

FINAL PROGRAM

ASCE

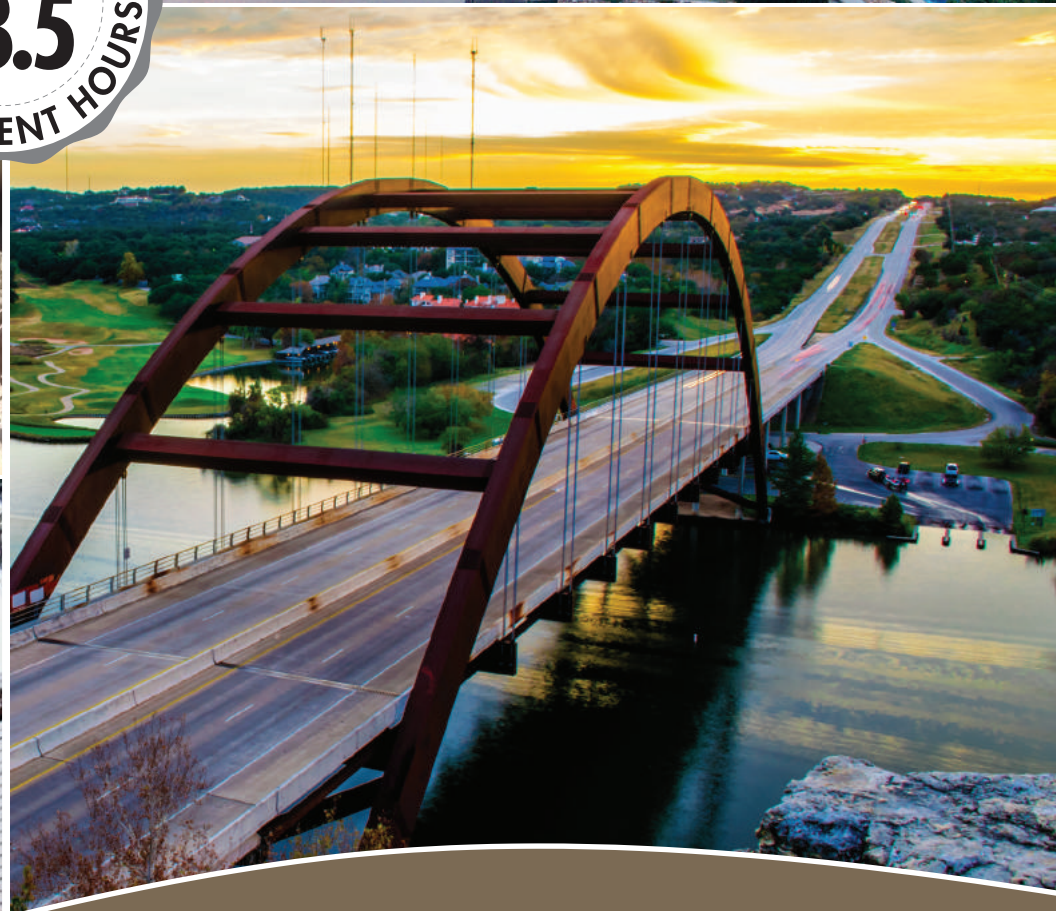
**FORENSIC
ENGINEERING
8th CONGRESS**

Austin, Texas | November 29 – December 2, 2018

Forging Forensic Frontiers



PROFESSIONAL
★ EARN UP TO ★
18.5
★ DEVELOPMENT HOURS ★



Sheraton at the Capitol
www.forensiccongress.org

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Organizing Committee Members

Forensics Congress Steering Committee

Congress Chair

Michael Lester, P.E., M.ASCE

Technical Program Committee

Committee Chair

Alicia Diaz de Leon, P.E., S.E., R.A., M.ASCE

Ron Anthony, Aff.M.ASCE

Ben Cornelius, P.E., M.ASCE

Anthony Dolhon, P.E., M.ASCE

Mike Drerup, P.E., M.ASCE

Josh Kardon, Ph.D., P.E., F.ASCE

Paul Bosela, Ph.D., P.E., F.ASCE

Kim Beasley, P.E., F.ASCE

Leonard Morse-Fortier, P.E., M.ASCE

David Peraza, P.E., M.ASCE

Tara Cavalline, C. Eng, M.ASCE

Glenn Thater, P.E., M.ASCE

Ashwani Dhalwala, P.E., S.E., M.ASCE

Carmen Mulea, P.E., M.ASCE

Kevin McCoy, P.E., M.ASCE

Navid Nastar, Ph.D., P.E., S.E., M.ASCE

Dale Nelson, P.E., F.ASCE

Kevin Parfitt, P.E., F.AEI, M.ASCE

Juan Carlos Araiza, Ph.D., P.E.

Sumanth Cheruku, EIT, A.M.ASCE

John Wylie, P.E., M.ASCE

Clemens J. Rossell, P.E., M.ASCE

Rui Liu, P.E., M.ASCE

Sponsorship Committee

Committee Chair

Ziad Salameh, Ph.D., P.E., M.ASCE

ASCE Staff

Brandi R. Eden, Manager, Conference & Event Services

John Esslinger, Director

James Neckel, Administrator, Committee on Technical Advancement

Schedule-At-A-Glance

(Subject to Change)

Thursday, November 29

7:00 a.m. – 6:00 p.m.	Registration
8:30 a.m. – 5:00 p.m.	Short Course: Conducting Failure Investigations
1:00 – 5:00 p.m.	Short Course: Workshop on the Practice of Forensic Engineering
5:30 – 7:00 p.m.	Welcome Reception

Friday, November 30

7:30 a.m. – 5:00 p.m.	Registration
7:30 – 8:30 a.m.	Continental Breakfast
8:30 – 10:00 a.m.	Opening Plenary Session
10:00 – 10:30 a.m.	Morning Networking Break
10:30 a.m. – 12:00 p.m.	Concurrent Technical Sessions
12:00 - 1:30 p.m.	Networking Lunch
1:00 – 3:00 p.m.	Student Poster Presentations
1:30 - 3:00 p.m.	Concurrent Technical Sessions
3:00 – 3:30 p.m.	Afternoon Networking Break
3:30 – 5:00 p.m.	Concurrent Technical Sessions

Saturday, December 1

8:00 a.m. – 5:00 p.m.	Registration
8:30 – 10:00 a.m.	Concurrent Technical Sessions
10:00 – 10:30 a.m.	Networking Break
10:30 a.m. – 12:00 p.m.	Concurrent Technical Sessions
12:00 – 1:30 p.m.	Awards Luncheon
1:30 – 3:00 p.m.	Concurrent Technical Sessions
3:00 – 3:30 p.m.	Afternoon Networking Break
3:30 – 5:00 p.m.	Concurrent Technical Sessions

Sunday, December 2

7:30 – 11:00 a.m.	Registration
7:30 – 8:30 a.m.	Continental Breakfast
8:30 – 10:00 a.m.	Concurrent Technical Sessions
10:00 – 10:30 a.m.	Morning Networking Break
10:30 a.m. – 12:00 p.m.	Concurrent Technical Sessions

Welcome to the Congress



On behalf of the technical and organizing committees, I welcome you to the Forensic Engineering 8th Congress in Austin, Texas, November 29 – December 2, 2018.

The congress is the leading event for Forensic Engineering professionals, and will bring together the top forensic engineering practitioners, researchers, designers, project and construction managers from the United States and abroad. This cycle we focus on understanding and deploying new approaches and methodologies in our practice, education, and dissemination of failure studies under the theme "Forging Forensic Frontiers." We strive to stay abreast of current tools and techniques in analyzing and evaluating failure of the built environment, while successfully utilizing modern trends in conveying failure data and informing researchers, practitioners, educators, constructors, and many others about forensic approaches. Attendees and readers will see these approaches applied to modern cases and will also see some historic failures examined under a fresh light.

The program includes the following:

- Congress papers presented in four parallel tracks consisting of 30 technical sessions, plus 6 moderated panel discussions.
- The keynote address by Ahmed Amir Khalil, Ph.D., P.E., a Structural Consultant at Applied Science International, LLC, and a leading expert in the fields of collapse analysis and structural vulnerability assessment using high fidelity nonlinear dynamic numerical analysis.
- Earn up to 21.5 Professional Development Hours (PDHs)
- Two pre-congress workshops:
 - Conducting Failure Investigations
 - The Practice of Forensic Engineering
- Dedicated networking events, including the opening welcome reception, lunches, and morning and afternoon coffee breaks.
- The Forensic Engineering Awards presentations.
- FED Committee meetings, of which registrants are encouraged to attend.

We look forward to continuing the tradition of another successful congress.

Again, welcome to Austin!

Michael P. Lester, P.E., M.ASCE

Congress Chair

Element Analytical, PLLC, Knightdale, North Carolina



Short Courses

Thursday, November 29

SHORT COURSES

An additional fee is required at time of registration to attend the pre-congress short courses. You must be registered for the congress to attend the short courses. ASCE reserves the right to cancel events if minimum registration is not met.

Conducting Failure Investigations

(Includes morning break)

8:30 a.m. – 12:00 p.m. |

3.5 PDHs

Instructors: Ronald W. Anthony, Kimball J. Beasley, Stewart M. Verhulst, Jeffrey A. Travis, and Richard S. Barrow

Forensic investigations are unique and the process of investigating a failure will vary depending upon the discipline, material, type of construction, or the mode of failure. Guidelines for Failure Investigations were published by ASCE in 1989 to address the process and the guidelines were updated by the Committee on Forensic Investigation of ASCE's Forensic Engineering Division in 2018. The workshop will provide an overview of failure investigation planning, data collection and analysis, interpretation, and report writing as key tasks of a successful forensic investigation. The workshop will outline the steps in the investigative process and describe the tasks that allow an engineer to present a well-founded analysis and presentation of findings. The role and responsibilities of the engineer as an expert witness will also be discussed, as it relates to the failure investigation. Using the updated Guidelines for Failure Investigations, the workshop should be of benefit to those interested new to the practice of forensic engineering as well as veteran investigators.

Registration Fees:

Members: \$345

Non-Members: \$345

Workshop on the Practice of Forensic Engineering

(Includes afternoon break)

1:30 – 5:00 p.m. |

Instructors: Clemens J. Rossell, P.E., M.ASCE; Leonard Morse-Fortier, P.E., M.ASCE; James Cohen; Lloyd Sonenthal, P.E., M.ASCE

The workshop is based on the latest editions of the ASCE Guidelines for Forensic Engineering Practice. It is divided into four segments: a 10-minute introduction and three 60-minute lecture and discussion periods. Includes one coffee break. The workshop is intended for a broad audience, from engineers, architects, contractors, and attorneys that want to explore this area of practice, to seasoned practitioners that want to engage in a discussion of the relevant issues of the practice.

This half-day workshop covers the main issues related to the practice of Forensic Engineering and includes the following subjects:

- Introduction – What is Forensic Engineering?
- The Business of Forensic Engineering
- Ethics and Forensic Engineering
- The Practitioner and the Legal System

Registration Fees:

Members: \$345

Non-Members: \$345

Thursday, November 29

Welcome Reception and Exhibit Hall Opens

5:30 – 7:00 p.m. |

What a terrific way to kick off the congress! Enjoy hors d'oeuvres. Meet old and new colleagues, and make plans to enjoy the night life that Austin has to offer.

Included in Full, Speaker, Moderator, and Student registration

Additional tickets: \$170

Friday, November 30

Continental Breakfast

7:30 – 8:30 a.m. |

Start the day off with the first breakfast of the congress.

Included in Full, Speaker, Moderator, Student and Daily Monday registrations

Opening Plenary Session

8:30 – 10:00 a.m. | Capitol D-E

KEYNOTE ADDRESS

Ahmed Amir Khalil, Ph.D., P.E.

“System fracture” is an analogy to how metal often fails. Any type of metal, no matter how high its quality of manufacture, always has discontinuities, cracks, and weaknesses, such as slag inclusions at the microscopic level. And given enough stress over time, often aggravated by corrosion, these weak points will link up into a line of failure. The metal will suddenly break all the way through, often with a loud bang ... that is, if people on the job haven't been paying attention to the telltale signs of failure in metal parts.

Many historic disasters have been caused by metal fractures that were allowed to lengthen inside the structure of ships, aircraft, railroad rails, towers, and bridges.

Ahmed Khalil is a structural consultant at Applied Science International, LLC (ASI) and has 20 years of structural engineering experience managing projects involving collapse analysis, demolition design, blast analysis, structural vulnerability assessment, and forensic engineering based on high fidelity nonlinear dynamic numerical analysis. He has authored dozens of papers on applications of applied element method in earthquake analysis, progressive collapse analysis, blast analysis, and other types of extreme loads analysis. He is a member of the Structural Engineering Institute (SEI) Disproportionate Collapse Technical Committee as well as the American Society of Engineers and the American Concrete Institute. Khalil has delivered numerous invited speeches at conferences, engineering institutes, and universities in the United States, Europe, Australia, South America, and the Middle East.

Guest Orientation Breakfast

9:00 – 10:00 a.m. |

Guests are invited to meet and mingle with other guests and spouses at this continental breakfast. The hotel concierge will give a brief presentation about places to visit in Austin.

Open to registered guests.

Morning Networking Break

10:00 – 10:30 a.m. |

Technical Sessions

10:30 a.m. – 12:00 p.m.

See page 7 for a list of presentation and rooms.

Networking Lunch

12:00 – 1:30 p.m. |

Included in Full, Speaker, Moderator, Student and Daily Monday registrations

To purchase additional tickets: \$165

Technical Sessions

1:30 – 3:00 p.m.

See page 7 for a list of presentations and rooms.

Afternoon Networking Break

3:00 – 3:30 p.m. |

Technical Sessions

3:30 – 5:00 p.m.

See page 8 for a list of presentations and rooms.

Saturday, December 1

Technical Sessions

8:30 – 10:00 a.m. |

See page 9 for a list of presentations and rooms.

Morning Networking Break

10:00 – 10:30 a.m. |

Technical Sessions

10:30 a.m. – 12:00 p.m.

See page 10 for a list of presentation and rooms.

Congress Agenda *(continued)*

Awards Luncheon

12:00 – 1:30 p.m. |

The ASCE Forensic Engineering Division (FED) has announced the recipients of the 2015, 2016, and 2017 Forensic Engineering Awards. The Forensic Engineering Award recognizes individuals for outstanding contributions to the field of forensic engineering.

2015 Forensic Engineering Award

- Joshua B Kardon, Ph.D., S.E., P.E.

2016 Forensic Engineering Award

- Lloyd M Sonenthal, P.E.

2017 Forensic Engineering Award

- Leonard J Morse-Fortier

Each year the ASCE FED also presents awards to authors of the outstanding papers published in the *Journal of Performance of Constructed Facilities* the preceding year, and awards to outstanding reviewers. Recipients of these journal awards are:

2015 Outstanding Paper Award

- Joshua B Kardon, Ph.D., S.E., P.E.

2016 Outstanding Paper Award

- Lloyd M Sonenthal, P.E.

2017 Outstanding Paper Award

- Leonard J Morse-Fortier

Included in Full, Speaker, Moderator, Student and Daily Tuesday registration

Technical Sessions

1:30 – 3:00 p.m.

See page 11 for a list of presentations and rooms.

Afternoon Networking Break

3:00 – 3:30 p.m.

Technical Sessions

3:30 – 5:00 p.m.

See page 12 for a list of presentations and rooms.

Sunday, December 2

Continental Breakfast

7:00 – 8:30 a.m. |

Technical Sessions

8:30 a.m. – 10:00 a.m.

See page 13 for a list of presentations and rooms.

Morning Networking Break

10:00 – 10:30 a.m. |

Technical Sessions

10:30 a.m. – 12:00 p.m.

See page 13 for a list of presentations and rooms.



Technical Program

Track A | Capitol View Terrace North Buildings and Forensics Education

Track B | Capitol View Terrace South Forensic Investigations

Track C | Capitol Ballroom A-C Professional Practice

Track D | Capitol Ballroom F-H Structures

Friday, November 30, 2018

8:00 – 10:00 a.m. **Plenary Breakfast and Keynote Speaker**

10:00 – 10:30 a.m. **Morning Networking Break in the Exhibit Hall**

10:30 a.m. – 12:00 p.m. **Concurrent Technical Sessions**

Session A1 | Roofing Moisture/Condensation
Moderator: Paul Bosela

Session B-1 Investigation Methodology and Approach I – Building Failures
Moderator: David Peraza

Session C-1 Panel Discussion (Split)
Moderator: Mike Derup

Session D-1 Repairs and Remediation
Moderator: Pat Batchelor

Structures Built Over Crawl Spaces Develop Condensation Moisture and Mold Due to Improper Construction Techniques not in Compliance with Building Code Requirements Necessary for Adequate Performance Author: Mel A. Underwood, *Forensic Structural Engineer, Senior Managing Consultant, ESI (Engineering Systems Incorporated)*; Co-Author: Steven Faupel, *Structural Forensic Engineer, Staff Consultant, Engineering Systems Incorporated (ESI)*
Cold Liquid-Applied Reinforced Membrane Roofing Application Over Historic Beaux-Arts Substrates Author: Jason D. Gregorie, P.E., M.ASCE, *Partner, Applied Building Sciences, Inc.*
Commercial Roofing Condensation, Lessons Learned Author: James W. Jordan, P.E., S.E., *Vice President, Rimkus Consulting Group, Inc.*; Andrew J. Sharer, P.E., *Senior Consultant, Rimkus Consulting Group, Inc.*
Hidden Moisture in Low Slope Roof Systems Can Lead to Structural Failure Author: Carl J. Schoenberger, P.E., S.E., *Principal Structural Engineer, EFI Global, M. ASCE*; Co-Author: Joseph A. Kraus, P.E., *Structural (Forensic) Engineer, EFI Global*

Forensic Investigation of a Warehouse Roof Collapse Due to Snow Load Author: Franz N. Rad, P.E., S.E., F.ASCE, F.ACI, *Professor of Civil and Environmental Engineering, Arthur M. James Professor of Structural Engineering, Portland State University*
Investigation of Collapsed Jet Hangars Author: Ibrahim Erdem, Ph.D., P.E., S.E., *Managing Engineer, Exponent*; Co-Author: David Peraza, P.E., *Exponent*
Building Failure Investigations – First Impression Myopia Author: Kimball J. Beasley, P.E., F.ASCE, *Senior Principal, Wiss Janney Elstner Associates, Inc.*
Collapse of Two Steel Buildings after Snow Accumulated on Their Roofs Author: Zeno Martin, P.E., S.E., *Associate Principal, Wiss Janney Elstner Associates*; Co-Author: Trent L. Tinney, P.E., *Associate III, Wiss Janney Elstner Associates*

Marketing a Forensic Engineering Practice (Why LinkedIn Is Your Best Friend in Building your Book of Business) Author: Patrick Batchelor, *Professional Engineer, President, Engineering Search Partners*
NYC’s GIS Tools for Safe Buildings
Session Chair: Timothy D. Lynch, P.E., *Chief Engineer Enforcement, NYC Department of Buildings*

Evaluation of the Structural Failure of Three Retaining Walls Author: Randall Bernhardt, P.E., S.E., F.ASCE, F.S.E.I., *Engineering Systems Inc.*
Two-Way Shear Strengthening of Cast-in-Place Lightweight Concrete Flat Slab Author: Connor J. Bruns, S.E., *Senior Staff I - Structures, Simpson Gumpertz & Heger*; Co-Authors: Corey J. Aumiller, *Staff I - Structures, Simpson Gumpertz & Heger*; Terry R. McDonnell, S.E., P.E., *Principal, Simpson Gumpertz & Heger*
Steel Framed Parking Garage Corrosion Assessment, Structural Analysis, and Shoring Repairs Author: Jaret M. Lynch, P.E., *Associate Principal, Wiss, Janney, Elstner Associates.*; Co-Author: Hannah Rakowski, E.I.T., *Associate II, Wiss, Janney, Elstner*
Evaluation and Mitigation of Post-Tensioned Steel Corrosion Authors: David Whitmore, P.Eng, MBA, NACE 4, *President, Vector Corrosion Technologies, Ltd*; Tore O. Arnesen, P.E, S.E. M.SCE, NACE Tester, *Special Projects Engineer, Vector Corrosion Technologies, Inc.*

1:30 – 3:00 p.m. **Concurrent Technical Sessions**

Session A-2 Building Envelope
Moderator: Rui Liu

Session B-2 Panel Discussion
Moderator: Ben Cornelius

Session C-2 Standard of Care and Engineering Judgement
Moderator: Josh Kardon

Session D-2 Wood Structures
Moderator: Paul Bosela

Hail Impact Effects on the Wind Uplift Resistance of Fully Adhered Single-Ply Roof Author: Justin Donaldson, P.E., *Senior Project Director and Discovery Lab Director, Nelson Forensics*; Co-Authors: Marco DeLeon, P.E., *Senior Vice President, Nelson Forensics*; Kyle Savage, P.E., *Lab Technician, Nelson Forensics*
Refuting the Presumption of Hurricane-Caused Water Intrusion Author: Jeff Wilemon, *Building Scientist, GHD*; Co-Author: Bob Mulcahy, *Building Scientist, GHD Services, Inc.*
Wind-Induced Damage to Rooftop Solar Arrays and Roofs Author: C. Can Simsir, Ph.D., P.E., *Senior Associate, Thornton Tomasetti*; Co-Author: Anurag Jain, Ph.D., P.E., *Senior Principal, Thornton Tomasetti*
Mid-Rise Wood Frame Construction: A Good Idea or Are We Asking for Trouble? Author: Derek Hodgin, P.E., RBEC, CCA, *President, Construction Science and Engineering, Inc.*

Sampling Guideline (CFI)
Moderator: Benjamin Cornelius, P.E., S.E., M.ASCE, *Partner, LERA Consulting Structural Engineers*
Panel Members: Jason D. Gregorie, P.E., M.ASCE, *Partner, Applied Building Sciences, Inc.*; Sumanth Cheruku, EIT, *Staff Engineer, Pivot Engineers*; Mark Churpek, P.E., M.ASCE, *Unit Manager and Associate Principal, Wiss, Janey, Elstner Associates*; Roberto Marte, P.E., M.ASCE, *Principal, Spec Engineering Services*; John Wyllie, P.E., M.ASCE, *Project Engineer, Construction Science and Engineering, Inc.*

A Framework to Prevent Construction Failures due to Computer-Related Errors Author: Ilias Ortega, *General Director, Dr. J.I. Ortega, Design Studio*
What is the Standard of Care? Author: Joshua Ben Kardon, S.E., Ph.D., F.ASCE, *Principal Structural Engineer, Joshua B. Kardon and Co.*
Forensic Engineer’s Ethical Code in the Investigation of Sinkhole Activity: Case Studies Author: Lauren R. Millman, Ph.D., P.E., *Senior Project Engineer, Thornton Tomasetti*
Construction Documents Effects on Field Issues and Accidents Author: Daniel Wojnowski, Sr., Ph.D., P.E., *Senior Vice President, Thornton Tomasetti*; Co-Author: Liling Cao, Ph.D., P.E., *Vice President, Thornton Tomasetti*

Evaluation and Strengthening of Existing Wood Framing Structure Author: Byoungjun Lee, Ph.D, P.E., S.E., *Senior Engineer, WDP & Associates Consulting Engineers, Inc.*; Co-Authors: Gerald A. Darlymple, P.E., *Principal, WDP & Associates Consulting Engineers, Inc.*; Mark Knapp
Progressive Strength Loss of Fire Retardant Treated Lumber, A Case Study Authors: Carmen C. Mulea, P.E., *Principal, Engineered Building Solutions, Inc.*; Michael J. Drerup, P.E., M.ASCE, *Principal, Drerup Building Performance Engineering, PLLC*
Lessons Learned from Recent Failures of Structural Timber Appurtenant Assemblies Author: William A. Fennell, P.E., C.P.E.ng, M.ASCE, *Principal Engineer, Engineered Research Group, Inc.*; Co-Author: Kevin S. Moore, P.E., S.E., M.ASCE, *Senior Principal, Simpson, Gumpertz & Heger, Inc.*
Examination of Wood Truss Failures by Creep Rupture Author: Zeno Martin, P.E., S.E., *Associate Principal, Wiss, Janney Elstner Associates*; Co-Authors: Kip Gatto, P.E., S.E., *Associate Principal, Wiss, Janney Elstner Associates*; Jarkko Simonen, P.E., *Senior Associate, Wiss, Janney Elstner Associates*; Kent Sasaki, P.E., S.E., *Wiss, Janney, Elstner Associates, Inc.*

Technical Program *(continued)*

Track A | Capitol View Terrace North Buildings and Forensics Education

Track B | Capitol View Terrace South Forensic Investigations

Track C | Capitol Ballroom A-C Professional Practice

Track D | Capitol Ballroom F-H Structures

Friday, November 30, 2018 *(continued)*

3:00 – 3:30 p.m.		Afternoon Break	
3:30 – 5:00 p.m.		Concurrent Technical Sessions	
<p>Session A-3 Building Façade and Systems Moderator: Tony Dolhon</p> <p>Building System Failures Due to Improper Interaction, Understanding How Mechanical Systems and Building Enclosures Must Work Together Author: Sean OBrien, P.E., LEED AP, Senior Principal, Simpson Gumpertz & Heger, Inc.; Co-Authors: Brienna Rust, Staff II, Simpson Gumpertz & Heger, Inc.; Amrish Patel, P.E., Senior Project Manager, Simpson Gumpertz & Heger, Inc.</p> <p>Forensic Evaluation and Repair of Failures in 41-Story Granite Façade Authors: Benjamin Pavlich, S.E., Associate, Thornton Tomasetti, Inc.; William D. Bast, S.E., P.E., Principal, Thornton Tomasetti; Co-Authors: Rachel Michelin; Lee Fink</p> <p>Wind-Induced Cracks in Gypsum Board Wall Panels Author: Bradley L. East, M.S., P.E., M.ASCE, Senior Project Engineer, DeSimone Consulting Engineers</p>	<p>Session B-3 Investigation Methodology and Approach II Moderator: Clemens Rossell</p> <p>Field Experience and Lessons Learned in Bending High-Strength Steel Reinforcement Author: Kevin Conroy, S.E., P.E., Senior Project Manager, Simpson Gumpertz Heger, Inc.; Co-Authors: Craig Brown, Principal Engineer, Metallurgy, Element Materials Technology; Neal S. Anderson, S.E., P.E., Staff Consultant, Simpson Gumpertz Heger, Inc.</p> <p>Fitness-For-Service of Heavy Structural Steel Weldments Author: Eric Cheifet, Senior Engineer, LPI, Inc.; Co-Authors: Evan Schickel, Senior Engineer, LPI, Inc.; Robert Vecchio, P.E., M.ASCE, Principal</p> <p>Rails in Retractable Roofs: Overview of the Design Methodology and a Case Study Author: Antonio De Luca, Ph.D., P.E., Senior Project Engineer, Thornton Tomasetti; Co-Authors: Liling Cao, Ph.D., P.E., Vice President, Thornton Tomasetti; Marguerite Pinto, P.E., Vice President, Thornton Tomasetti; Elisabeth Malsch, Ph.D., P.E., Principal, Thornton Tomasetti</p>	<p>Session C-3 Panel Discussion Moderator: Mike Derup</p> <p>Claims Red. Thru Failure Understanding Moderator: Michael J. Drerup, P.E., M.ASCE, Principal, Drerup Building Performance Engineering, PLLC</p> <p>Panel Members: Joshua Ben Kardon, S.E., Ph.D., FASCE, Principal Structural Engineer, Joshua B. Kardon and Co.; Ronald W. Anthony, Aff M. ASCE, President and Wood Scientist, Anthony & Associates, Inc.; Kevin Parfitt, P.E., Professor, The Pennsylvania State University</p>	<p>Session D-3 Natural Disaster I – Earthquake Moderator: Tara Cavalline</p> <p>Earthquakes in Oklahoma, Adapting to a New Reality Author: Norb Delatte, P.E., F.ASCE, M.R. Lohmann Endowed Professor of Engineering and Head, School of Civil and Environmental Engineering, Oklahoma State University; Co-Author: Alex Greer</p> <p>Forensic Evaluation of Earthquake-Damaged Reinforced Concrete Shear Walls Author: Jonathan P. Rivera, Ph.D., Senior Engineer, Thornton Tomasetti; Co-Author: Andrew Whittaker, Ph.D., P.E., S.E., F.ASCE, F.S.E.I, F.ACI, SUNY Distinguished Professor and MCEER Director, University at Buffalo, Department of Civil, Structural, and Environmental Engineering</p> <p>Lessons Learned from the Deadliest Earthquake of 2017: Study of Damage and the Crisis Response Preparedness Author: Hossein Ataie, Ph.D., M.B.A., P.E., P.Eng., F.ASCE, Clinical Assistant Professor, University of Illinois at Chicago; Co-Author: Mustafa Mahamid, Ph.D., S.E., P.E., P.Eng, F.S.E.I, F.ASCE, Clinical Associate Professor, University of Illinois at Chicago; Didem Ozevin, Ph.D., P.E., M.ASCE, Associate Professor, University of Illinois at Chicago; Ataollah Taghipour Anvari, MSCE, S.M.ASCE, University of Illinois at Chicago</p> <p>Failing Forward, Construction Failure Case Studies Author: Rui Liu, Ph.D., P.E., Assistant Professor, Kent State University</p>



Track A | Capitol View Terrace North Buildings and Forensics Education

Track B | Capitol View Terrace South Forensic Investigations

Track C | Capitol Ballroom A-C Professional Practice

Track D | Capitol Ballroom F-H Structures

Saturday, December 1, 2018

7:00 – 8:30 a.m. Breakfast			
8:30 – 10:00 a.m. Concurrent Technical Sessions			
Session A-4 Performances Moderator: Tony Dolhon	Session B-4 Investigation Methodology and Approach III Moderator: Mike Derup	Session C-4 Forensic Practices Moderator: Ziad Salameh	Session D-4 Panel Discussion Moderator: John Abruzzo
<p>Elastomeric Coatings: A Qualitative Failure Analysis Author: Ralph E. Moon, B.S. MS. Ph.D., <i>Principal, GHD Services Inc.</i>;</p> <p>Co-Authors: Nizar Al-Rafie, M.Eng., <i>Building Scientist, GHD Services, Inc.</i>; Michael Bass</p> <p>Heads Up – Flashing Ahead Author: Robert Bateman, <i>Staff Consultant, AIA</i></p> <p>Discoloration of Glass Panel Sealants Author: Rui Liu, Ph.D., P.E., <i>Assistant Professor, Kent State University</i>; Co-Author: Peter Marks, Architect, <i>Assistant Professor, Kent State University</i></p> <p>Duration of Loss: Carpet Tack Deterioration Over an Eight-Year Wetting Period Authors: Ralph E. Moon, B.S. MS. Ph.D., <i>Principal, GHD Services Inc.</i>; Don Nehrig, EIT, <i>Associate, GHD Services, Inc.</i>; Chin S. Yang</p>	<p>Understanding Wood Moisture Movement in Diagnosing Problems with Wood-Frame Structures Author: Leonard Morse-Fortier, Ph.D., P.E., M.ASCE, <i>Staff Consultant, Simpson Gumpertz & Heger Inc.</i></p> <p>Investigation Methodology of a Sinking Building Author: Adam A. Yala, Ph.D., P.E., <i>Vice President, JS Held Inc.</i></p> <p>No-Touch Inspections: Challenges in Non-Destructive Evaluation of Subjects that Are Buried and Underwater Authors: Robert Flynn, <i>Senior Engineer, Thornton Tomasetti</i>; Francesca Brando, Ph.D., <i>Senior Project Engineer, Thornton Tomasetti</i>; Marguerite Pinto, P.E., <i>Vice President, Thornton Tomasetti</i>; Elisabeth Malsch, Ph.D., P.E., <i>Principal, Thornton Tomasetti</i></p> <p>Insurance Investigation of Damaged Wood Bowstring Trusses Author: Alexandar J. Mlynarczyk, P.E., M.ASCE, <i>Senior Associate, Wiss, Janney, Elstner Associates, Inc.</i></p>	<p>Cases Studies in Engineering Liability from Flawed Design Decisions Author: Michael P. Lester, P.E., <i>Partner, M.ASCE</i></p> <p>Settlement of Building Floor Slab-on-Grade Constructed on Unsuitable Urban Fill In Chicago Session Chair: Brett Gitskin, <i>Professional Engineer, President/Senior Principal Engineer, Member</i>; Co-Chair: Danilo A. Guevarra, BSCE, <i>Senior Project Engineer, Investigator</i></p> <p>Forensic Engineering, A Tool for Solving Problems? Author: Ramon L. Carrasquillo, Ph.D., P.E., <i>President, Carrasquillo Associates, LTD</i>; Co-Author: David Rothstein, Ph.D., PG, <i>President, DRP, A Twining Company</i></p> <p>Failures in Construction: Learning from Everyday Forensic Engineering Author: Henrietta R. Baker, MEng GMICE, <i>Ph.D. Candidate, School of Engineering, University of Edinburgh</i>; Co-Authors: Simon D. Smith, FICE, CEng, <i>Senior Lecturer, School of Engineering, University of Edinburgh</i>; Gordon Masterton, FREng, FRS.E., FICE, FStructE, FIES, MCIWEM, <i>Chair of Future Infrastructure, School of Engineering, University of Edinburgh</i>; Bill Hewlett, FICE, CEng, <i>Technical Director, Costain Group PLC</i></p>	<p>Discussion of I-35W Bridge Moderator: John Abruzzo, P.E., S.E., <i>Managing Principal, Thornton Tomasetti Inc.</i>;</p> <p>Panel Members: Howard J. Hill, Ph.D., P.E., S.E., <i>Senior Principal, Wiss Janney Elstner Associates</i>; Ron Hamburger, P.E., S.E., <i>Senior Principal, Simpson Gumpertz & Heger</i>; Elisabeth Malsch, Ph.D., P.E., <i>Principal, Thornton Tomasetti</i></p>
10:00 – 10:30 a.m. Networking Break			



Technical Program *(continued)*

Track A | *Capitol View Terrace North Buildings and Forensics Education*

Track B | *Capitol View Terrace South Forensic Investigations*

Track C | *Capitol Ballroom A-C Professional Practice*

Track D | *Capitol Ballroom F-H Structures*

Saturday, December 1, 2018 *(continued)*

10:30 a.m. – 12:00 p.m.

Concurrent Technical Sessions

Session A-5 Panel Discussion Moderator: John Wylie	Session B-5 Investigation Methodology and Approach IV – Fire Engineering Moderator: Kasra Ghahremani	Session C-5 Concrete Failure and Repair / ACI 562 Moderator: Keith Kesner	Session D-5 Natural Disasters II – Hurricane Moderator: David Peraza
<p>Preconstruction Surveys Moderator: Benjamin Cornelius, P.E., S.E., M.ASCE, <i>Partner, LERA Consulting Structural Engineers</i></p> <p>Panel Members: James S. Cohen, P.E., M.ASCE, <i>James Cohen Consulting</i>; Nathaniel B. Smith, P.E., M.ASCE, <i>Principal, Simpson Gumpertz & Heger</i>; Lloyd M. Sonenthal, P.E., M.ASCE, <i>Attorney at Law, Consulting Forensic Engineer, Lloyd M. Sonenthal, Ltd.</i></p>	<p>Application of Performance-based Fire Engineering To Existing Structures and Forensic Investigations Authors: Reza Imani, Ph.D., P.E., <i>Project Engineer, Thornton Tomasetti, Inc.</i>; Luciana Balsamo, Ph.D., <i>Senior Engineer, Thornton Tomasetti, Inc.</i>; Pierre Ghisbain, Ph.D., <i>Project Engineer, Thornton Tomasetti</i>; Jenny Sideri, Ph.D., <i>Senior Engineer, Thornton Tomasetti, Inc.</i>; Ali Ashrafi, Ph.D., P.E., LEED AP, <i>Associate Principal, Thornton Tomasetti</i></p> <p>Emergency Structural Engineering Support of a Fire Origin and Cause Analysis Author: Daniel J. Turner, P.E., M.ASCE, M.CE., <i>Senior Staff Consultant, ESI</i>; Co-Author: Dennis Scardino, P.E., M.ASME, IAAI-CFI, CFEI, CFII, CVFI, <i>Senior Managing Consultant, ESI</i></p> <p>Evaluation of Fire Effects on Precast, Prestressed Concrete Members Author: Filippo Masetti, P.E., <i>Senior Project Manager, Simpson Gumpertz & Heger, Inc.</i>; Co-Author: Gloriana A. Martinez, <i>Staff II, Simpson Gumpertz & Heger, Inc.</i>; Co-Author: Sean O'Brien, P.E., LEED AP, <i>Senior Principal, Simpson Gumpertz & Heger, Inc.</i></p> <p>Fire Retardant Treated (FRT) Lumber (circa 1960 to 1980) Can Experience Sudden Structural Failure When Exposed to High Humidity Author: Joseph A. Kraus, P.E., <i>Structural (Forensic) Engineer, EFI Global</i>; Co-Author: Carl J. Schoenberger, P.E., S.E., <i>Principal Structural Engineer, EFI Global, M. ASCE</i></p>	<p>Use of the ACI 562-16 Concrete Repair Code: Assessment and Repair of Pre-Topped Precast Double Tee Flange Connections Session Chair: Keith Kesner, Ph.D., P.E., S.E., <i>Senior Project Manager, CVM Engineers</i>; Co-Chairs: Jeremiah Fasl, P.E., S.E., <i>Senior Associate, Wiss, Janney, Elstner Associates, Inc.</i>; Carl Larosche, P.E., <i>Principal, Wiss, Janney, Elstner Associates, Inc.</i></p> <p>Double-Tee Repairs: Three Case Studies Author: Jeremiah Fasl, P.E., S.E., <i>Senior Associate, Wiss, Janney, Elstner Associates, Inc.</i>; Co-Author: Carl Larosche, P.E., <i>Principal, Wiss, Janney, Elstner Associates, Inc.</i></p> <p>Load Tests of Concrete Structures: Allowing the Project to Determine Test Protocol Author: Aaron Larosche, Ph.D., P.E., S.E., <i>Project Engineer, Pivot Engineers</i>; Co-Authors: Michael Ahern, P.E., <i>Principal, Pivot Engineers</i>; Randall W. Poston, Ph.D., P.E., S.E., NAE, <i>Sr. Principal, Pivot Engineers</i></p>	<p>Forensic Investigation of Aboveground Storage Tank Failures during Hurricane Harvey Using Fragility Models Author: Carl Bernier, MSc, <i>Graduate Research Assistant, Rice University</i>; Co-Author: Jamie E. Padgett, Ph.D., <i>Assistant Professor, Rice University</i></p> <p>General Overview and Case Studies of Damages in Puerto Rico due to Hurricane Maria Authors: Hector J. Cruzado, Ph.D., P.E., M.ASCE, <i>Professor and Department Head, Polytechnic University of Puerto Rico</i>; Gustavo E. Pacheco-Crosetti, Ph.D., P.E., M.ASCE, <i>Professor, Polytechnic University of Puerto Rico</i></p> <p>Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant Author: Kevin Mesyef, P.E., S.E., C.W.I., M. ASCE, <i>Senior Consultant, Engineering Systems Inc.</i> Co-Authors: Joseph Riddle, P.E., S.E., M.ASCE, <i>Consultant, Engineering Systems Inc.</i>; Dan Turner, P.E., <i>Consultant, Engineering Systems Inc.</i>; Randall Bernhardt, P.E., S.E., F.ASCE, F.S.E.I., <i>Engineering Systems Inc.</i></p> <p>Numerical Modeling of Power Delivery and Telecommunications Infrastructure Performance for Hurricanes Harvey, Irma and Maria Author: Dorothy Reed, Ph.D., P.E., <i>Professor, University of Washington</i>; Co-Author: Shuoqi Wang, Ph.D., <i>Research Associate, University of Washington</i></p>



Track A | Capitol View Terrace North Buildings and Forensics Education

Track B | Capitol View Terrace South Forensic Investigations

Track C | Capitol Ballroom A-C Professional Practice

Track D | Capitol Ballroom F-H Structures

Saturday, December 1, 2018 *(continued)*

1:30 – 3:00 p.m.

Concurrent Technical Sessions

Session A-6 Panel Discussion Moderator: Dennis McCann	Session B-6 Investigation Methodology and Approach V Moderator: Navid Nastar	Session C-6 Performance of Concrete Material/Structures Moderator: Tara Cavalline	Session D-6 2017 Hurricane Season – Reconnaissance Efforts and Lesson Learned Moderator: Dorothy Reed and Jean-Paul Pinelli
<p>Adjacent Construction Moderator: Dennis M. McCann, Ph.D., P.E., <i>Vice President & Chief Operating Officer, CTLGroup</i></p> <p>Panel Members: Eric J. Vanduyne, S.E., P.E., <i>Senior Engineer, CTLGroup</i>; David E. Kosnik, Ph.D., P.E., <i>Senior Engineer, CTLGroup</i>; Michael J. Drerup, P.E., M.ASCE, <i>Principal, Drerup Building Performance Engineering, PLLC</i>; David Peraza, P.E., <i>Exponent</i>; William D. Bast, S.E., P.E., <i>Principal, Thornton Tomasetti</i></p>	<p>A Case Study of Shoring and Column Failures of a Flat Plate Reinforced Concrete Structure Author: Byoung-jun Lee, Ph.D, P.E., S.E., <i>Senior Engineer, WDP & Associates Consulting Engineers, Inc.</i>; Co-Author: John E. Peterson, P.E., <i>Principal, WDP & Associates Consulting Engineers, Inc.</i></p> <p>Observations from Forensic Investigation of The Harmon Tower Author: Navid Nastar, Ph.D., P.E., S.E., F. ASCE, <i>Principal, Brandow & Nastar, Inc.</i>; Co-Authors: Gregg Brandow, Ph.D., P.E., S.E., M. ASCE, <i>Principal, Brandow & Nastar, Inc.</i>; Alex Nothnagel, P.E., <i>Professional Engineer, Brandow & Nastar, Inc.</i></p> <p>Arctic Structure Forensic Study Author: Nicholas Triandafilou, P.E., S.E., M.ASCE, <i>Structural Group Manager, Brindley Engineering Corporation</i>; Co-Authors: Mustafa Mahamid, Ph.D., S.E., P.E., P.Eng, F.S.E.I, F.ASCE, <i>Clinical Associate Professor, University of Illinois at Chicago</i>; Jakub Szewczyk, C.W.I., <i>Project Engineer, Brindley Engineering Corporation</i></p> <p>Hyatt Regency Skywalk Collapse: Evaluation of the Box Beam Design Author: Randall Bernhardt, P.E., S.E., F.ASCE, F.S.E.I, <i>Engineering Systems Inc.</i></p>	<p>Implications of Uncertainty in Service Life Modeling: Example of Chloride-Induced Corrosion of Reinforcement in RC Structure Author: Sumanth Cheruku, EIT, <i>Staff Engineer, Pivot Engineers</i></p> <p>Energy Absorption of Cementitious Composites Incorporating Carbon Nanotubes Subjected to Low-Velocity Impact Tests Author: Robabeh Jazaei, Ph.D. Candidate, <i>University of Nevada, Las Vegas</i>; Co-Authors: Moses Karakouzian, Ph.D., P.E., <i>Professor, University of Nevada, Las Vegas</i>; Brendan O'Toole, Ph.D., P.E., <i>Professor, Chair of Mechanical Engineering and Director of Mendenhall Innovation Program, University of Nevada, Las Vegas</i>; Jaeyun Moon, Ph.D., <i>Assistant Professor, University of Nevada, Las Vegas</i>; Samad Gharehdaghi, Ph.D., <i>University of Nevada, Las Vegas</i></p> <p>Evaluation & Repair of Alkali-Silica Reaction Damage to Existing Concrete Wastewater Infrastructure Author: Jeffrey Wouters, MS, P.E., M.ASCE, <i>Associate, CP&Y</i></p> <p>Causation of Near-Surface ASR at Concrete Slabs-on-Grade Author: Ryan D. Kalina, M.S., P.E., M.ASCE, <i>Project Director</i>; Co-Authors: Ryan T. Chancey, Ph.D., P.E., <i>President, Nelson Forensics, LLC</i>; Stewart M. Verhulst, P.E., RRC, <i>Vice President, Nelson Forensics</i></p>	<p>Performance of Low-Rise Construction Under Wind and Coastal Hazards During the Landfall of Hurricane Harvey Author: Tracy Kijewski-Correa, Ph.D., Leo E. and Patti Ruth Linbeck Collegiate Chair and Associate Professor, <i>University of Notre Dame</i>; Co-Authors: Jie Gong, <i>Associate Professor, Civil and Environmental Engineering, Rutgers University</i>; Andrew B. Kennedy, Ph.D., <i>Associate Professor, University of Notre Dame</i>; J. Arn Womble, M.ASCE, P.E., <i>Assistant Professor of Civil Engineering, West Texas A&M University</i>; Steve C.S Cai, Ph.D., <i>Edwin B and Norma S Mcneil Professor, Louisiana State University</i>; John Cleary, Ph.D., P.E., <i>Associate Professor, University of South Alabama</i>; Thang Dao, Ph.D., <i>Assistant Professor, University of Alabama</i>; Fernanda Leite, Ph.D., <i>Associate Professor, University of Texas at Austin</i>; Daan Liang, <i>Professor, Professor of Civil, Environmental and Construction Engineering, Texas Tech University</i>; Kara Peterman, Ph.D., <i>Assistant Professor, University of Massachusetts Amherst</i></p> <p>Overview of Damage Observed in Regional Construction During the Passage of Hurricane Irma over the State of Florida Author: Jean-Paul Pinelli, Ph.D., P.E., <i>Professor, Dept. of Civil Engineering and Construction Management</i>; Co-Authors: David B. Roueche, A.M.ASCE, <i>Assistant Professor, Auburn University</i>; Tracy Kijewski-Correa, Ph.D., Leo E. and Patti Ruth Linbeck Collegiate Chair and Associate Professor, <i>University of Notre Dame</i>; David O. Prevatt, Ph.D., <i>Associate Professor, Department of Civil and Coastal Engineering, University of Florida</i>; Ioannis Zisis, AM ASCE, <i>Associate Professor, Florida International University</i>; Amal Elawady, Ph.D, P.E., <i>Assistant Professor, FIU</i>; Frederick Haan, Ph.D, P.E., <i>Associate Professor, Calvin University</i>; Shiling Pei, Ph.D., <i>Associate Professor, Colorado School of Mines</i>; Kurt Gurley, Ph.D, <i>Professor, University of Florida</i>; Ashkan Rasouli, Ph.D, <i>Assistant Professor, FIU</i>; Maryam Refan; <i>Landolf Rhode-Barbarigos</i>; Mohammadtaghi Moravej</p> <p>Fragility Assessment of Wind- and Storm Surge-Induced Residential Building Damage Caused by Hurricane Harvey Authors: Frank T. Lombardo, A.M.ASCE, <i>Assistant Professor, University of Illinois at Urbana-Champaign</i>; Daniel J. Smith, A.M.ASCE, <i>Senior Research Fellow, James Cook University Cyclone Testing Station</i>; Richard J. Krupar, <i>Postdoctoral Associate, University of Maryland</i>; David B. Roueche, A.M.ASCE, <i>Assistant Professor, Auburn University</i></p> <p>Performance of Structures Under Successive Hurricanes: Observations from Puerto Rico and the U.S. Virgin Islands after Hurricane Maria Author: Tracy Kijewski-Correa, Ph.D., Leo E. and Patti Ruth Linbeck Collegiate Chair and Associate Professor, <i>University of Notre Dame</i>; Co-Authors: David O. Prevatt, Ph.D., <i>Associate Professor, Department of Civil and Coastal Engineering, University of Florida</i>; David B. Roueche, A.M.ASCE, <i>Assistant Professor, Auburn University</i>; Luis Aponte-Bermudez, Ph.D., <i>Faculty, University of Puerto Rico at Mayagüez</i>; Yue Li, Ph.D, <i>Professor, Case Western Reserve University</i>; Ricardo López, Ph.D., <i>Faculty, University of Puerto Rico at Mayagüez</i>; Jonathan Muñoz Barrero, Ph.D., <i>Faculty, University of Puerto Rico at Mayagüez</i>; Ismael Pagán Trinidad, Ph.D., <i>Faculty, University of Puerto Rico at Mayagüez</i>; Patricia Chardon; Maria Cortes; Carla López del Puerto; Aurelio Mercado; Alesandra Morales</p>

Technical Program *(continued)*

Track A | Capitol View Terrace North Buildings and Forensics Education

Track B | Capitol View Terrace South Forensic Investigations

Track C | Capitol Ballroom A-C Professional Practice

Track D | Capitol Ballroom F-H Structures

Saturday, December 1, 2018 *(continued)*

3:00 – 3:30 p.m. Afternoon Break			
3:30 – 5:00 p.m. Concurrent Technical Sessions			
Session A-7 Building Construction Moderator: Mike Derup	Session B-7 Forensic Investigation VI – Concrete Moderator: Kasra Ghahremani	Session C-7 Performance of Special Structures Moderator: Leonard Morse-Fortier	Session D-7 Infrastructure Moderator: John Willie
<p>Impact of Adjacent Construction on Existing Building Author: Anurag Jain, Ph.D., P.E., Senior Principal, Thornton Tomasetti; Co-Author: C. Can Simsir, Ph.D., P.E., Senior Associate, Thornton Tomasetti</p> <p>Forensic Engineering, the Heart in the Life Cycle of Structural Damage: From Emergency Response through Restoration to Final Repairs Author: Alfredo (Al) E. Bustamante, MSCE, Principal and Director of Forensic Restoration, ACI, AISC, ICRI; Co-Author: Douglas L. Fell, Senior Restoration Consultant, MASCE, MNS.E.A;</p> <p>SILL Crazy – After All These Years Author: Robert Bateman, Staff Consultant, AIA</p>	<p>Investigation and Repair of Shear Deficiencies in Concrete Flat Plates Author: Andrea E. Shear, P.E., Associate Principal, Wiss, Janney, Elstner Associates, Inc.; Co-Author: Andrew E. N. Osborn, S.E., P.E., Senior Principal, Wiss, Janney, Elstner Associates, Inc.</p> <p>A Statistical Approach of Understanding the Vibration Behavior of a Concrete Slab-On-Grade in Response to The Surrounding Equipment, A Case Study Using a Remote Vibration Monitoring System Author: Zhengqi Li, LEED AP, Staff Engineer, Terracon Consultants; Co-Author: Jigar Desai, P.E., Principal and Office Manager, Terracon Consultants</p> <p>Investigation and Repair of a Megatall Building Transfer Mat Author: David Drengenberg, P.E., S.E., Senior Structural Engineer, CTLGroup; Co-Author: Stephen Stacey, Civil Engineer, Jensen Hughes</p> <p>Investigation, Assessment and Repair of Cracks in Precast Bridge Slabs Author: Yunyi Zou, P.E., Senior Engineer, GE Power; Co-Author: Steven J. Smith</p>	<p>Composite Canopy Load Test, Analysis, and Retrofit Author: Matthew L. DeSimone, P.E., Senior Associate, Wiss, Janney, Elstner Associates, Inc.; Co-Author: John Cocca, Senior Associate, Wiss, Janney, Elstner Associates, Inc.</p> <p>Failure Analysis of Secondary Water Piping Systems Author: Scott I. Lieberman, Ph.D., P.E., LEED AP, CWI, Principal Engineer, LPI, Inc.</p> <p>Snow Loads on Air Supported Structures Author: Rahul Ratakonda, P.E., Senior Associate, Thornton Tomasetti</p>	<p>Gas Main Risk Assessment through Probabilistic Fracture Mechanics Author: Evan Schickel, Senior Engineer, LPI, Inc.; Co-Author: Andrew Smyth, P.E., Principal Engineer, LPI, Inc.; Joseph Cluever, P.E., Senior Engineer, LPI, Inc.</p> <p>Monitoring Temperature Differential and Volumetric Water Content Between Asphalt Pavement and Subgrade Layers Author: Wanting Wang, A.M. ASCE, Ph.D., Student, University of Colorado Denver; Angela Hager, P.E., Ph.D., Senior Engineer, Street Maintenance Engineering, City and County of Denver; Kevin Rens, Ph.D., P.E., M.ASCE, Professor and Chair, Department of Civil Engineering, University of Colorado Denver; Carnot Nogueira, Ph.D., Research Assistant Professor, Department of Civil Engineering, University of Colorado Denver</p> <p>Assessment of Bridge Repair with the Aid of Load Test and Acoustic Emission Monitoring Author: Hang Zeng, Student, Oklahoma State University; Co-Author: Julie Hartell, Assistant Professor, Oklahoma State University; Robert Emerson, Associate Professor, Oklahoma State University; Bruce Russell, Associate Professor, Oklahoma State University</p> <p>Fitness-For-Service Assessment of In-Service Wind Turbine Towers Author: Paul Murtagh, P.E., Director, A. M.ASCE; Co-Author: Robert Vecchio, P.E., Principal, M. ASCE</p>



Track A | Capitol View Terrace North Buildings and Forensics Education

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Sunday, December 2, 2018

7:00 – 8:30 a.m. Breakfast			
8:30 – 10:00 a.m. Concurrent Technical Sessions			
<p>Session A-8 Forensic Engineering Education Moderator: Rui Liu</p> <p>Failures All Around Us: Use of Student-Identified Failure Case Studies to Teach the Investigation Process Author: Tara Cavalline, Ph.D., P.E., Assistant Professor, University of North Carolina at Charlotte; Co-Author: Courtney Green; Nicholas Tymvios</p> <p>Graduate Course in Forensic Engineering via Distance Education Author: David W. Dinehart, Ph.D., Professor, Villanova University</p> <p>International Activities of the Forensic Engineering Division Author: Norb Delatte, P.E., F.ASCE, M.R. Lohmann Endowed Professor of Engineering and Head, School of Civil and Environmental Engineering, Oklahoma State University</p> <p>Use of Forensic Case Studies in a Mechanics Course to Highlight the Importance of Material Testing of Steel Author: David W. Dinehart, Ph.D., Professor, Villanova University; Co-Author: Shawn P. Gross, Professor, Villanova University</p>	<p>Session B-8 Forensic Investigation VII Moderator: Mike Lester</p> <p>Tile Tap Method: Human and Auditory Scientific Analysis Authors: Ralph E. Moon, B.S. MS. Ph.D, Principal, GHD Services Inc.; Don Nehrig, EIT, Associate, GHD Services, Inc.; Co-Authors: Nolan Wells, EIT, Building Scientist, GHD Services, Inc.; Bob Mulcahy, Florida Certified Mold Assessor, Building Scientist, GHD Services, Inc.</p> <p>Failure Analysis of a Reinforced Concrete Silo Authors: Travis G. Ebisch, M.S., P.E., Project Director, Nelson Forensics, LLC; Ryan T. Chancey, Ph.D., P.E., President, Nelson Forensics, LLC</p> <p>Concrete Silo Failures Due to Design Errors Author: Jesus Chavez Sagarnaga, Ph.D., Senior Project Engineer, Structural Group, Jenike & Johanson, Inc.</p> <p>The Importance of Destructive Testing for Identifying Concealed Resultant Structural Damage Author: Kerry Lee, M.B.A., P.E., M.ASCE, Executive Vice President; Gary Dunlap, AIA, Regional Manager, NCARB; Amanda Nogay, B.S., M.ASCE, Senior Associate</p>	<p>Session C-8 Vibrations Moderator: Sumanth Cheruku</p> <p>Evaluation of Vibration Damage to Structures Author: Randall Bernhardt, P.E., S.E., F.ASCE, F.S.E.I, Engineering Systems Inc.</p> <p>Analysis, Measurement and Mitigation of Stay Cable Vibrations Author: Anurag Jain, Ph.D., P.E., Senior Principal, Thornton Tomasetti; Co-Author: C. Can Simsir, Ph.D., P.E., Senior Associate, Thornton Tomasetti</p> <p>Forensic Investigations of Floor Vibrations Author: Charles DeVore, Ph.D., P.E., Senior Engineer, Exponent; Co-Author: Andrew Hardyneic, Ph.D., P.E., Engineer, Exponent</p> <p>Remediation of Wind-Induced Building Vibrations with Modular Tuned Liquid Damper System Co-Author: Pierre Ghisbain, Ph.D., Project Engineer, Thornton Tomasetti.; Sebastian Mendes, Ph.D., Project Engineer, Thornton Tomasetti; Marguerite Pinto, P.E., Vice President, Thornton Tomasetti; Elisabeth Malsch, Ph.D., P.E., Principal, Thornton Tomasetti</p>	<p>Session D-8 Failures During Construction Moderator: Paul Bosela</p> <p>Bridge Collapse During Demolition Author: David Peraza, P.E., Exponent; Co-Author: Ibrahim Erdem, Ph.D., P.E., S.E., Managing Engineer, Exponent</p> <p>Shoring Failure: Considerations for Using Multiple Levels of Ellis Shoring Posts Supported on Sloped Grade Authors: Jeff Dowgala, Phd, P.E., Associate III, Wiss, Janney, Elstner Associates, Inc.; Terrence Paret, Senior Principal, Wiss, Janney, Elstner Associates, Inc.; Elide Pantoli, Ph.D., Wiss, Janney, Elstner Associates, Inc.</p> <p>The Impact of an Overpour During an Elevated Slab Placement Author: Jeremiah Fasl, P.E., S.E., Senior Associate, Wiss, Janney, Elstner Associates, Inc.; Co-Author: Carl Larosche, P.E., Principal, Wiss, Janney, Elstner Associates, Inc.</p> <p>Tropicana Parking Garage Collapse Author: Paul A. Bosela, Jr., P.E., LEED AP, MSCE, Forensic Engineer, Bosela Forensic Engineering Consultants, LLC.</p>
10:00 – 10:30 a.m. Networking Break			
10:30 a.m. – 12:00 p.m. Concurrent Technical Sessions			
<p>Session A-9 Advanced Topics Moderator: Navid Nastar</p> <p>Introducing New Framework to Capture Extreme Uncertainty in Risk Management of Landslides Author: Azadeh Mostofi, M.Sc., Ph.D. Candidate in Civil/Geotechnical Engineering, University of Texas at Austin; Co-Author: Robert B. Gilbert, Ph.D., P.E., Professor, University of Texas at Austin</p> <p>Hail Sizing: A Comparison of On-Site Data with Weather Data Author: Stewart M. Verhulst, P.E., RRC, Vice President, Nelson Forensics; Co-Author: J. Daniel Bosley, P.E., Regional Manager, Nelson Forensics; Amanda Talbott, P.E., Project Director, Nelson Forensics</p> <p>Advanced Techniques in Railroad Engineering Railroad Accidents Causes & Innovative Prevention Techniques Author: Avinash Prasad, P.E., PLS, Ph.D.(C), MSCE, MS.E.M, FF, EMT, P.E., PLS, Ph.D.(C), MSCE, MS.E.M, FF, EMT, MTA-NYCT; NYU; Co-Author: Indira Prasad, MBA, MS, PMI-PMP®, ASQ-CMQ/OE, SMASCE, Ph.D. Student, MBA, MS, PMI-PMP®, ASQ-CMQ/OE, SMASCE, Ph.D. Student, MTA-Bridge & Tunnel & Stevens Institute of Technology</p>	<p>Session B-9 Forensic Investigation VII Moderator: Ziad Salameh</p> <p>Material Deterioration, Fitness-For-Service Analysis and Repair of a Steel Tank Author: Mustafa Mahamid, Ph.D., S.E., P.E., P.Eng, F.S.E.I, F.ASCE, Clinical Associate Professor, University of Illinois at Chicago; Co-Author: Tom Brindley, P.E., M.ASCE, President, Brindley Engineering Corporation; Nezar Abraham, P.E., S.E., M.ASCE, Senior Structural Engineer, Brindley Engineering Corporation; Nicholas Triandafilou, P.E., S.E., M.ASCE, Structural Group Manager, Brindley Engineering Corporation</p> <p>Duration of Metal Corrosion: Plumbing and Construction Materials Authors: Ralph E. Moon, B.S. MS., Ph.D., Principal, GHD Services Inc.; Nolan Wells, EIT, Building Scientist, GHD Services, Inc.; Co-Author: Don Nehrig, EIT, Associate, GHD Services, Inc.</p> <p>Copper Tubing Leaks: Interpreting Evidence of Failure Author: Ralph E. Moon, B.S. MS. Ph.D, Principal, GHD Services Inc.; Co-Author: Don Dunn, Master Plumber, President, My Plumbing Company</p>	<p>Session C-9 Resilience Moderator: Mike Lester</p> <p>Estimating Joint Return Periods for Flooding Due to Storm Surge Author: Adam Hatzikyriakou, Associate, Exponent; Co-Author: Ning Lin, Assistant Professor, Princeton University</p> <p>Using Big Data in Early Warning System of Flash Floods in Mauritius Session Chair: Roodredevi Jhagdambi, M.S., Student, Nanjing Audit University; Co-Chair: Biao Zhong, Phd, Professor, Nanjing Audit University</p> <p>A Summary of Findings from FEMA's Mitigation Assessment Team Evaluation of Texas Coastal Communities Impacted by Hurricane Harvey Authors: Daniel Bass, RA, Architect, FEMA Building Science Branch; Brian O'Connor, P.E., Structural Engineer, CDM Smith; Co-Author: Manuel Perotin, P.E., CFM, Senior Project Manager, CDM Smith</p>	<p>Session D-9 Blast and Extreme Loading Moderator: Leonard Morse-Fortier</p> <p>Industry Standards of Ground Vibration PPV Limits and Associated Distress Author: Carlos Garza, P.E., Project Manager, Carrasquillo Associates; Co-Author: David Langefeld, P.E., Project Manager, Carrasquillo Associates</p> <p>Oil Refinery Failed Wire Ropes Case Study Author: Mark Guirguis, P.E., Structural Engineer, Brindley Engineering Corporation; Co-Authors: Nicholas Triandafilou, P.E., S.E., M.ASCE, Structural Group Manager, Brindley Engineering Corporation; Slawomir Domagala, C.W.I., Project Engineer, Brindley Engineering Corporation; Jakub Szewczyk, C.W.I., Project Engineer, Brindley Engineering Corporation</p> <p>An Engineering Investigation of a Recreational Trailer Explosion at Tannehill State Park, Alabama Author: Zuhair M. Ibrahim, Ph.D, P.E., CFEI, Director, LPI Inc.</p>

General Information

ADA Compliance

The Sheraton Austin Hotel at the Capitol is fully accessible to the disabled. While ASCE will make every effort to meet the needs of the disabled, accommodations cannot be guaranteed without prior notification.

Attendee Packets

The packet you received at the on-site Registration Desk includes your name badge, the tickets for events you have ordered, PDH information and general announcements. On-site registrants should present the official registration receipt to on-site registration staff to obtain congress materials.

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Congress Proceedings

The congress proceedings will be available online. One copy is included with each full registration.

City Information

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Please help ASCE & Pipelines stay "green" by leaving your name badge holder in the registration area when you leave the congress. If you are concerned about privacy, you are welcome to remove your name from the holder and take that with you.

Registration Hours

Thursday, November 29	7:00 a.m. – 6:00 p.m.
Friday, November 30	7:00 a.m. – 5:00 p.m.
Saturday, December 1	7:00 a.m. – 5:00 p.m.
Sunday, December 2	7:30 – 10:00 a.m.

Weather in Austin

Average temperatures range from a high of 65 degrees Fahrenheit during the day to around 45 degrees Fahrenheit in the evening.

LOBBY LEVEL (THIRD FLOOR)



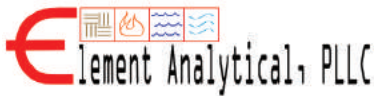
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