Hannah Tzabari - SMARTUP/National Cement Company Robert Taylor - SMARTUP/Taylor Consulting	22-053 Accelerated construction of deck slabs for steel-concrete-composite bridges *Johann Kollegger - TU Wien Franz Untermaier - TU Wien Michael Rath - TU Wien	22-056 Replacing a Major Gateway into Downtown Nashville *Adam Davidson - Gresham Smith Ted Kniazewycz - Tennessee Department of Transportation Donald McCrary - Gresham Smith	22-059 Design of columns meeting seismic performances for ABC: experimental investigations *Simon Bourget - Polytechnique Montreal Gabriel Lewis - Polytechnique Montreal Bruno Massicotte - Polytechnique Montreal
11:30 AM-NOON	22-048 ABC of Unbraced Network Arch Using SPMTs - Construction Update *Mike LaViolette - HDR, Inc. Matt Longfield - HDR, Inc. Brad Wagner - Michigan Department of Transportation	22-051 Replacement of USMC PFC Michael Angiulli Memorial Bridge Using Accelerated Bridge Construction Methods *Daniel Estep - GPI James Simpson - GPI Anthony Carovillano - GPI	22-054 M-35 over the Carp River Structure Replacement *Janelle Muswach - AECOM Clint Mayoral - Michigan Department of Transportation Charles Parmerlee - AECOM	22-057 I-24 Bridge Replacements CM/GC project *Kevin McAlister - Barge Design Solutions Scott McKinney - Bell and Associates Construction	22-059 Simple Is Superior, Even On Small, Rural Projects *Paul Froede - Alabama Department of Transportation
NOON-1:00 PM	CASH BAR LUNCH - EXHIBIT HALL				

AFTERNOON

AFTERNOON - BREAKOUT SESSIONS

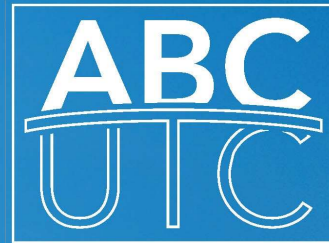
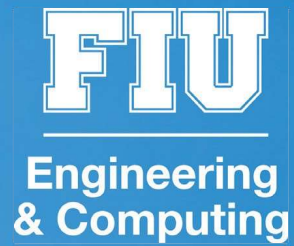
ROOM	JASMINE	BRICKELL	TUTTLE	ORCHID	HIBISCUS
	SESSION 11 UHPC RESEARCH	SESSION 12 NEW SYSTEMS	SESSION 13 INNOVATIVE MATERIALS	SESSION 14 EMERGING TECHNOLOGIES AND SPECIFICATIONS	SESSION 15 INNOVATION
MODERATOR	Paul E. Froede Alabama Dept. of Transportation	Sandra Larson Formerly Iowa Dept. of Transportation	Richard Dunne Greenman-Pedersen, Inc.	Jamal Elkaissi FHWA	Nicholas Dean Delaware Dept. of Transportation
1:00-1:30 PM	<div>22-061</div> <p>Post-tensioned Alternative for Design of the Belvidere UHPC Decked I-Beam Bridge in Nebraska</p> <p>*Maher Tadros - e.construct.USA, LLC Fouad Jaber - Nebraska Department of Transportation Ross Barron - Nebraska Department of Transportation</p>	<div>22-065</div> <p>Extending Span Length of Folded Plate Steel Girder (FPSG) system to 105ft</p> <p>*Atorod Azizinamini - Florida International University</p>	<div>22-069</div> <p>Seismic Fragility Assessment of Bridge Pier Incorporating SMA and ECC Advanced Materials in the Plastic Hinge Region</p> <p>*Mustafa Cetinkaya - University of California Ertugrul Taciroglu - University of California Jian Zhang - University of California</p>	<div>22-073</div> <p>Simulation of 3D Printed Concrete Structures</p> <p>*Jiri Rymes - Cervenka Consulting s.r.o. Filip Smejkal - Cervenka Consulting s.r.o. Jan Cervenka - Cervenka Consultings.r.o</p>	<div>22-077</div> <p>Innovation, Teamwork and a 4 Day Closure - Bunker Creek Bridge</p> <p>*Adam Stockin - WSP USA, Inc. Nevin Gomez - WSP USA, Inc. Tim McLaughlin - SPS New England, Inc.</p>
1:30-2:00 PM	<div>22-062</div> <p>Noncontact lap splices of bars in tension in UHPFRC for field cast connections between precast elements</p> <p>*Bruno Massicotte - Polytechnique Montreal Camille Renaud-Laprise - Polytechnique Montreal Fabien Lagier - Polytechnique Montreal</p>	<div>22-066</div> <p>Wellsburg Bridge - Construction Methods and Float In</p> <p>*Charbel Raad - McNary Bergeron and Associates Timothy Davis - McNary Bergeron and Associates</p>	<div>22-070</div> <p>Dual Grade Bridge Structures</p> <p>*Hormoz Seradj - Seradj Engineering</p>	<div>22-074</div> <p>ABC Components of the Commonwealth Ave Superstructure Replacement Project</p> <p>*Charles Swanson - HDR, Inc.</p>	<div>22-078</div> <p>Alternative Materials and Configurations for Prestressed-precast Concrete Pile Splice Connection</p> <p>*Armin Mehrabi - Florida International University Seyed Saman Khedmatgozar Dolati - Florida International University</p>
2:00-2:30 PM	<div>22-063</div> <p>Partial Depth UHPC Deck Panels for Bridges in Aggressive Seawater Environments</p> <p>*Maher Tadros - e.construct.USA, LLC Mostafa Abo El-Khier - e.construct.USA, LLC Adam Sevenker - e.construct.USA, LLC</p>	<div>22-067</div> <p>McKinley Overpass - Innovative Steel Tied Arch</p> <p>*Jose Calisto Da Silva - BCA, Inc. Ben Chan - BCA, Inc. Mahsa Farzad - BCA, Inc.</p>	<div>22-071</div> <p>Case Studies for Bridges Constructed with Lightweight Concrete</p> <p>*Reid Castrodale - Castrodale Engineering Consultants, PC Andrew Foden - WSP</p>	<div>22-075</div> <p>The PCI Northeast Bridge Substructure Guide - Part A</p> <p>*Michael P. Culmo - CHA Consulting, Inc.</p>	<div>22-079</div> <p>The Challenging 35-Day Complete Bridge Reconstruction with a Press-Brake-Formed Tub Girder Superstructure</p> <p>*Guy Nelson - Valmont Industries, Inc. Jeff Simkins - Valmont Industries, Inc.</p>
2:30-3:00 PM	<div>22-064</div> <p>Retrofit of Timber Piles using UHPC</p> <p>*Atorod Azizinamini - Florida International University</p>	<div>22-068</div> <p>The InQuik Bridge System - Technical Presentation - The 2021 Most innovative ABC Bridge System developed Outside the USA</p> <p>*Logan Mullaney - InQuik, Inc.</p>	<div>22-072</div> <p>I-40 Hernando de Soto Emergency Repair: Critical Actions for a Critical Find</p> <p>*Aaron Stover - Michael Baker International Ted Kniazewycz - Tennessee Department of Transportation</p>	<div>22-076</div> <p>The PCI Northeast Bridge Substructure Guide - Part B</p> <p>*Michael P. Culmo - CHA Consulting, Inc.</p>	<div>22-080</div> <p>Accelerated Working Solution For Replacing Old Existing Railway Or Highway Bridge</p> <p>*Bill Zielke - AWIT Co & BridgInnova, Inc. Petter Hennum - AWIT Co & BridgInnova, Inc.</p>

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