

7:00 am **REGISTRATION: Foyer**

8:00-9:45 am **Welcome and Keynote Session located in The Ritz-Carlton Ballroom, Salons I, II & III**

**BRIDGE ENGINEERING ASSOCIATION  
CHAIRMAN'S WELCOME:**

**Dr. Khaled M. Mahmoud, PE, President**  
**Bridge Technology Consulting, New York City, USA**

**KEYNOTE SESSION (I)**

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**International Practice using NDE for the Inspection of Concrete and Masonry Arch Bridges** Dr. Michael Forde, Professor, University of Edinburgh, Scotland, United Kingdom

**The Safety of Bridges** Dr. Theodore Galambos, Emeritus Professor, University of Minnesota, USA

**Bridge Design: Connecting Engineering and Art** Professor, Dr.Ing., Drs.h.c. Jörg Schlaich, Senior Partner, Schlaich Bergermann und Partner, Emeritus Professor, University of Stuttgart, Germany

9:50-10:15 am **COFFEE BREAK: Harbor Vista & Skyline Vista**

10:20 - 12:20 pm **SESSION 1A: CABLE SUPPORTED & LONG-SPAN BRIDGES (I)**  
*The Ritz-Carlton Ballroom, Salon I*

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**Feasibility Study into the Replacement or Augmentation of the Main Cables of a Long Span Suspension Bridge** B. Colford, FETA, Scotland; C. Clark W. A. Fairhurst & Partners, Scotland

**Dynamic Performance Evaluation of Straight and Curved Cable-Stayed Bridges** M. Bhagwat, A. Upadhyay, Indian Institute of Technology Roorkee, India; S. Sasmal, Structural Engineering Research Center, India; B. Novak, University of Stuttgart, Germany

**Evaluation of the Remaining Strength of Main Cables at the Bronx-Whitestone Bridge** K. Mahmoud, Bridge Technology Consulting, USA

**Kanchanaphisek Bridge: A Cable-Stayed Bridge Designed for a Low Maintenance Budget** R. Hsu, P. Vineyard, Parsons Brinckerhoff, USA

10:20 - 12:20 pm **SESSION 1B: BRIDGE ANALYSIS & DESIGN (I)**  
*The Manhattan Ballroom, Salon A*

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**Providing the Best Bridges for the Best Cost** R. Lawrie, Lawrie & Associates LLC, USA

**A New Bridge in Da Nang, Vietnam** R. Dragan, Amman & Whitney, USA

**Taconic State Parkway Ramp 'X' Bridge Project, Westchester, NY** E. Jarosz, J. Kang, Gandhi Engineering, Inc., USA

10:20 - 12:20 pm  
The Manhattan  
Ballroom, Salon A

**Development of Live Load for Long Span Bridges** A. Nowak, M. Lutomirska, University of Nebraska, USA; F. Ibrahim, Federal Highway Administration, USA

10:20 - 12:20 pm  
The Manhattan  
Ballroom, Salon B

**SESSION 1C: BRIDGE TECHNOLOGY**

**The Federal Highway Administration Vision for Bridge Research** I.M. Friedland, Bridge & Structures R&D, Federal Highway Administration, Office of Infrastructure R&D, USA

**Rehabilitation of Bridges using Ultra-High Performance Fibre Reinforced Concrete** E. Brühwiler, Ecole Polytechnique Fédéral de Lausanne, Switzerland

**Folded Plate Technology for Accelerated Bridge Fabrication and Construction** A. Azizinamini, University of Nebraska-Lincoln, USA

**Remote Sensing of Bridge Oscillation using Digital Speckle Photography**  
F.P. Chiang, Stony Brook University, USA

12:25-1:15 pm

**AWARDS CEREMONY: The Ritz-Carlton Ballroom, Salons I, II & III**

1:05-2:05pm

**LUNCH: The Ritz-Carlton Ballroom, Salons II & III**

2:15-4:15 pm  
The Ritz-Carlton  
Ballroom, Salon I

**SESSION 2A: BRIDGE ANALYSIS & DESIGN (II)**

**Addressing SCC-Susceptible ASTM A 514 Steel on the I-275 Twin Bridges over the Ohio River** T. Hopwood, Kentucky Transportation Center, USA; J. Jendrzewski, IMR Metallurgical Services, USA; J. Hartmann FHWA Turner-Fairbank Highway Research Center, USA

**Resiliency of Bridges: A Decision Making Tool** M. Ettouney, Weidlinger Associates, USA; S. Alampalli, NYSDOT, USA

**Screening and Analysis for the Gusset Plates of the Hawk Falls Bridge, Pennsylvania, USA** M. Myers, Arora & Associates PC, USA

**New National LFRD Design Criteria for Long Span Bridges** J. Tse, Parsons Brinckerhoff, USA; F. Ibrahim, Federal Highway Administration, USA

2:15-4:15 pm  
The Manhattan  
Ballroom, Salon A

**SESSION 2B: BRIDGE DECK ASSESSMENT & REPLACEMENT**

**Understanding the Limitations of Exodermic Bridge Decks: A Case Study on the Kingston-Rhinecliff Bridge, Kingston, NY** W. Moreau, New York State Bridge Authority, USA

2:15 -4:15 pm  
The Manhattan  
Ballroom, Salon A

**Shape Analysis of Rib to Floorbeam Connections of Orthotropic Plated Bridge Decks** W. De Corte, Ghent University, Belgium

**Multi-Level Bridge Deck Evaluation Combining Ground Penetrating Radar and Infrared Thermography** K. Maser, B. Miller, Infrasense, Inc., USA

**Buffalo Creek Bridge: A Case Study of Empirical versus Traditional Bridge Deck Design** S. Shoukry, G. William, K. McBride, M. Riad, West Virginia University, USA; J. Wriston, West Virginia Division of Highways, USA

**The History and Benefits of Prefabricated Grid Reinforced Concrete Decks** P. Gase, The D. S. Brown Company, USA; M. Kaczinski, Bridge Grid Flooring Manufacturers Association, USA

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**SESSION 2C: BRIDGE SECURITY & MANAGEMENT**

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**Blast Performance of Various Seismic-Resistant Bridge Pier Concepts**  
M. Bruneau, University of Buffalo, USA; S. Fujikura, ARUP, USA

**Overview of Available Detection Technologies with Applications to Bridge Security** J. Chang, Columbia University, USA; J. Godoy, eClic International Advisory Board, USA

**The Security Assessment of Structural Cable Assemblies in Bridges** T. Klein, WireCo Worldgroup, USA

**Special Topics Studies for Baseline Structural Modeling for Condition Assessment of In-Service Bridges** E. Bell, University of New Hampshire, USA; J. Sipple, Tufts University, USA

**Washington Metropolitan Area Transit Authority's Computerized Structure Inspection System** J. Shaffer, M. Schellhase, InspectTech Systems, USA

4:15 - 4:35 pm

**COFFEE BREAK: Harbor Vista & Skyline Vista**

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**SESSION 3A: DYNAMIC & SEISMIC ANALYSIS**

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**Seismic Design and Seismic Performance Retrofit Study for the Akashi Kaikyo Bridge**  
M. Okuda, S. Fukunaga, K. Endo, Honshu-Shikoku Bridge Expressway Co. Ltd., Japan

**Seismic Analysis of Peljesac Bridge, Croatia**  
Z. Savor, J. Radic, G. Hrelja, D. Lazarevic, J. Atalic, University of Zagreb, Croatia

2:15-4:15 pm  
The Manhattan  
Ballroom, Salon B

4:40-6:30 pm  
The Ritz-Carlton  
Ballroom, Salon I

4:40-6:30 pm  
The Ritz-Carlton  
Ballroom, Salon I

**Selection and Design of the High Load Multirotational Bearings for the St. Anthony Falls Bridge in Minnesota** K. Western, Minnesota Department of Transportation, USA; T. DeHaven, Figg Engineering, USA; R. Watson, R. J. Watson Inc., USA

**Dynamic Behavior of Bridge Mounted Sign Structures** D. Kim, A. Shroff, Jacobs, USA

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**SESSION 3B: BRIDGE HISTORY & AESTHETICS**

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**Walkway over the Hudson - Fast Track Design & Construction** P. Melewski, J. Brizzell, Bergmann Associates, USA; H. Marcelle, The Fort Miller Company, USA; J. DiStefano, Harrison & Burrowes, USA

**Verrugas Viaduct and its Reconstruction, Peru, South America** K. Gandhi, Gandhi Engineering Inc., USA

**Design and Construction of the Third Millenium Bridge over the Ebro River** J.J. Arenas de Pablo, G. Capellan Miguel, H. Beade Pereda, J. Martinez Aparicio, Arenas & Associates, Spain

**A Study of the Evolution of Arch Forms: Eiffel's Maria Pia Bridge and Amman's Bayonne Bridge** A. Thrall, D. Billington, Princeton University, USA

**Design and Erection of Four Signature Urban Bridges Recently Built in Spain** G. Capellan Miguel, J. J. Arenas de Pablo, E. Merino Rasillo, M. Sacristan Montesinos, Arenas & Associates, Spain

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**SESSION 3C: MOVABLE BRIDGES**

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**Innovative Redesign for Cost Savings on a Vertical Lift Bridge** E. Kelly, W. Nickoley, HNTB, USA

**Replacement of a Rare Hanover Skewed Bascule - The Hamilton Avenue Bridge** K. Griesing, Hardesty & Hanover LLP, USA

**Rehabilitation of Bridge Street Bridge Preserving a Nineteenth Century Historic Bascule Lift Span** P. van Hagen, H. Protin, HDR Engineering, USA

**Retrofit and Replacement of Dumbarton Railroad Bridges, California, USA** K. Go, S. Treyger, M. Jones, HNTB, USA; S. Hill, B. Susanto, W. Yang, URS Corporation, USA

4:40-6:30 pm  
The Manhattan  
Ballroom, Salon A

4:40-6:30 pm  
The Manhattan  
Ballroom, Salon B

7:00am **REGISTRATION: Foyer**

8:00-9:30 am **Keynote Session located in The Ritz-Carlton Ballroom, Salons I, II & III**

**KEYNOTE SESSION (II)**

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8:00-8:30 am **Christian Menn's Recent Bridge Designs-- Reducing Structural Elements to the Simplest Solution** Dr. Eugen Brühwiler, Professor, Ecole Polytechnique Fédéral de Lausanne, Switzerland

8:30-9:00 am **A Review of Five Historic Bridge Failures** Dr. Alan W. Pense, Emeritus Professor, Lehigh University, USA

9:00-9:30 am **Manhattan Bridge at 100 Years - An Innovation of Design and Construction** Henry Perahia, PE, Chief Bridge Officer, Brian Gill, PE, Engineer-in-Charge, Manhattan Bridge, New York City Department of Transportation, USA

9:40-10:05 am **COFFEE BREAK: Harbor Vista & Skyline Vista**

10:10 - 12:10 pm **SESSION 4A: CABLE-SUPPORTED & LONG-SPAN BRIDGES (II)**  
*The Ritz-Carlton Ballroom, Salon I*

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**Design-Build of the Indian River Inlet Cable Stayed Bridge** K. Butler, AECOM, USA; D. Robb, Delaware Department of Transportation, USA; P. Halvarsson, Skanska, USA

**Mock-up Experiment for Innovative Health Monitoring Technology for Bridge Cables** K. Mahmoud, Bridge Technology Consulting, USA

**Stay Cable Replacement, High Level Engineering for an Extended Serviceability** E. Mellier, S. Joye, V. Maillet, Freyssinet International, France

**Pre-fabricated Parallel Wire Strand (PPWS) for the New Self-Anchored San Francisco-Oakland Bay Bridge, California, USA** S. Brown, TechStar, Inc., USA

10:10 - 12:10 pm **SESSION 4B: BRIDGE PERFORMANCE & REHABILITATION**  
*The Manhattan Ballroom, Salon A*

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**Enhancing Highway Bridge Performance** H. Ghasemi, Federal Highway Administration, USA; A. Maher, Center for Advanced Infrastructure Transportation, Rutgers University, USA

**The Maintenance of the Main Expansion Joints on the Fourth Road Bridge, Scotland** B. Colford, FETA, Scotland; S. Jones, D. Timby, Atkins, England; K. Brown, Atkins, Scotland

10:10 - 12:10 pm  
The Manhattan  
Ballroom, Salon A

**Reinforced Design of the Filetto Bridge on the Santerno River near Bologna, Italy** G. Gasparini, S. Silvestri, T. Trombetti, C. Ceccoli, University of Bologna, Italy

**Increasing Navigational Clearance - Bayonne Bridge, NY-NJ/USA**

J. LoBuono, HDR Inc., USA

10:10 - 12:10 pm  
The Manhattan  
Ballroom, Salon B

**SESSION 4C: BRIDGE ANALYSIS & DESIGN (II)**

**LRFD versus ASD, the Differences between the Two Standards for Retaining Wall and Abutment Design** S. Esposito Parsons Brinckerhoff, USA; H. Najm, Rutgers University, USA

**Cost, Benefit, and Value of Bridge Load Testing** S. Alampalli, NYSDOT, USA; M. Ettouney, Weidlinger Associates, USA

**Collecting and Using Weigh-in-Motion Data in LRFD Bridge Design** B. Sivakumar, HNTB, USA; M. Ghosn, CUNY City College, USA

**Implication of Increased Live Load on the Design of Prestressed Continuous Concrete Bridges** A. Gergess, University of Balamand, Lebanon; R. Sen, University of South Florida, USA

**Evaluation of Flange Bending Stresses in Non-Composite Steel I-Girder Bridges During Construction** N. Galindez, K. Barth, West Virginia University, USA

12:20-1:20 pm

**LUNCH: The Ritz-Carlton Ballroom, Salons II & III**

**SESSION 5A: BRIDGE INSPECTION, EVALUATION & MANAGEMENT**

**BrlM for Project Delivery and the LifeCycle: State of the Art** A. Shirole, T. Riordan, Arora & Associates, PC, USA; S. Chen, Q. Gao, H. Hu, University of Buffalo, USA; J. Puckett, University of Wyoming, USA

**Developing a Business Model for Bridge Management in Europe**

T. Browne, Collins Engineering Inc., USA; J. Harvey, Waterways Ireland, Ireland; P. Owens, CEI Collins Engineering Ltd., Ireland

**Use of Public-Private Partnerships in Bridge Infrastructure Delivery**

J. Chang, Columbia University & MTA Bridges and Tunnels, USA

**Load Rating Guidance for Bolted and Riveted Gusset Plates in Truss Bridges** F. Ibrahim, Federal Highway Administration, USA

**Merging and Moving Forward with New Jersey Turnpike Authority's Bridge**

**Inspection Program** J. Laird, NJTA, USA; J. Paul, LS Engineering Associates Corporation, USA

1:35-3:35 pm  
The Ritz-Carlton  
Ballroom, Salon I

1:35-3:35 pm  
The Manhattan  
Ballroom, Salon A

## **SESSION 5B: CONCRETE BRIDGES**

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**Experimental Study on Hybrid Steel-Concrete Beam Connected with Perfobond Ribs** S-H. Kim, J-H Won & J-H Ahn, Yonsei University, Korea; C. Lee, GS Engineering & Construction, Korea; S-J. Kim, Sampyo Engineering, Korea

**Route 36 Highlands Bridge over the Shrewsbury River in Highlands, NJ** M. Loizias, Jacobs, USA

**Bridge Monitoring to Measure Corrosion Rate and Concrete Resistivity** C. Moretti, S. Jerath, University of North Dakota, USA

**Upgrading of Ductility and Shear Capacity of Reinforced Concrete Beams of Highway Bridge Bents** W. Zatar, Marshall University, USA; H. Mutsuyoshi, Saitama University, Japan

1:35-3:35 pm  
The Manhattan  
Ballroom, Salon B

## **SESSION 5C: CABLE-SUPPORTED & LONG-SPAN BRIDGES (III)**

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**A Self Anchored Suspension Pedestrian Bridge over Harbor Drive in San Diego, California, USA** D. Fitzwilliam, J. Tognoli, T. Y. Lin International, USA

**Potential of Multi Main-Spans Suspension Bridge** M. Inoue, IHI Corporation, Japan

**Lightweight Concrete for Long Span Bridges** R. Castrodale, K. Harmon, Carolina Stalite Company, USA

**Extending the Life of the Main Cables of Two Major UK Suspension Bridges through Dehumidification** C. Cocksedge, M. Bulmer, AECOM, UK

3:35-4:00 pm

**COFFEE BREAK: Harbor Vista & Skyline Vista**

4:05-6:05 pm  
The Ritz-Carlton  
Ballroom, Salon 1

## **SESSION 6A: BRIDGE INSTRUMENTATION, MONITORING & TESTING**

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**Implementation of a Probabilistic Bridge Health Monitoring Method on a Highway Bridge** A. Scianna, R. Christenson, The University of Connecticut, USA

**Practices for Monitoring Scour Critical Bridges** B. Hunt, STV Inc., USA

**Development of a Baseline Model for an Arch using Diagnostic Tests** J. Liu, WSP Sells Inc., USA; H.W. Shenton, University of Delaware, USA

4:05-6:05 pm  
The Ritz-Carlton  
Ballroom, Salon I

**Modeling and Instrumentation of the Tobin Memorial Bridge in Boston, Massachusetts, USA** B. Brenner, Fay, Spofford & Spondike LLC, USA; E. Santini-Bell, W. Durack, The University of New Hampshire, USA; M. Sanayei, E. Pheifer, Tufts University, USA

4:05-6:05 pm  
The Manhattan  
Ballroom, Salon A

**SESSION 6B: ADVANCED MATERIALS**

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**Lightweight and Recycled Materials for the Construction of the Messina Strait Bridge, Italy** G. DiGiannantonio, Laboratory International, Inc., USA

**Structural Health Monitoring using Wireless Acoustic Emission Sensor Network** T. Hay, S. Jayaraman, D.R. Hay, WavesinSolids LLC, USA

**The New Generation of Waterbone Graffiti Resistant Coatings for Sustainable Bridge Structures** S. Reinstadtler, Bayer Material Science, USA

**Long Term Protection for Approaches and Bridges Using a "Mix Modifier"** D. Zuberer, Chase Construction Products, USA

4:05-6:05 pm  
The Manhattan  
Ballroom, Salon B

**SESSION 6C: BRIDGE FABRICATION & CONSTRUCTION**

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**Reconstruction of the East River Bridges in New York City** R. Csogi, Greenman-Pederson Inc., USA

**Accelerated Bridge Construction using Prefabricated Components: A Puerto Rican Case Study** H. Laureano, Y. Robles, J. O'Connor

**Accelerated Bridge Construction Approach Keeps Tappan Zee Bridge Open** M. Shams, K. Standig, HDR Engineering, USA

**Construction Engineering Considerations for Highway Bridges** B. Chavel, S. Tunstall, R. Eaton, HDR Engineering, USA

**Depressed Roadway Design in Florida - The Okeechobee Design Build Project** N. Canjura, HDR Engineering, USA

6:05 pm

**CONFERENCE ADJOURNS**