

Second National Covered Bridges Conference

June 5-8, 2013

Crowne Plaza Dayton, Dayton, Ohio



Second National Covered Bridge conference group photo at the Crowne Plaza Dayton.

Final Conference Program

Wednesday June 5, 2013

8:00am-5:30pm Registration

Crowne Plaza Dayton Ballroom level

Pre Conference Tour

Dayton Aviation Heritage Tour

10:00am-4:00pm

Tour Dayton's monuments to the birth of the aviation industry. Tour stops will include [Carillon Historical Park](#) (home to two historic bridges), the [Wright Cycle Company Complex](#), and the [Huffman Prairie](#) Flying Field Interpretive Center at Wright-Patterson Air Force Base.



Dayton Aviation Heritage tour group at the Feedwire Road Bridge at Carillon Historical Park.

4:00--6:00pm Timber Framing Demonstration

RiverScape Pavilion

Join timberframers Dave Kirwin and Will Truax, who will be constructing a Kingpost truss during the conference, and demonstrating historic construction techniques. This event is at the [RiverScape Pavilion](#) along the Miami River waterfront, a ten minute walk from the conference hotel, and only a block from the Engineers Club of Dayton. The hotel is providing a shuttle service for those who prefer a ride.



Dave Kirwin and Will Truax led a timber framing demonstration of a kingpost truss at RiverScape Pavilion on Dayton's Miami River waterfront.

Opening Reception

The Engineers Club of Dayton

5:30-7:00pm Opening Reception & Buffet

Meet fellow conferees at the historic Engineers Club of Dayton. Enjoy refreshments and a buffet dinner and view historical displays of Dayton's ingenuity, from the Wright Brothers' engine to the cash register, and many other innovations. Registration will be available during the event.



Conference chair Christopher Marston opens the Wednesday Evening Welcome Session at the Engineer's Club of Dayton. Dario Gasparini gave an insightful talk on "The Wright Brothers and the Pratt Truss."

7:00-8:30pm Evening Welcome Session

Dayton History's **Brady Kress** will welcome you to Dayton and tell stories of its history. **Prof. Dario Gasparini** will discuss the ingenuity of wood Pratt trusses and how they were instrumental in the story of the Birth of Flight.

Thursday June 6, 2013

7:00am-5:00pm Registration

Crowne Plaza Dayton Ballroom level

7:00-8:30am Continental Breakfast Salon B



The display area at the Crowne Plaza made for a energetic crossroads of conference goers.

8:30-9:15am Conference Welcome Salon A

Welcome and Introductions

Christopher Marston (*Conference Chair*), Architect, NPS, Historic American Engineering Record, Washington, DC

Welcoming Speakers

Gary Leitzell, *Mayor, City of Dayton, OH*

Burt Logan, *Director, Ohio Historical Society and State Historic Preservation Officer, Columbus, OH*

Tom Barrett, *Historian, Office of Environmental Services, Ohio DOT, Columbus, OH*

Robert Griffith, *Assistant Administrator, FHWA, Ohio Division, Columbus, OH*

Sheila Rimal Duwadi, *PE, Team Leader, Hazard Mitigation, FHWA, Turner Fairbank, McLean, VA*

Steven LaTourette, *Ohio Congressman (retired), Washington, DC (live via video)*

9:15-10:30am Plenary Session 1, Salon A & B: Traditional v Pragmatic Rehabilitation Strategies

Moderator: Christopher Marston, *National Park Service, HAER, Washington, DC*

Rehabilitating 19th Century Bridges using 19th Century Solutions

Timothy Andrews, *Barns & Bridges of New England, Gilford, NH*

Pragmatic Rehabilitation Strategies

Robert Durfee, *PE, Vice President, Dubois & King, Laconia, NH*

10:30-11:00am Break

11:00am-12:30pm Plenary Session 2, Salon A & B: Covered Bridge Research

Moderator: Christopher Marston, *National Park Service, HAER, Washington DC*

Options for Evaluating Fire Damaged Components of Historic Covered Bridges

Robert White, *PhD, USDA Forest Service, Forest Products Laboratory, Madison, WI*

James Wacker, *PE, USDA Forest Service, Forest Products Laboratory, Madison, WI*

Brian Kukay, *Montana Tech of the University of Montana, Butte, MT*

Jenson Sannon, *Montana Tech of the University of Montana, Butte, MT*

Guide for In-Place Preservative Treatment of Covered Bridges

Stan Lebow, *USDA, Forest Service, Forest Products Laboratory, Madison, WI*

Jeffrey Morrell, *Department of Wood Science and Technology, Oregon State University*

Covered Bridges as Structural Art: Integrating Covered Bridges Into Civil Engineering Curriculum

Rachel Sangree, *PhD, Johns Hopkins University, Baltimore, MD*

12:30-2:00pm Lunch

Ballroom Salon A & B

Enjoy lunch with other attendees at the conference hotel. There will be a short program after lunch is served to acknowledge distinguished contributors to the preservation of covered bridges.

Rich O'Connor: Eric DeLony

Bill Collins: David Fischetti

Bill Caswell: NSPCB, David Wright, Joseph Conwill

Arnold Graton: Milton Graton, David Fischetti

2:00-3:30pm Concurrent Sessions

Session 3, Salon C: Rehabilitation Guidelines I

Moderator: Tom Vitanza, *National Park Service, Frederick, MD*

Applying the Secretary of Interior's Standards to the Rehabilitation of Historic Covered Bridges

Tom Vitanza, *RA, Historical Architect, NPS, Historic Preservation Training Center, Frederick, MD*

Goodpasture Covered Bridge Rehabilitation, Oregon

Greg Ausland, PE, Senior Project Manager, OBEC Consulting Engineers, Eugene, OR

Tony LaMorticella, PE, PS, Senior Project Engineer, OBEC Consulting Engineers, Eugene, OR

Adopting Design-Build Procurement Process for Covered Bridge Restoration Efforts in Kentucky

Patrick Kennedy, Restoration Projects Consultant, Owenton, KY

Jen Williamson, AIA, Staff Architect, Kentucky Heritage Council, Frankfort, KY

Session 4, Salon D: Covered Bridge History

Moderator: David Simmons, Ohio Historical Society, Columbus, OH

1764 Connecticut Geometry Bridge

Terry Miller, PhD, Kent State University (retired), Kent, OH

Germany's Historic Wooden Covered Bridges Still Standing

Philip Caston, PhD, Neubrandenburg University, Neubrandenburg, Germany

The Howe Bridges on the Nikolaev Railway

Kamil Nizamiev, Case Western Reserve University, Cleveland, OH

Dario Gasparini, PhD, Case Western Reserve University, Cleveland, OH

3:30-4:00pm Break

4:00-5:30pm Concurrent Sessions

Session 5, Salon C: Rehabilitation Guidelines II, Salon C

William Vermes, Jones Stuckey, Akron, OH

Rehabilitation of a Two-Lane Covered Bridge

Sean James, PE, Vice President, Hoyle, Tanner & Associates, Manchester, NH

Josif Bicja, PE, Project Manager, Hoyle, Tanner & Associates, Manchester, NH

Kings Covered Bridge Rehabilitation, Somerset County, PA

William Collins, RLA, Vice President, Simone Collins, Norristown, PA

Samer Petro, PE, Herbert, Rowland & Grubic, Morgantown, WV

Considerations for Restoring Structural Integrity of Covered Bridge Members

Ron Anthony, Wood Scientist, Anthony & Associates, Fort Collins, CO

Session 6, Salon D: Buckeye Bridges

Moderator: Paul Graham, Paul Graham Consulting, Worthington, OH

Historic Construction Practices and Procedures: How They Built our Covered Bridges

Douglas Kramer, Kramer & Associates, Eaton, OH

Historic Influence on Modern Covered Bridge – The Hueston Woods Covered Bridge Pays Tribute to the Covered Bridges of Preble County

Kyle Cross, PE, PS, Preble County Engineer, Eaton, OH

The Historic Eldean Covered Bridge, Troy, Ohio

Douglas Christian, PE, PS, Miami County Engineer (retired), Troy, OH

6:00-10:00pm Hog Roast Dinner at Preble County Historical Society

Join conference goers to a social evening out at this historic landscape at the Sayler-Swartzel Farm. You will have the opportunity to tour the Brubaker Covered Bridge, 19th century farm buildings, and exhibit halls. Dine al fresco at the new amphitheater overlooking a wetland and forest that serve as a dramatic backdrop. Included with your evening: Puzzle of Light Ensemble with Michael and Sandy Bashaw will present their technically exciting and emotionally deep music ranging from jazz and rock to ethnic and world creative music.



Conference goers received local hospitality at a hog roast hosted by the Preble County Historical Society at their amphitheatre, and enjoyed music by the ensemble "Puzzle of Light."

Friday June 7, 2013

7:00am-5:00pm Registration

Ballroom level foyer

7:00-8:30am Continental Breakfast

Ballroom Salon A & B

8:30-10:00am Concurrent Sessions

Session 7, Salon C: New Covered Bridges

Moderator: Douglas Miller, *Jones Stuckey, Columbus, OH*

Hueston Woods Covered Bridge

John Smolen, *PE, Smolen Engineering, Jefferson, OH*

David Shields, *PE, Smolen Engineering, Jefferson, OH*

Lessons from the Stutzman's Crossing Covered Bridge

David Rinehart, *PE, Richland Engineering, Mansfield, OH*

Replacing Bartonville: It Took Three to Yield One Covered Bridge

Phil Pierce, *PE, Clough Harbour & Associates, Albany, NY*

Session 8, Salon D: Howe Trusses

Moose Brook Bridge: Salvage, Documentation, and Reconstruction of a Howe Truss

Moderator: David Simmons, *Ohio Historical Society, Columbus, OH*

Christopher Marston, *Architect, NPS, Historic American Engineering Record, Washington, DC*

Timothy Andrews, *Barns & Bridges of New England, Gilford, NH*

Vern Mesler, *VJM Metal Craftsman, Lansing, MI*

Dario Gasparini, *PhD, Case Western Reserve University, Cleveland, OH*

David Wright, *President, Natl Society for the Preservation of Covered Bridges, Westminster, VT*

Moose Brook Bridge: Instrumenting, Post-tensioning, Recording, and Modeling a Howe Truss

Dario Gasparini, *PhD, Case Western Reserve University, Cleveland, OH*

Kamil Nizamiev, *Case Western Reserve University, Cleveland, OH*

Neil Harnar, *Case Western Reserve University, Cleveland, OH*

Jim Berilla, *Case Western Reserve University, Cleveland, OH*

Langley Covered Bridge Rehabilitation

Tom Nehil, *PE, Nehil-Sivak Consulting Structural Engineers, Kalamazoo, MI*

10:00-10:30am Break

10:30-12:00pm Concurrent Sessions

Session 9, Salon C: Structural Behavior of Trusses

Moderator: Robert McCullough, *University of Vermont, Burlington, VT*

Structural Behavior and Design of Two Smith Trusses

Stephen Buonopane, *PhD, Bucknell University, Lewisburg, PA*

Sarah Ebright, *Structural Designer, KL&A, Basalt, CO*

Alex Smith, *Structural Engineer, ARUP New York, NY*

Robert Smith's Trusses

Matthew Reckard, *PE, MS, MKR Design, Ester, AK*

Regional Variations and Analysis of Town Lattice Trusses

Sean James, *PE, Hoyle, Tanner & Associates, Manchester, NH*

Session 10, Salon D: Chinese Bridges I

Moderator: Terry Miller, *Kent State University, Kent, OH*

Discovering China's Forgotten Bridges

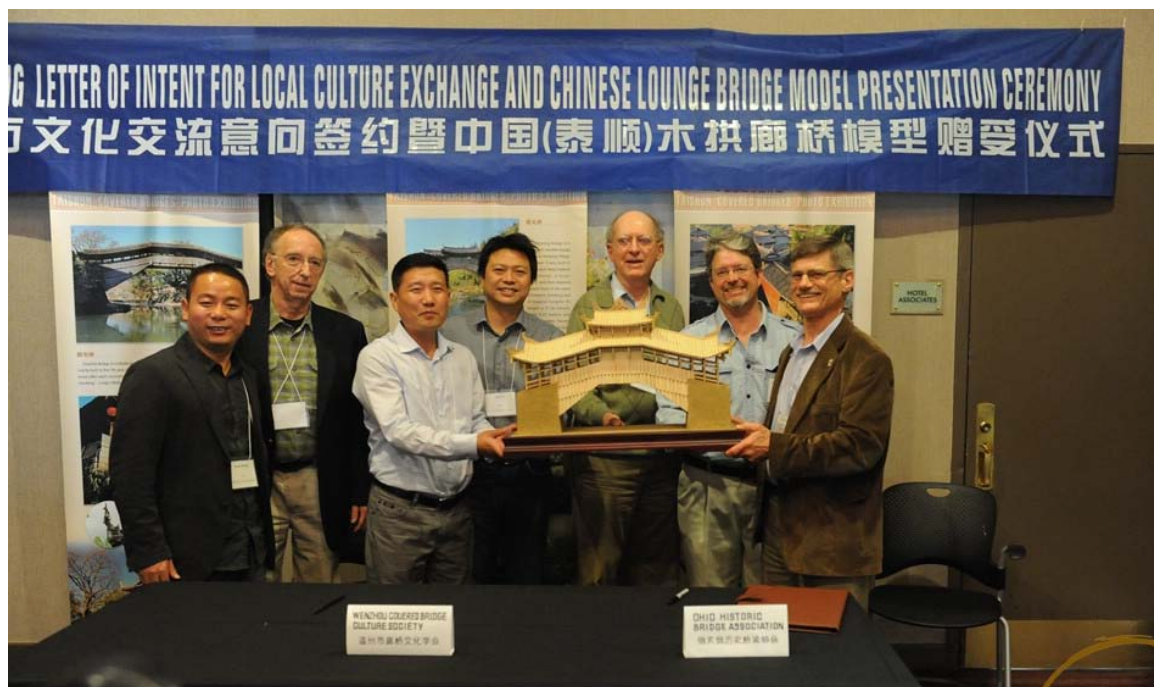
Ronald Knapp, *PhD, State University of New York at New Paltz, NY*

Structure, Construction, and Craftsmanship of the Timber Woven-Arch Bridge in China

Yan Liu, *Technical University of Munich, Germany*

Sounds of a Covered Bridge: Music and Ritual Associated with Chinese "Corridor Bridges"

Terry Miller, *PhD, Ethnomusicologist, Kent State University (retired), Kent, OH*



Members of Taishun, China delegation present a Chinese bridge model to David Simmons of Ohio Historic Bridge Association. Pictured are (l to r): ZHONG Xiaobo, President, Wenzhou Lounge (Covered) Bridge Culture Society; Ron Knapp, Professor, SUNY New Paltz; ZHOU Xiusong, Minister of the Propaganda Department of the CPC Taishun County; Jack LIU, Associate Professor, Architecture, Jiaotong University, Shanghai; Terry Miller, Professor, Kent State University; Christopher Marston, HAER; David Simmons, Ohio Historical Society.

Session 11, Harding Room: Documentation

Moderator: Justine Christianson, *National Park Service, Washington, DC*

Documenting Covered Bridges Through 3D Laser Scanning and 3D Modeling

Jeremy Mauro, *Architect, NPS, Historic American Engineering Record, Washington, DC*

Use of Laser Scanning Technology to Obtain As-Built Records of Historic Covered Bridges

Brian Brashaw, *Natural Resources Research Institute, University of Minnesota, Duluth, MN*

Robert J. Ross, *USDA Forest Service, Forest Products Laboratory, Madison, WI*

Samuel Anderson, *(formerly) Natural Resources Research Institute, U of Minnesota, Duluth, MN*

Theodore Burr Covered Bridge Resource Center

Trish Kane, *Collections Curator, Theodore Burr Covered Bridge Resource Center, Oxford, NY*

12:00-1:30pm Lunch on your own

The timber framing demonstration will still be ongoing at RiverScape Pavilion, where refreshments will be sold. The hotel is providing a shuttle service for those who prefer a ride. You may also take this opportunity to eat nearby at one of Dayton's restaurants.

1:30-3:00pm Concurrent Sessions

Session 12, Salon C: Loading/Design

Moderator: Dario Gasparini, *Case Western Reserve University, Cleveland, OH*

Wind Loading on Historic Covered Bridges

Michael Bartlett, *PhD, Western University, London, Ontario, Canada*

Peter King, *Wind Tunnel Laboratory, Western University, London, Ontario, Canada*

Load Rating Historic Covered Bridges Through Physical Load Testing

James Wacker, *PE, USDA Forest Service, Forest Products Laboratory, Madison, WI*

Travis Hosteng, *Bridge Engineering Center, Institute for Transportation, Iowa State U, Ames, IA*

Brent Phares, *PE, PhD, Natl Center for Wood Transportation Structures, Iowa State U, Ames, IA*

Lightweight Deck Systems for Historic Covered Bridge Rehabilitation

Brian Brashaw, *Natural Resources Research Institute, University of Minnesota, Duluth, MN*

James Wacker, *PE, USDA Forest Service, Forest Products Laboratory, Madison, WI*

Kristoffer Ekholm, *PHD candidate, Chalmers University of Technology, Gothenburg, Sweden*

Session 13, Salon D: Chinese Bridges II

Moderator: Ronald Knapp, *State University of New York, New Paltz, NY*

Ancient Chinese Arch Covered Bridges

Jack Liu, *PhD, Shanghai Jiao Tong University, China*

Historic Cultures and Traditional Technology of Taishun Covered Bridges

Haibo Ji, *President, Wenzhou Lounge Bridge Culture Society, Wenzhou, China*

Session 14, Harding Room: Security

Moderator: Mary Ann Naber, *US Department of Transportation, Washington, DC*

Improved Hydraulic Safety for Covered Bridges

Frank Jalinoos, *PE, FHWA, Turner Fairbank Highway Research Center, McLean, VA*

Sheila Duwadi, *PE, Team Leader, Hazard Mitigation, FHWA, Turner Fairbank, McLean, VA*

Kornel Kerenyi, *PE, FHWA, Turner Fairbank Highway Research Center, McLean, VA*

Jerry Shen, *Program Manager, Genex Systems, McLean, VA*

Burfordville Covered Bridge: Preserve, Protect, and Reconstruct

Lesley McDaniel, *Historic Site Specialist, Missouri State Parks, Burfordville, MO*

3:00-3:30pm Break

3:30-5:00pm, Closing Plenary Session, Salon A

Moderator: Christopher Marston, *National Park Service, HAER, Washington DC*

Development of a Security Manual for Historic Covered Bridges

Brent Phares, *PE, PhD, Natl Center for Wood Transportation Structures, Iowa State U, Ames, IA*

Tohickon Aqueduct Rehabilitation

William Collins, *RLA, Simone Collins Landscape Architecture, Norristown, PA*

Stretching the Envelope: How Bad Is “Repairable”?

Jim Barker, *PE, JA Barker Engineering, Inc, Bloomington, IN*

5:00-6:30pm Closing Reception, Salon B

Join fellow attendees to celebrate the end of the conference!

Dinner on your own

Eat nearby at one of the Dayton’s restaurants. The timber framing demonstration will be still be ongoing at RiverScape Pavilion. A salsa dance performance will be shown at RiverScape starting at 7:00pm.

Saturday, June 8, 2013



The Preble County Tour had lunch at Roberts Bridge, the only double-barreled and oldest covered bridge in Ohio (1829).

Covered Bridge Tour A

8:00am-4:00pm

Tour the historic and newly constructed covered bridges in Preble County. The tour will also swing through Miami and Montgomery County. Truss types include: Childs, Multiple King, Burr Arch, Pony, Long, Inverted Bowstring, Warren with Arch. Knowledgeable builders, engineers, and officials will accompany the tour.

Covered Bridge Tour B

8:00am-3:00pm

This tour will focus on the covered bridges of Greene County. The tour will swing through Miami and Montgomery County. Truss types include: Howe, Smith, Long, Inverted Bowstring, Warren with Arch. Knowledgeable builders, engineers, and officials will accompany the tour.



The Greene County tour group photo at the Ballard Road Bridge, an 1883 Howe truss.