# Western Bridge Engineers’ Seminar

**September 6 – 8, 2017**

**INNOVATIVE SOLUTIONS THAT STAND THE TEST OF TIME**

Portland Marriott Downtown Waterfront
Portland, Oregon

Seminar managed by:

Conference Management

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**Tuesday, September 5**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>6:00 – 8:00 PM</td>
<td><strong>ICEBREAKER RECEPTION</strong></td>
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**Wednesday, September 6**

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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>7:30 AM – 5:00 PM</td>
<td><strong>EXHIBIT HALL OPEN</strong></td>
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<tr>
<td>7:30 – 8:30 AM</td>
<td><strong>CONTINENTAL BREAKFAST</strong></td>
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<td>8:30 – 10:00 AM</td>
<td><strong>WELCOME &amp; OPENING REMARKS</strong></td>
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<tr>
<td></td>
<td>- Funding for Oregon’s Critical Highway Needs</td>
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<td></td>
<td>Travis Brouwer • Oregon DOT</td>
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<td>- Oregon’s Innovative Bridge Solutions</td>
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<td></td>
<td>Bruce Johnson • Oregon DOT</td>
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<td></td>
<td>- Keynote: Overview of OR-18 Newberg-Dundee Bypass Project</td>
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<td></td>
<td>Matthew Stucker, Tony Snyder • Oregon DOT</td>
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<td>Robert Goodrich • OBEC Consulting Engineers</td>
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<td>Scott Schlechter • GRI</td>
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<td>10:00 – 10:30 AM</td>
<td><strong>EXHIBIT BREAK</strong></td>
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<tr>
<td>10:30 AM – Noon</td>
<td><strong>TECHNICAL SESSIONS</strong></td>
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<tr>
<td>2A</td>
<td><strong>BRIDGE DESIGN AND CONSTRUCTION I</strong></td>
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<td>- Design and Construction of the SR-520 West Approach Bridge-North</td>
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<td>Greg Knutson • HDR Engineering Inc.</td>
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<td>- Replacing the Aging US-52 Mississippi River Bridge</td>
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<td>Greg Hasbrouck • Parsons</td>
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<td></td>
<td>Faith Duncan • Illinois DOT</td>
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<td>2B</td>
<td><strong>BRIDGE DESIGN AND CONSTRUCTION II</strong></td>
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<td>- A New Signature Bridge for the City of Los Angeles: The Sixth Street Viaduct</td>
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<td>Michael H. Jones, Michael Van Duyn, Rui Lu, Semyon Treyger • HNTB Corporation</td>
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<td>Julie Allen • City of Los Angeles, Bureau of Engineering</td>
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<td>2C</td>
<td><strong>BRIDGE DURABILITY AND MATERIALS</strong></td>
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<td></td>
<td>- Historic Perspective on Galvanic Anode Use for Corrosion Protection of Bridges</td>
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<td>Eliseo Conciatori • Vector Corrosion Technologies, Inc.</td>
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<td>- Silane Concrete Water Repellents: An Innovative Solution That Stands the Test of Time</td>
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<td>Tim Woolery • Advanced Chemical Technologies, Inc.</td>
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<td>- Method of Improving Concrete Durability in Bridges and Structures</td>
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<td>Philip Rhodes • Hycrete Inc.</td>
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INNOVATIVE SOLUTIONS THAT STAND THE TEST OF TIME

September 6–8, 2017
Portland Marriott Downtown Waterfront | Portland, Oregon

cm.wsu.edu/wbes
800-942-4978

**2D FOUNDATION DESIGN AND CONSTRUCTION**

- Drilled Shaft Quality Through Thermal Integrity Profiling
  James M. Schmidt • Terracon Consultant, Inc.

- Innovative Large Shaft Repair for Abraham Lincoln Cable-stayed Bridge
  Claudio Osses, John Brestin • COWI North America, Inc.

- Fairview Avenue Bridge | Slip Sliding Away: Challenges in Foundation Design with Flow Loads and Plastic Hinging
  Ellen Brenden, Kiva Lints • HNTB Corporation

**3D BRIDGE DESIGN AND CONSTRUCTION**

- Design of the I-405/SR167 Flyover Bridge
  Alice Fong, Anthony Gasco • Jacobs Engineering Inc.

- Designing Long Span Precast/Prestressed Concrete Bridge Girders for Lateral Stability
  Richard Brice • Washington State DOT

- Design and Construction of 2nd Street Connector
  Ali Seyyedmazani • WSP USA

**Noon LUNCH**

1:30–3:00 PM TECHNICAL SESSIONS

**3A BRIDGE REHABILITATION**

- I-40 Willow Creek Bridge No. 5: Unique Bridge Deck Replacement Solution
  Christopher Labye, Ben C. Ansley • AECOM

- Reviving a Piece of History: Healdsburg Avenue Bridge Over the Russian River
  Mark Weaver • Cornerstone Structural Engineering Group

- Susitna River Bridge Substructure Repairs in Remote Alaska
  Jared Levings • Alaska DOT & Public Facilities

**3B BRIDGE SEISMIC DESIGN**

- A New Type of EDD for the Seismic Retrofit of the Golden Gate Bridge Main Suspension Spans
  Michael Kochly, Ted Bush, Kuang Lim • HDR Engineering, Inc.
  Ewa Bauer-Furbush, John Eberle • Golden Gate Bridge, Highway and Transportation District

- Seismic Design Challenges of West Mission Bay Drive Bridge Replacement
  Kumar Ghosh • T.Y. Lin International

- Boeing Access Road Bridge Seismic Retrofit and Rehabilitation
  Kevin Kim, Hana D’Acci • Jacobs Engineering Inc.

**3C BRIDGE RESEARCH**

- Design Strategy to Minimize Seismic Residual Displacements and Damage in a New ABC Bridge Bent
  Marc Eberhard, John Stanton • University of Washington
  Travis Thonstad • National Institute of Standards and Technology
  David Sanders, Islam Mantawy • University of Nevada, Reno

- ABC Low Damage in High Seismicity: Concept, Experimental Validation and Real-Life Application
  Mustafa Mashal • Idaho State University

- Investigation of Macro-Defect Free Concrete for Accelerated Bridge Construction, including Robotic Construction
  Katelyn Freeseaman, Brent Phares • Iowa State University

**3D BRIDGE DESIGN AND CONSTRUCTION**

- Design and Construction of the Rockingham Bridges 24N & 24S
  Nicholas Rodda • HDR Engineering Inc.

- Using Single-Column Bents With Large Eccentricities to Avoid Straddle Bents
  Nicholas Murray, Kuang Go, Aamir Durrani • HNTB Corporation

- California Incline Bridge Replacement Project, City of Santa Monica
  Curtis Castle • City of Santa Monica, Civil Engineering
  Scott Dendall • CALTROP Corporation
  Peter Smith • T.Y. Lin International

**3:00 – 3:30 PM EXHIBIT BREAK**

**3:30–5:00 PM TECHNICAL SESSIONS**

**4A BRIDGE DESIGN AND CONSTRUCTION**

- Design and Construction of the Rockingham Bridges 24N & 24S
  Nicholas Rodda • HDR Engineering Inc.

- Through the Eye of the Needle (Scioto River Pedestrian Bridge)
  Dan Fitzwilliam, Mirek Olmer, Marwan Nader • T.Y. Lin International

- Construction Methods for Rural Pedestrian Suspension Bridges
  Nathan Bloss • Bridging the Gap Africa (CH2M)
  Matthew Bowser • Bridging the Gap Africa (WSP)

**4B PEDESTRIAN BRIDGE PROJECTS**

- Minto Island Bicycle & Pedestrian Bridge: Design and Construction
  Bob Goodrich, Jim Bollman • OBEC Consulting Engineers

- Recent Innovations in WSDOT Bridge Design and Construction
  Bijan Khaleghi • Washington State DOT

- Bridge Lighting Efficiencies for Bridges Spanning Navigable Water
  Rowan Plaxton, Lee Walker • Sealite USA, LLC

- Using Bridge 3D Models After The Design Process
  Alexander Mabrich • Bentley Systems
Thursday, September 7

7:30 AM–3:30 PM   EXHIBIT HALL OPEN

7:30–8:30 AM   CONTINENTAL BREAKFAST

8:30–10:00 AM   TECHNICAL SESSIONS

5A  BRIDGE DESIGN AND CONSTRUCTION

- Spliced Precast Concrete Girder Bridges: 20 Years of Lessons Learned in Design and Construction
  Gregg Reese • Modjeski and Masters/Summit Engineering Group

- Sellwood Bridge Replacement Project
  Eric Rau • T.Y. Lin International
  Ian Cannon • Multnomah County (OR)

- Riverside Drive Viaduct Replacement
  Y. Nien Wang, Jiahwa Wang • HNTB Corporation
  Shirley Lau • City of Los Angeles, Bureau of Engineering

5B  BRIDGE REHABILITATION

- Kotzebue Slough Bridge Underwater Pile Repair in Remote Alaska
  Jared Levings • Alaska DOT & Public Facilities

- Reconstruction Challenges of a Nationally Historic Arch Bridge in San Diego
  Ebrahim AmiriHormozaki, Nathan Johnson • Kleinfelder

- WSDOT Experience Resurfacing Existing Bridge Decks with Hot-Mix Asphalt
  Dick Stoddard • Washington State DOT

5C  SUBSTRUCTURE ANALYSIS AND CONSTRUCTION

- US-20 | Pioneer Mountain: Eddyville Construction Innovation and Engineering
  Jaime Viramontes Sr., Derryl James • Oregon DOT

- Applications and Implications of AASHTO for Assessment of Vessel Collision Risk and Vulnerability for New and Existing Bridges
  Michael Roberts • HDR Engineering Inc.

- Repair of Large Diameter Non-Redundant Drilled Shaft
  Alan Marchman, Kuan Go • HNTB Corporation

5D  BRIDGE TECHNOLOGY AND SOLUTION

- Incorporating Innovative Materials into a Seattle, WA Bridge to Improve Seismic Resilience
  Jedediah Bingle • Washington State DOT

- High Load Multirotational Bearing for the Tilikum Crossing
  Ronald J. Watson • R. J. Watson, Inc.

- Fiber Reinforced Polymer Decks and Challenging Micropile Installation for Pedestrian Bridges in Difficult Terrain
  JP Loomis • CH2M
  Michael Mayberry • Nevada DOT

10:00–10:30 AM   EXHIBIT BREAK

10:30–Noon   TECHNICAL SESSIONS

6A  BRIDGE DESIGN AND CONSTRUCTION

- Helpful Hints for Designing in Alaska
  Leslie Daugherty • Alaska DOT & Public Facilities

- Issues in Cofferdam Design and Construction
  Michael Garlich • Collins Engineers, Inc.

- The Design of The Chena River Bridge at University Ave.
  Jesse Escamilla III • Alaska DOT & Public Facilities

6B  BRIDGE DURABILITY AND MATERIALS

- Case Studies for 125-Year Service Life Utilizing High Strength Low Chromium Reinforcing Bars
  Neal Berke, Ranjani M. Vijayakumar, Justin Thomson • Tourney Consulting Group, LLC

- Accelerating Construction and Improving Service-Life using UHPC in Bridge Infrastructure Projects
  Gregory Nault • LafargeHolcim - Ductal

- Specifying Lightweight Concrete for Bridges: Reduced Density and Enhanced Durability
  Reid Castrodale • Expanded Shale Clay and Slate Institute
### 6C LIGHT RAIL BRIDGE PROJECTS
- **Design-Build of the First Ten Miles of Honolulu Rail Transit Project**  
  Kuan Go, Alan Marchman • HNTB Corporation
- **Light Rail Transit Bridges: Crenshaw/LAX Transit Corridor Design-Build**  
  Aamir Durrani, Murali Hariharan, Hoda Emami • HNTB Corporation  
  Kevin Acosta • ARUP
- **Sound Transit Eastlink and Lynnwood Link Aerial Guideway**  
  Joshua Schettler, Kent Ferguson • Jacobs Engineering Inc.  
  Steve Gleaton • Sound Transit  
  Matt Vaggione • HNTB Corporation

### 6D PEDESTRIAN BRIDGE PROJECTS
- **Spiraling Toward the Beach: The Idaho Avenue Pedestrian Bridge**  
  Hunter Ruthrauff, Peter Smith • T.Y. Lin International
- **Tiger Mountain Lower High Point Steel Truss Bridge Design and Construction**  
  Jane Li • RHC Engineering, Inc.  
  Jim Patton • Washington State DOT
- **Reuse of Unreinforced 1920s Railroad Piers for New Pedestrian Bridge**  
  Lucas Miner • Psomas  
  Wenn Chyn • City of Los Angeles, Department of Public Works

### Noon
**LUNCH**

### 1:30 - 3:00 PM TECHNICAL SESSIONS

### 7A BRIDGE DESIGN AND CONSTRUCTION
- **240′ Long Precast Single Span Bridge: Chief Joseph Dam Bridge Replacement Project**  
  Jian Xu • Jacobs Engineering  
  Tom Whiteman • KPFF Consulting Engineers  
  Aaron Simmons • Douglas County (WA)
- **Broadway Bridge Tied Arches: Value Engineering**  
  Natalie McCombs • HNTB Corporation
- **I-15 Capitol/Cedar Interchange (Helena, MT): Front-end Planning Mitigates Construction Risk**  
  Dustin Hirose • HDR Engineering Inc.  
  Stephanie Brandenberger • Montana DOT

### 7B ACCELERATED BRIDGE CONSTRUCTION
- **Accelerated Bridge Construction: National Perspective and ABC-UTC Activities**  
  Atorod Azizinamini • Florida International University
- **Seismic Behavior of Columns with Grouted Bar Couplers in Idaho ABC Applications**  
  Arya Ebrahimipour • Idaho State University  
  Leonard Ruminski • Idaho Transportation Department

### 7C BRIDGE RESEARCH
- **Design and Configuration of Jointless Bridges for ABC Applications**  
  Behrouz Shafei, Brent Phares, Michael Dopko, Shahin Hajilar • Iowa State University
- **Performance of General Anchorage Zone for Post-tensioned Box Girder Bridges**  
  Ahmed Maree, David Sanders • University of Nevada, Reno
- **Standards to Control Fracture in Steel Bridges Through the Use of High-Toughness Steel and Rational Inspection Intervals**  
  Ryan J. Sherman • University of Nevada, Las Vegas  
  William Collins • University of Kansas  
  Robert Connor • Purdue University

### 7D BRIDGE MANAGEMENT AND DESIGN POLICIES
- **MASH Implementation for California Bridge Railings**  
  Tom Ostrom, Gregory Kaderabek • CalTrans
- **Successful Preservation Practices for Steel Bridge Coatings**  
  Raymond Bottenberg • Oregon DOT
- **Seismic Risk Analysis of Ferry Terminal Bridge Structures**  
  Jeri Bernstein, Chris Stearns • Washington State DOT

### 3:00 – 3:30 PM EXHIBIT BREAK

### 3:30 – 5:00 PM TECHNICAL SESSIONS

### 8A BRIDGE DESIGN AND CONSTRUCTION
- **Constructing the SR-520 Floating Bridge**  
  Jason Pang, Greg Hess • KPFF Consulting Engineers
- **Design of Pre-Cambered Concrete Girders with Moderate to High Levels of Pre-Camber**  
  Amanda Wong, Claudio Osses • COWI North America, Inc.
- **Predicting Major Bridge Construction Costs**  
  Ken Saindon • EST, Inc.

### 8B BRIDGE RESEARCH
- **Steel I-Girder Bridge Fit Research**  
  Domenic Coletti • Michael Baker International  
  Don White • Georgia Tech  
  Thanh Nguyen • RS&H  
  Brandon Chavel • HDR Engineering Inc.  
  Michael Grubb • M.A. Grubb & Associates, LLC  
  Calvin Boring • Brayman
### 8C BRIDGE SEISMIC DESIGN

- **Concrete-Filled Tubes for Improved Seismic Performance and Constructability**  
  Dawn Lehman, Charles Roeder • University of Washington  
  Bijan Khaleghi • Washington State DOT

- **Alternative ABC Connections Using UHPC**  
  Mohamadreza Shafieifar, Mahsa Farzad, Atorod Azizinamini • Florida International University

- **Earthquake Duration Effect on Collapse Capacity of Reinforced Concrete Bridge Columns**  
  David Sanders • University of Nevada, Reno  
  Mohammed Mohammed • Dynamic Isolation Systems

- **I-5 Overcrossing (Cook, Over PNWR) Seismic Retrofit Design and Phase II Construction**  
  Michael Roberts, Mark Libby • HDR Engineering Inc.

### 8D BRIDGE ANALYSIS AND DESIGN

- **Dynamic Interaction of Bridge Superstructure and Light Rail Vehicle**  
  Aamir Durrani, Hao Luo • HNTB Corporation  
  Xiaoyun Wu • IDC

- **Foundation Restrained Analysis of Bridge Structures for Liquefaction Induced Lateral Spreading Soil Load**  
  Ahilan Selladurai • T.Y. Lin International

- **A Case Study on Extreme Scour at an Alaska Bridge and the Monitoring Efforts Used to Track the Changing Conditions**  
  Michael Knapp • Alaska DOT & Public Facilities  
  Jeff Conaway • USGS Alaska Science Center

- **Arch Bridge Buckling Analysis Methods**  
  Benjamin Biasen • CH2M

### Friday, September 8

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<td>8:30–10:00 AM</td>
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<td>9A</td>
<td>BRIDGE DESIGN AND CONSTRUCTION</td>
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|                  | Design and Construction of the Tilikum Crossing in Portland, Oregon  
  Norman Smit, Kevin Almer • T.Y. Lin International

- **Structural Design of Main Post Cut & Cover Tunnels: Presidio Parkway**  
  Allen Rejaie • HNTB Corporation

- **Balancing Innovation, Constructability, and Maintenance to Cross the San Diego River**  
  Nathan Johnson, Kelly Burnell • Kleinfelder

| 9B               | ACCELERATED BRIDGE CONSTRUCTION                 |
|                  | SH-97, I-90 OPASS IC #22                        |
|                  | Shawn Metts • HMH Engineering  
  John Vaudreuil • Idaho Transportation Department

- **“I Didn’t Know It Would Be That Fast!” ABC Advancements and Advantages with Buried Bridges**  
  Joel Hahn • Big R Bridge

- **Ohio’s ABC Demonstration Project with Rapid Bridge Replacement with Tub Girders Integrated with SPS Bridge Deck. Self-Performing Installations of Short Span Bridges with SPS Bridge Decks.**  
  Rolando Moreau, Kay Jimison • SPS North America

| 9C               | FOUNDATION DESIGN AND CONSTRUCTION              |
|                  | Sellwood Bridge Replacement: Landslide Mitigation |
|                  | Tom Westover • Cornforth Consultants, Inc.      |

| 9D               | PEDESTRIAN BRIDGE PROJECTS                      |
|                  | Changes to AASHTO LRFD & CalTrans Design Criteria for Design of Retaining Structures over the Last Decade  
  Ahilan Selladurai • T.Y. Lin International

- **Lightweight Embankment Materials for Bridge Approaches**  
  Murali Hariharan, Aamir Durrani • HNTB Corporation

| 9D               | GENERAL SESSION: OREGON’S INNOVATIONS           |
|                  | Keynote: Renewal of Aging and Deteriorated Reinforced Concrete Bridges with Titanium Alloy Bars  
  Chris Higgins • Oregon State University

- **Keynote: Achieving Operational Seismic Performance of Existing Highway Bridges with Ductile Fuse Retrofit**  
  Peter Dusicka • Portland State University

- **Closing Remarks & Invitation to 2019 Conference**  
  Matt Farrar • Idaho Transportation Department