Conference Program

19-22 May 2025

St. Charles Convention Center, St. Louis, MO

USA

Welcome Greetings from Conference Chair and Missouri University of Science and Technology

Welcome to the 15th Americas Conference on Wind Engineering in St. Louis, Missouri! The Americas Conference on Wind Engineering (ACWE) is an IAWE (International Association of Wind Engineering) Regional Conference for the Americas Region. It stands as a preeminent international gathering for the wind engineering community, convened by American Association of Wind Engineering (AAWE). With a great honor, Missouri University of Science and Technology (Missouri S&T) is proud to host the 15th ACWE in St. Louis, MO. Building on the success of previous conferences, we expand the agenda to promote advanced research and practice to better confront the grand challenges of wind hazards, which includes the improvement of building codes for diverse wind conditions. The chair, Dr. Grace Yan, and the Vice Chancellor for Research and Innovation of Missouri S&T, Dr. Khamal Khayat, extends their heartfelt welcome to you all, inviting you to come to establish connections, exchange insights, and transform challenges into opportunities together, ultimately fostering the growth of the wind engineering community.

Organizing Committee

Grace Yan, Chair

Director, Center for Hazard Mitigation and Community Resilience (HMCR)
Professor, Department of Civil, Architectural and Environmental Engineering
Missouri University of Science and Technology (Missouri S&T)

Kamal Khayat

Vice Chancellor, Research and Innovation Vernon.
Maralee Jones Endowed Professor, Department of Civil, Architectural and Environmental Engineering,
Missouri S&T

Genda Chen

Director, Center for Intelligent Infrastructure.
Professor and Robert W.Abbett Distinguished Chair, Department of Civil, Architectural and Environmental Engineering
Missouri S&T

Ronaldo Luna

Professor, Department of Civil, Computer and Electrical Engineering
Saint Louis University

Panneer Selvam

Professor, Department of Civil Engineering
University Of Arkansas

Jiamin Dang

PhD Student, Center for HMCR
Missouri S&T

Yi Zhao

Postdoctoral Researcher, Center for HMCR
Missouri S&T

Kakkattukuzhy M. Isaac

Professor, Department of Mechanical and Aerospace Engineering
Missouri S&T

Daoru Han

Associate Professor, Department of Mechanical and Aerospace Engineering
Missouri S&T

Joel Burken

Chair and Curators' Professor, Department of Civil, Architectural and Environmental Engineering

Missouri S&T

Natalie Goeddertz

Program/Project Support Coordinator, Center for Intelligent Infrastructure
Missouri S&T

Scientific Committee

Dr. Chris Baker
University of Birmingham

Dr. Gianni Bartoli
University of Florence, Italy

Dr. Mike Biggerstaff
University of Oklahoma, United States

Dr. Girma Bitsuamlak
Western University, Canada

Dr. Steve C.S. Cai
Louisiana State University, United States

Dr. Shuyang Cao
Tongji University, China

Dr. Suren Chen
Colorado State University, United States

Dr. Xinzhong Chen
Texas Tech University, United States

Dr. Shaohong Cheng
University of Windsor, Canada

Dr. Arindam Gan Chowdhury
Florida International University, United States

Dr. Amal Elawady
Florida International University, United States

Dr. Richard Flay
University of Auckland, New Zealand

Dr. YaoJun Ge
Tongji University, China

Dr. Catherine Gorle
Stanford University, United States

Dr. Yanlin Guo
Colorado State University, United States

Dr. Kurtis Gurley
University of Florida, United States

Dr. Fred Haan
Calvin College, United States

Dr. Horia Hangan
Western University, Canada

Dr. Xugang Hua
Hunan University, China

Dr. Peter Irwin
Rowan Williams Davies and Irwin, Inc. (RWDI), Canada

Dr. Sungmoon Jung
Florida A&M University-Florida State University, United States

Dr. Ahsan Kareem
University of Notre Dame, United States

Dr. Hiroshi Katsuchi
Yokohama National University, Japan

Dr. Tracy Kijewski-Correa
University of Notre Dame, United States

Dr. Gregory Kopp
Western University, Canada

Dr. Jamie Brown Kruse
East Carolina University, United States

Dr. Kenny Kwok
University of Western Sydney, Australia

Dr. Chris Letchford
Rensselaer Polytechnic Institute, United States

Dr. Marc Levitan
National Institute of Standards and Technology, United States

Dr. Mingshui Li
Southwest Jiaotong University, China

Dr. Ruilong Li
Hamilton Re, United States

Dr. Daan Liang
National Science Foundation, United States

Dr. Frank Lombardo
University of Illinois at Urbana-Champaign, United States

Scientific Committee

Dr. Kam Tim TSE
The Hong Kong University of Science and Technology, China

Dr. Forrest Masters
University of Florida, United States

Dr. Murray Morrison
Institute for Business and Home Safety, United States

Dr. Brian Phillips
University of Florida

Dr. Jean-Paul Pinelli
Florida Institute of Technology, United States

Dr. Dorothy Reed
University of Washington, United States

Dr. Maryam Refan
CPP, Wind Engineering & Air Quality Consultants, United States

Dr. Partha Sarkar
Iowa State University, United States

Dr. John Schroeder
Texas Tech University, United States

Dr. R. Panneer Selvam
University of Arkansas

Dr. Seymour "MJ" Spence
University of Michigan, United States

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Concordia University, Canada

Dr. Mark Sterling
University of Birmingham, United Kingdom

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University of Kansas, United States

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Chongqing University, Japan

Dr. Changda Feng
Verisk, United States

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The Hong Kong University of Science and Technology

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University of Buffalo, United States

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Hong Kong Polytechnic University, China

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Missouri University of Science and Technology, United States

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Chongqing University, China

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National Institute of Standards and Technology, United States

Dr. Wei Zhang
University of Connecticut, United States

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Tongji University, China

Dr. Ioannis Zisis
Florida International University, United States

Dr. Delong Zuo
Texas Tech University, United States

Dr. Daniel M. Rhee
National Institute of Standards and Technology, United States

Dr. Michele Barbato
University of California, Davis, United States

Dr. Ahmed Elshaer
Lakehead University, Canada

Dr. Claudi Borri
University of Florence, Italy

Special Events

Monday, 19 May 2025

1:00 pm-4:00 pm	Workshop: Deploying SimCenter Tools to Enhance Wind Engineering Research and Practice Chairs: Matthew Schoettler, Corinna Fong and Abiy Melaku, University of California, Berkeley *Location: Meeting Room 103, First Floor of St. Charles Convention Center*
2:30 pm-5:30 pm	Tornado Load Design using the ASCE 7-22 standard and the 2024 IBC Chairs: Marc Levitan, National Institute of Standards and Technology; Shane Crawford, University of Alabama *Location: Junior Ballroom D, First Floor of St. Charles Convention Center*
6:00 pm-9:00 pm	Ice-breaker Welcome Reception *Location: Exhibition Hall North, First Floor of St. Charles Convention Center*

Tuesday, 20 May 2025

7:30 am-8:30 am	Coffee and Tea *Location: Pre-function Area of Exhibition Hall North*
8:30 am-9:00 am	Chasing the Wind: Opening Ceremony *Location: Exhibition Hall North, First floor of St. Charles Convention Center.*
9:00 am-9:45 am	Keynote Speech: Exploring the Role of Turbulence, Noise, Damping and Correlation in Stabilizing Dynamic Systems: A Harmonic Oscillator Perspective Keynote Speaker: Ahsan Kareem, University of Notre Dame Moderator: Yukio Tamura, Chongqing University *Location: Exhibition Hall North, First floor of St. Charles Convention Center*
9:45 am-10:30 am	Keynote Speech: Coastal Resilience in a Changing Climate Keynote Speaker: Dr. Jane Smith, University of Florida Moderator: Jamie Padgett, Rice University *Location: Exhibition Hall North, First floor of St. Charles Convention Center*
10:30 am-11:00 am	Brewing Connections over Coffee *Location: Hallways/Corridors*
11:00 am-12:00 pm	Panel Discussion: Future Wind Engineering Research Directions for a Changing World Chair: Teng Wu Panelists: Tanya Brown-Giammanco; Chris Letchford

	Location: Junior Ballroom A
12:00 pm-1:00 pm	Lunch; AAWE Career Fair Lunch
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
1:00 pm-1:45 pm	Keynote Speech: Multimode Vortex-Induced Vibration and Its Control of Long-Span Suspension Bridges
	Keynote Speaker: Dr. Xugang Hua, Hunan University
	Moderator: Dr. Yaojun Ge, Tongji University
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
1:45 pm-3:15 pm	Workshop: High Performance Computing Resources and Workflows on DesignSafe
	Chairs: Fred Haan; Jean-Paul Pinelli
	Panelist: Ahsan Kareem
	Location: Junior Ballroom A
3:15 pm-3:45 pm	Networking Breeze: Coffee Break
	Location: Hallways/Corridors
3:45 pm-5:15 pm	Windstorm Protection: Storm Shelters and Safe Rooms
	Chair: Marc Levitan
	Panelist: Shane Crawford
	Moderator: Nico de Toledo
	Location: Junior Ballroom A
5:30 pm-7:30 pm	Regional Assembly followed by AAWE Annual Members Meeting
	Location: Junior Ballroom D, First floor of St. Charles Convention Center

Wednesday, 21 May 2025

7:30 am-8:30 am	Coffee and Tea
	Location: Pre-function Area of Exhibition Hall North
8:30 am-8:35 am	Morning Welcome/Announcements
	Location: Exhibition Hall North
8:35 am-9:20 am	Keynote Speech: Extreme Winds Modeling for Sustainable Wind Energy Planning
	Keynote Speaker: Dr. Ruby Leung, Pacific Northwest National Laboratory
	Moderator: Dickie Whitaker, Oasis LMF
	Location: Exhibition Hall North, First floor of St. Charles Convention Center

10:30 am-11:00 am	Brewing Connections over Coffee
	Location: Hallways/Corridors
12:00 pm-1:00 pm	Lunch over Sponsor Spotlight
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
1:00 pm-1:45 pm	Keynote Speech: Hurricanes, Tornadoes, and Derechos – Oh My! (Improving Community Resilience to Extreme Wind Hazards through Interdisciplinary Modeling)
	Keynote Speaker: Dr. John van de Lindt, Colorado State University
	Moderator: Chirstopher Letchford, Rensselaer Polytechnic Institute
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
3:15 pm-3:45 pm	Networking Breeze: Coffee Break
	Location: Hallways/Corridors
6:00 pm-7:00 pm	Cocktail and Whirlwind Networking Reception
	Location: Pre-function Area of Exhibition Hall, First floor of St. Charles Convention Center
	6:00 pm-6:45 pm: Fun Scenario Photo Taking.
	6:45 pm -7:00 pm: Historical "W" Group Photo Taking.
7:00 pm-9:15 pm	Soaring on the Wind: Gala Celebration
	7:00 pm-7:15 pm: Wine & Toast: A Joyful Moment of Thankfulness and Connection
	7:15 pm-8:15 pm: Dinner Over Performance by the Sweetie & Tootchaches Blue Jazz Band St. Louis' Premier Jump Blues Band! Specializing in 1940's – 1960's Jump Blues, R&B and Blues Ballads!
	8:15 pm-9:00 pm: Peter Irwin Lecture Dr. Barry Vickery: The Legacy of a Pioneer in Wind Engineering
	Keynote Speaker: Dr. Peter Vickery, Peter J Vickery Consulting
	Moderator: Dr. John Kilpatrick, RWDI
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
	9:00 pm-9:15 pm Award Ceremony
	Chair: Teng Wu, University at Buffalo
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
9:15 pm-10:15 pm	Celebration Dance Party with the Blue Jazz Band

Thursday, 22 May 2025

7:30 am-8:30 am	Coffee and Tea
	Location: Pre-function Area of Exhibition Hall North

8:30 am-8:35 am	Morning Welcome/Announcements *Location: Exhibition Hall North*
8:35 am-9:20 am	Keynote Speech: Can we reduce losses to residential structures in extreme windstorms? Keynote Speaker: Gregory Kopp, Western University Moderator: Marck Levitan, National Institute of Standards and Technology *Location: Exhibition Hall North, First floor of St. Charles Convention Center*
10:30 am-11:00 am	Brewing Connections over Coffee *Location: Hallways/Corridors*
11:00 am-12:00 pm	Panel Discussion: Advances in Shared Research Infrastructure for Windstorm Hazards Chair: Tracy Kijewski-Correa Panelists: Arindam Gan Chowdhury; Kurtis Gurley; Partha Sarkar; Ioannis Zisis *Location: Junior Ballroom A*
12:00 pm-1:00 pm	Lunch over Melody of the Winds-Discovering Nature through Music *Location: Exhibition Hall North*

Conference Schedule Overview

Monday, 19 May 2025

12:00 pm-6:00 pm	**Conference Attendees Registration/Check-in** **Sponsor and Exhibitor Registration/Check-in**	The Registration/Check-in desk is located on the Pre-function Area of Exhibition Hall North, which is physically connected with the conference hotel (Embassy Suites by Hilton St. Louis St. Charles). One of our conference staff members will assist with your check-in, and provide you with your name badge and conference backpack. In your conference backpack, you can find the instruction on installing Whova, complimentary drink tickets, and the colored square paper used at the Banquet to indicate your meal selection to the wait staff, as well as other treasures…!
1:00 pm-4:00 pm	**Workshop: Deploying SimCenter Tools to Enhance Wind Engineering Research and Practice**	Chairs: Matthew Schoettler, Corinna Fong and Abiy Melaku, University of California, Berkeley Location: Meeting Room 103, First Floor of St. Charles Convention Center
2:30 pm-5:30 pm	**Tornado Load Design using the ASCE 7-22 standard and the 2024 IBC**	Chairs: Marc Levitan, National Institute of Standards and Technology; Shane Crawford, University of Alabama Location: Junior Ballroom D, First Floor of St. Charles Convention Center
6:00 pm-9:00 pm	**Ice-breaker Welcome Reception**	Location: Exhibition Hall North, First Floor of St. Charles Convention Center Note from Grace Yan: We will serve a buffet dinner, with two salads, two entrees, two sides and two desserts, and red and white wine. You are suggested to arrive at St. Louis Airport before 4PM, on May 19. Without a traffic jam, it takes less than 15 mins from the airport to the Conference hotel, which is physically connected to the St. Charles Convention Center, the buffet location.

Tuesday, 20 May 2025

7:30 am-6:30 pm	**Registration/Check-In** (Pre-function Area of Exhibition Hall North)
7:30 am-8:30 am	**Coffee and Tea provided at Pre-function Area of Exhibition Hall North** (The conference hotel (Embassy Suite by Hilton) agreed to offer a full breakfast buffet to the conference attendees who stay with Embassy Suite)
8:30 am-9:00 am	**Chasing the Wind: Opening Ceremony** (Exhibition Hall North, First floor of St. Charles Convention Center) Speakers: Grace Yan, Professor, Missouri University of Science and Technology Kamal Khyat, Vice Chancellor for Research and Innovation, Missouri University of Science and Technology Claudio Borri, President of International Association for Wind Engineering Dorothy Reed, President of American Association for Wind Engineering
9:00 am-9:45 am	**Keynote Speech** Title: Exploring the Role of Turbulence, Noise, Damping and Correlation in Stabilizing Dynamic Systems: A Harmonic Oscillator Perspective. Keynote Speaker: Dr. Ahsan Kareem, University of Notre Dame Moderator: Dr. Yukio Tamura, Chongqing University Location: Exhibition Hall North, First floor of St. Charles Convention Center
9:45 am-10:30 am	**Keynote Speech** Title: Coastal Resilience in a Changing Climate Keynote Speaker: Dr. Jane Smith, University of Florida Moderator: Jamie Padgett Rice University Location: Exhibition Hall North, First floor of St. Charles Convention Center

10:30 am-11:00 am	**Brewing Connections over Coffee** (Hallways/Corridors)				
11:00 am-12:00 pm	Panel Discussion: Future Wind Engineering Research Directions for a Changing World	Projection of Future Design Wind Speeds	Bluff-Body Aerodynamics	Machine Learning and Artificial Intelligence	MS[1]: Multi-Disciplinary Community Resilience and Reconnaissance Studies under Wind-Induced Events
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chair: Teng Wu	Chairs: Franklin Lombardo & Thomas Smith	Chair: Partha Sarkar	Chair: Sungmoon Jung	Chair: Lisa Wang & Shane Crawford
12:00 pm-1:00 pm	**Lunch; AAWE Career Fair Lunch** (Exhibition Hall North, First floor of St. Charles Convention Center)				
1:00 pm-1:45 pm	**Keynote Speech** Title: Multimode Vortex-Induced Vibration and Its Control of Long-Span Suspension Bridges Keynote Speaker: Dr. Xugang Hua, Hunan University Moderator: Dr. Yaojun Ge, Tongji University Location: Exhibition Hall North, First floor of St. Charles Convention Center				
1:45 pm-3:15 pm	Workshop: High Performance Computing Resources and Workflows on DesignSafe	MS: Advancements in Performance-Based Wind Engineering	MS: Catastrophe Modeling of Wind Hazards	MS: AI in Wind Engineering	MS: Multi-Disciplinary Community Resilience and Reconnaissance Studies under Wind-Induced Events
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chairs: Fred Haan & Jean-Paul Pinelli	Chairs: Arthriya Subgranon & Seymour M.J. Spence	Chairs: Paolo Bocchini & Haifeng Wang	Chairs: Teng Wu & Roy Denoon	Chairs: Lisa Wang & Tanya Brown-Giammanco
3:15 pm-3:45 pm	**Networking Breeze: Coffee Break** (Hallways/Corridors)				
3:45 pm-5:15 pm	Windstorm Protection: Storm Shelters and Safe Rooms	MS: Advancements in Performance-Based Wind Engineering	MS: Catastrophe Modeling of Wind Hazards	MS: AI in Wind Engineering	MS: Computational Wind Engineering
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chair: Marc Levitan	Chairs: Arthriya Subgranon & Seymour M.J. Spence	Chairs: Paolo Bocchini & Xinzhe Yuan	Chairs: Teng Wu & David Roueche	Chairs: Panneer Selvam & Girma Bitsuamlak
5:30 pm-7:30 pm	**Regional Assembly followed by AAWE Annual Members Meeting** Location: Junior Ballroom D, First floor of St. Charles Convention Center				

[1] MS: Mini-Symposium

Wednesday, 21 May 2025

7:30 am-6.30 pm	**Registration/Check-In** (Pre-function Area of Exhibition Hall North)				
7:30 am-8:30 am	**Coffee and Tea provided at Pre-function Area of Exhibition Hall North** (The conference hotel (Embassy Suite by Hilton) agreed to offer a full breakfast buffet to the conference attendees who stay with Embassy Suite)				
8:30 am-8:35 am	**Morning Welcome/Announcements** (Exhibition Hall North)				
8:35 am-9:20 am	**Keynote Speech** Title: Extreme Winds Modeling for Sustainable Wind Energy Planning Keynote Speaker: Dr. Ruby Leung, Pacific Northwest National Laboratory Moderator: Dickie Whitaker, Oasis LMF Location: Exhibition Hall North, First floor of St. Charles Convention Center				
9:30 am-10:30 am	MS: Simulation of Wind Effects on Coastal Communities	MS: Advancements in Performance-Based Wind Engineering	MS: Catastrophe Modeling of Wind Hazards	Bridge and Cable Aerodynamics	MS: Computational Wind Engineering
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chair: Ioannis Zisis	Chairs: Arthriya Subgranon & Seymour M.J. Spence	Chairs: Paolo Bocchini & Zhen Hu	Chair: Yaojun Ge	Chair: Panneer Selvam
10:30 am-11:00 am	**Brewing Connections over Coffee** (Hallways/Corridors)				
11:00 am-12:00 pm	MS: Simulation of Wind Effects on Coastal Communities	MS: Risk Assessment of Electric Power Systems against Hurricane Hazards	MS: Wind Energy and Wind-wave-structure Interactions	Bridge and Cable Aerodynamics	MS: Computational Wind Engineering
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chairs: Guangzhao Chen & Elaina Sutley	Chairs: Yousef Darestani & Ji Yun Lee	Chairs: Haifeng Wang & Biswajit Basu	Chair: Xinzhong Chen	Chairs: Panneer Selvam & DongHun Yeo
12:00 pm-1:00 pm	**Lunch over Sponsor Spotlight** (Exhibition Hall North, First floor of St. Charles Convention Center)				
1:00 pm-1:45 pm	**Keynote Speech** Title: Hurricanes, Tornadoes, and Derechos – Oh My! (Improving Community Resilience to Extreme Wind Hazards through Interdisciplinary Modeling) Keynote Speaker: Dr. John van de Lindt, Colorado State University Moderator: Chirstopher Letchford, Rensselaer Polytechnic Institute Location: Exhibition Hall North, First floor of St. Charles Convention Center				
1:45 pm-3:15 pm	MS: Debris Effects on Structures--Simulations and Vulnerability Assessments	MS: Climate Change Impact on Winds	MS: Impacts of Ground and Lower Boundary Conditions on Tornadoes	Bridge and Cable Aerodynamics	Severe Windstorms
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chairs: Ioannis Zisis & Nigel Kaye	Chairs: Eun Cha & Michele Barbato	Chairs: Jana Houser & Daniel Rhee	Chairs: Mark Sterling & Jianming Hao	Chairs: John Schroeder & Anurag Jain

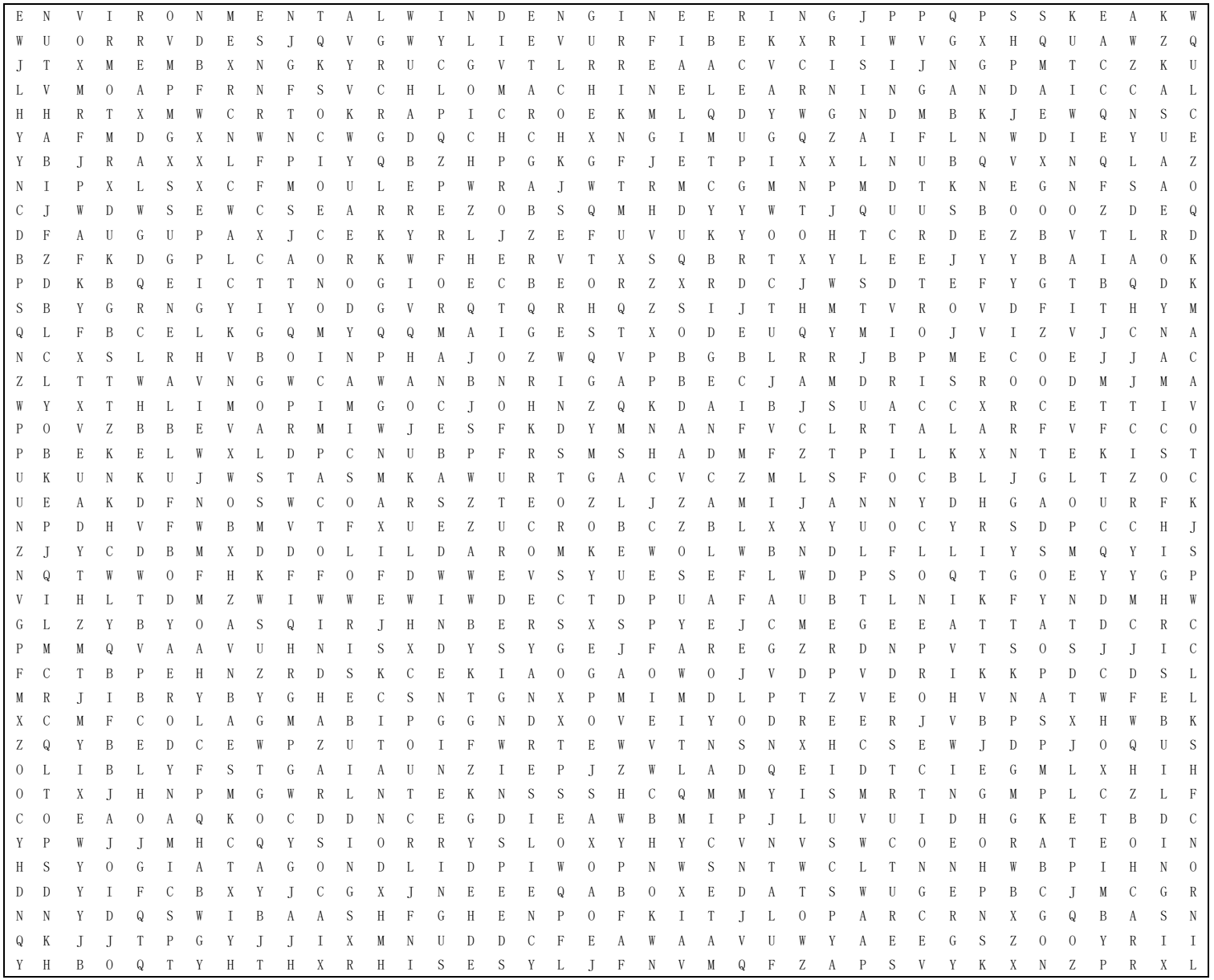
3:15 pm-3:45 pm	**Networking Breeze: Coffee Break** (Hallways/Corridors)				
3:45 pm-5:00 pm	MS: Simulation of Wind Effects on Coastal Communities	MS: Wind driven loads on PV modules and Solar collectors	MS: Structural Monitoring & Disaster Warning	MS: Tornado Damage and Homeowners Insurance	Innovative Developments
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chairs: Guangzhao Chen & Aly Mousaad Aly	Chairs: Ulrike Egerer & Ioannis Zisis	Chair: David Prevatt	Chair: Gwenyth Searer	Chairs: Tracy Kijewski-Correa & Fred Haan
6:00 pm-7:00 pm	**Cocktail and Whirlwind Networking Reception** (Pre-function Area of Exhibition Hall, First floor of St. Charles Convention Center)				
	6:00 pm-6:45 pm: Fun Scenario Photo Taking (A beautiful memory capturing with the Gateway Arch in the background, and Spotlight Photo Taking with Signing your name on AAWE board)				
	6:45 pm -7:00 pm: Historical "W" Group Photo Taking				
7:00 pm-9:15 pm	**Soaring on the Wind: Gala Celebration**				
	7:00 pm-7:15 pm: Wine & Toast: A Joyful Moment of Thankfulness and Connection				
	7:15 pm-8:15 pm: Dinner Over Performance by the Sweetie & Tootchaches Blue Jazz Band **St. Louis' Premier Jump Blues Band! Specializing in 1940's – 1960's Jump Blues, R&B and Blues Ballads!**				
	8:15 pm-9:00 pm: Peter Irwin Lecture Title: Dr. Barry Vickery: The Legacy of a Pioneer in Wind Engineering Keynote Speaker: Dr. Peter Vickery, Peter J Vickery Consulting Moderator: Dr. John Kilpatrick, RWDI Location: Exhibition Hall North, First floor of St. Charles Convention Center				
	9:00 pm-9:15 pm: Award Ceremony Chair: Teng Wu, University at Buffalo Location: Exhibition Hall North, First floor of St. Charles Convention Center				
9:15 pm-10:15 pm	**Celebration Dance Party with the Blue Jazz Band**				

Thursday, 22 May 2025

8:00 am-2:30 pm	**Registration/Check-In** (Pre-function Area of Exhibition Hall)				
7:30 am-8:30 am	**Coffee and Tea provided at Pre-function Area of Exhibition Hall North** (The conference hotel (Embassy Suite by Hilton) agreed to offer a full breakfast buffet to the conference attendees who stay with Embassy Suite)				
8:30 am-8:35 am	**Morning Welcome/Announcements** (Exhibition Hall North)				
8:35 am-9:20 am	**Keynote Speech** Title: Can we reduce losses to residential structures in extreme windstorms? Keynote Speaker: Gregory Kopp, Western University Moderator: Marck Levitan, National Institute of Standards and Technology Location: Exhibition Hall North, First floor of St. Charles Convention Center				
9:30 am-10:30 am	Bluff-body aerodynamics	MS: Measurement and Modeling of Transient Wind Characteristics	Wind-induced Vibration of Slender Structures	Aerodynamics of Low-rise Buildings	Environmental wind engineering
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chairs: Arindam Gan Chowdhury & Murray Morrison	Chair: Franklin Lombardo	Chair: Thomas Mara	Chairs: Daniel Rhee & Zhuo Tang	Chairs: Naoki Ikegaya & Kazuyoshi Nishijima
10:30 am-11:00 am	**Brewing Connections over Coffee** (Hallways/Corridors)				
11:00 am-12:00 pm	Panel Discussion: Advances in Shared Research Infrastructure for Windstorm Hazards	MS: Measurement and Modeling of Transient Wind Characteristics	Wind-induced Vibration of Slender Structures	Aerodynamics of Low-rise Buildings	Performance-based Wind Engineering
	Junior Ballroom A	Junior Ballroom B	Junior Ballroom C	Junior Ballroom D	Meeting Room 103
	Chair: Tracy Kijewski-Correa	Chairs: Franklin Lombardo & Daniel M. Rhee	Chairs: Jiawu Li & Jiamin Dang	Chair: Mark Sterling	Chairs: Alice Alipour & Jin Wang
12:00 pm-1:00 pm	**Lunch over Melody of the Winds-Discovering Nature through Music** (Exhibition Hall North)				
1:45 pm-3:15 pm	MS: Downburst Effects on Structures	Aerodynamics of High-rise Buildings			
	Junior Ballroom A	Junior Ballroom C			
	Chairs: Ioannis Zisis & Mark Sterling	Chairs: Brian Phillips & Girma Bitsuamlak			

Session Topics

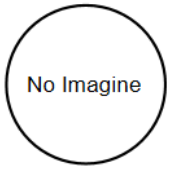
15TH ACWE WORDS SCRAMBLE



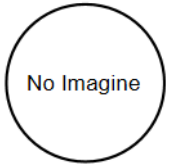
PROJECTION OF FUTURE DESIGN WIND SPEEDS
FUTURE TROPICAL CYCLONE PROJECTION
AERODYNAMICS OF HIGH-RISE BUILDINGS
AERODYNAMICS OF LOW-RISE BUILDINGS
ENVIRONMENTAL WIND ENGINEERING
SEVERE WINDSTORMS
WIND-INDUCED VIBRATION OF SLENDER STRUCTURES
WIND ENERGY
PERFORMANCE-BASED WIND ENGINEERING
SOCIOECONOMIC IMPACT OF WIND HAZARDS
GENERAL BLUFF-BODY AERODYNAMICS
MACHINE LEARNING AND AI
RECOVERY AND RESILIENCY
BRIDGE AND CABLE AERODYNAMICS
INNOVATIVE DEVELOPMENTS

2025 AAWE Award Recipient

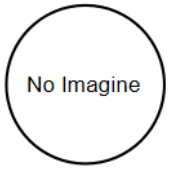
American Association for Wind Engineering (AAWE) Awards



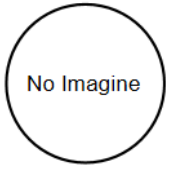
To Be Announced



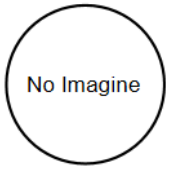
To Be Announced



To Be Announced

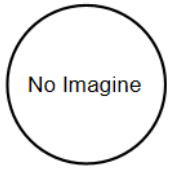


To Be Announced



To Be Announced

International Association for Wind Engineering (IAWE) Awards



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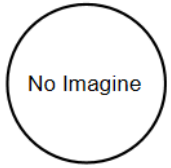

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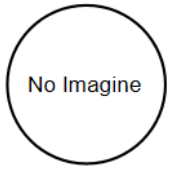
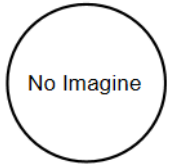


To Be Announced

Advances in Wind Engineering (AWE) Awards



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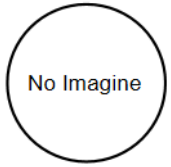

To Be Announced

Peter Irwin Lecture

The Legacy of a Pioneer in Wind Engineering

Keynote Speaker: Peter Vickery,
Peter J Vickery Consulting
Moderator: John Kilpatrick, RWDI

Time: 8:15 pm-9:00 pm, Wed., 21 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: The lecture will cover the contributions of Barry Vickery to wind engineering over his career, discussing his work at The University of Sydney, the National Physics Laboratory in the UK (now BMT) and at the University of Western Ontario. His original contributions to wind engineering cover a wide range of topics including bluff body aerodynamics, gust factors, internal pressures, chimneys and vortex shedding, offshore structures, and wind climatology. The talk will follow his career beginning in Sydney, Australia in the early 1960's and ending at the University of Western Ontario in the mid 2000's. In addition to his pioneering contributions to wind engineering, he was also a well-respected teacher, and some thoughts and comments from some of his students will also be included.

Biography: Dr. Peter Vickery joined Applied Research Associates, Inc. (ARA) in 1988. Prior to joining ARA, Dr. Vickery completed both his Masters and Doctoral studies at the University of Western Ontario. Dr. Vickery has over 40 years of experience in wind engineering. Dr. Vickery retired from ARA in 2022 and is now a part time consultant. Dr. Vickery has published numerous peer reviewed journal papers related to hurricane risk and additional papers related to wind loads on buildings and other structures. He pioneered the development of the probabilistic track modeling approach for hurricane risk assessment, which is now the standard method used for insurance probabilistic hurricane loss modeling. Dr. Vickery was one of the primary developers of FEMA's Hazus hurricane loss model, which has been in use since 2002 to estimate damage and loss associated with landfalling hurricanes. He has over 20 years' experience in the application of hurricane modeling relevant to modeling and damage and loss associated with hurricanes and the built environment and its application to insurance loss analysis and rate making. Dr. Vickery has been involved in numerous probabilistic wind risk analyses for nuclear facilities in the US and Canada and has performed numerous hurricane wind-wave analyses for offshore wind farms.

Dr. Vickery is a member National Academy of Engineers and is a fellow of the American Society of Civil Engineers (ASCE) and the ASCE Structural Engineering Institute (SEI). He is a recipient of ASCE's Collinwood Award, and the Jack E. Cermak Medal.

John Kilpatrick
Wind Engineering Practice Leader, RWDI

Biography: John Kilpatrick manages our global wind engineering team as well as the firm's technical development in this area. Over 25 years in the field, John has earned a reputation as a creative and insightful wind engineer who delivers substantial value for clients by meeting complex challenges in building design. Working closely with design teams to develop a thorough understanding of wind effects on specific sites and structures -especially high-rise buildings, stadia and flexible structures– John has developed technically sound and cost-effective solutions for projects around the world. Among other professional distinctions, John has been a recipient of the State-of-the-Art in Civil Engineering Award, presented by the American Society of Civil Engineers (ASCE), and is a contributing member of the following committees: ASCE 7-28 Wind Load Subcommittee; ASCE 49 Task Committee on Wind Tunnel Testing for Buildings and Other Structures; Structural Engineering Institute (SEI) Pre-Standard for Performance-Based Design for Wind; and ASCE Tall Buildings Committee Design and Performance of Tall Buildings for Wind.

Keynote Speech 1

Exploring the Role of Turbulence, Noise, Damping and Correlation in Stabilizing Dynamic Systems: A Harmonic Oscillator Perspective

Keynote Speaker: Ahsan Kareem,
University of Notre Dame
Moderator: Yukio Tamura, Chongqing University

Time: 9:00 am-9:45 am, Tue., 20 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: This lecture will focus on exploring the influence of turbulence, damping, noise and correlation in stabilizing the dynamics of systems of mechanical, electrical, aerodynamic, hydrodynamic and other origins. Added damping in a structural system tends to tame its behavior by lessening the amplitude of motion. Along the same lines, turbulent fluctuations in the approach flow field upon interacting with a structure like a building or a bridge lead to aerodynamic pressure fluctuations replicating those present in the inflow field and at additional frequencies ensuing from nonlinear aerodynamic features. These fluctuations in the regions where flow does not remain attached to the structure (surfaces parallel to the flow) have been observed to fade in the presence of added turbulence in the inflow. These trends are manifested by way of dampening the instabilities in the separated flow regions around the building that leads to vitiating the enveloping flow field energetics and hence the aerodynamic forces. This is similar to adding damping to the flow field fluctuations resulting in a reduction in loads and hence building response. Similarly, noise is known to influence the dynamics of nonlinear systems by influencing the onset of bifurcation behavior, stability and the transition to chaos. The lack of correlation structure, e.g., in fluid (wind & waves) structure interaction tends to reduce the integrated load effects. The lack of correlation may be due to the nature of approach flow field and any asymmetry in it, e.g., turbulence and directional seas and variations in the profile of the form of building/bridge profile. In numerical simulation of flow fields often introduction of damping through different means tends to dampen out high frequency fluctuations. This note briefly discusses the analogous role of damping, turbulence, correlation and noise in taming the behavior of dynamic systems based on the notion that everything is a "harmonic oscillator" and mutual interactions among them manifest vicissitudes in the system dynamics! These can be viewed as virtual harmonic oscillators that facilitate simple-to-understand analogs that conceptually capture the complexity otherwise couched in a complex system of equations. The role of these features on the virtualization of systems, making sense out of sensing, and issues surrounding the three "nons," i.e., nonlinearity, non-Gaussianity and non-stationarity will be discussed.

Biography: Ahsan Kareem, Dist. FASCE, NAE, is the Robert M. Moran Professor of Engineering in the Department of Civil & Environmental Engineering and Earth Sciences (CEEES) at the University of Notre Dame. He served as the President of the American Association of Wind Engineering (AAWE) and International Association of Wind Engineering (IAWE). The focus of his work is on quantifying load effects caused by various natural hazards on structures and to develop innovative strategies to manage and mitigate their effects. This includes characterization and formulation of dynamic load effects due to wind, waves and earthquakes on tall buildings, long-span bridges, offshore structures and energy related structures that is carried out via fundamental analytical computational methods, and experiments at laboratory, and full-scale. He directs NatHaz Group (NatHaz Modeling Laboratory) which focuses on developments in cyberspace virtual collaborative research platforms, e.g., virtual organizations, IoT, edge computing, crowdsourcing, computational intelligence, living laboratories, sensing and actuation, citizen sensing, web-enabled analysis and design, scientific machine learning (SciML) and cloud-based computing to address challenges posed by natural hazards to the built environment.

Yukio Tamura
Chongqing University

Biography: Yukio Tamura is a Professor and the Advisory Director of Research Center of Wind Engineering, Environment and Energy,

Chongqing University, China. He is also the Honorary Director of the Wind Engineering Research Center of Tokyo Polytechnic University, Japan. He served as the President of the International Association for Wind Engineering for eight years from 2007 to 2015. He is now serving as the Honorary Chair of the International Thematic Group for Wind-Related Disaster Risk Reduction under the auspices of the United Nations Office of Disaster Risk Reduction. He received the ASCE Jack E. Cermak Medal in 2004, the ASCE Robert H. Scanlan Medal in 2016, and the IAWE Alan Davenport Medal in 2016. In addition, due to his various professional contributions, he has received other important awards, including the Japan Association for Wind Engineering 2015 Design Award for his contribution to the wind resistant design of the Tokyo Sky Tree, the Chinese Government Friendship Award in 2017, Chinese National Science and Technology Development Award in 2024. He is a member of the Engineering Academy of Japan, a Foreign Fellow of the Indian National Academy of Engineering, and an International Member of the Chinese Academy of Engineering.

Keynote Speech 2

Coastal Resilience in a Changing Climate

Keynote Speaker: Jane Smith,
University of Florida
Moderator: Jamie E. Padgett, Rice University

Time: 9:45 am-10:30 am, Tue., 20 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: The identity of coastal communities is tied to their connection to the coast. Increasing climate change-driven coastal hazards (raising sea levels, wind intensification, and compound flooding) together with increased exposure (coastal construction and population growth) is increasing risk along US shorelines. In just the past 3 years, the US has been impacted by four hurricanes that rank in the top ten for US tropical cyclone damages (based on 2024 dollars) as well as numerous fatalities. Increased hurricane intensity is fueled by warmer ocean temperature, and although the number of hurricanes may not increase, Category 4 and 5 cyclones are projected to increase by 10% by 2100. In addition, increased rates of hurricane intensification, slower decay at landfall, slower forward speeds, and increased rainfall are already causing increased impacts. More intense hurricanes produce larger waves and storm surge, greater direct wind damage, and increased erosion, flooding, and infrastructure damage. More rapid intensification results in less predictive accuracy in winds, waves, and surge, and less time for evacuations and storm preparation. Longer hurricane seasons and poleward shifts of hurricane tracks extend the range of impacts in time and space (e.g., 2024 saw the earliest Category 5 hurricane on record in the Atlantic basin, Hurricane Beryl on July 1st). Climate-driven environmental impacts such as coral bleaching and vegetation type/coverage impact natural protection in coastal areas.

Coastal resilience is defined as the capacity to anticipate and plan for disturbances, resist damages and/or absorb impacts, rapidly recover afterwards, and adapt to stressors, changing conditions and constraints. Traditional “gray” coastal engineering approaches (e.g., seawalls, breakwaters, groins) to lower flood and erosion risk can negatively impact the coastal system and disconnect people from coastal amenities. These approaches are also challenging to adapt for nonstationary in the hazard. Nature-based solutions (beach nourishment, reefs, vegetated features) are gaining in popularity and have the potential advantage of natural adaptation, but nature-based solutions require larger footprints to implement and can be ineffective under extreme hazards (e.g., large hurricane waves and storm surge). Hybrid solutions combining hard and soft (gray and green) approaches are an area of active investigation. Nature-based and hybrid solutions also generally have greater environmental and social benefits.

Design and adaption of coastal protection requires quantification of the risk due to wind, waves, and surge over a range of scales. The intersection of wind engineering and coastal engineering has generally had limited overlap. Atmospheric observations and models provide critical input to drive storm surge and wave models that are applied to evaluate coastal risk both through forecasts and hindcasts, but feedback from waves and surge are not commonly applied to the atmospheric models. At the coast, the downscaling of wind information to resolve nearshore processes, wave breaking, and coastal morphological features is challenging. The aeolian transport of sediments on beaches and dunes is dependent on moisture content, armoring, beach gradients, and interaction with beach vegetation on sub-meter resolution. These interactions become even more daunting for the rapidly varying hurricane wind fields in time and space.

This presentation will discuss the evolving coastal hazards and coastal engineering requirements for wind research to quantify and reduce risk for coastal communities.

Biography: Jane Smith is a Research Professor at University of Florida and an Emeritus Senior Research Scientist at the US Engineer Research and Development Center (ERDC), Coastal and Hydraulics Laboratory. She earned a PhD from University of Delaware in Civil Engineering with an emphasis in Coastal Engineering. Her research focus is on coastal hydrodynamics, including nearshore waves and currents, shallow-water wave processes, and storm surge. Her projects include theoretical and numerical studies as well laboratory and field experimentation. Smith is a member of the National Academy of Engineering and a Distinguished Member of American Society of Civil Engineers. She received the 2022 International Coastal Engineering

Award. Smith serves on editorial boards for Coastal Engineering; Journal of Waterway, Port, Coastal and Ocean Engineering; and Frontiers in Built Environment and is a member of the Marine Board of the National Academies. She has over 200 professional publications.

Jamie Padgett
Rice University

Biography: Jamie E. Padgett is the Stanley C. Moore Professor and Department Chair of Civil and Environmental Engineering at Rice University in Houston, TX. Padgett is a structural engineer whose research is focused on multi-hazard risk and resilience modeling of structural portfolios and infrastructure systems, while understanding their impacts on communities. Her work develops new methods to quantify and improve the performance of infrastructure exposed to natural hazards such as earthquakes, hurricanes and flooding. Padgett's research has applications to a range of systems, including bridges, tank farms, energy and industrial facilities, and intermodal transportation systems. She has published over 300 articles in journals or archived conference proceedings in the general area of structural fragility, life-cycle assessment, and infrastructure resilience. Dr. Padgett has received several prestigious awards and recognitions including the American Society of Civil Engineers (ASCE) Charles Martin Duke Lifeline Earthquake Engineering Award (2024); TAMEST Edith and Peter O'Donnell Award (2023); Executive Leadership in Academic Technology, Engineering and Science (ELATES) Fellowship (2021-2022); Engineering Mechanics Institute (EMI) Objective Resilience Distinguished Lecturer (2019); ASCE Walter L. Huber Civil Engineering Research Prize (2017); and the National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award (2011). She is a Fellow of ASCE and the Structural Engineering Institute (SEI) and the founding Chair of its technical committee on Multiple Hazard Mitigation. Among other advisory and professional service roles, Padgett serves on Editorial Boards for such journals as the ASCE Journal of Structural Engineering, Structural Safety, and Reliability Engineering and System Safety. Padgett serves in leadership roles within several large national research efforts including the NIST Center of Excellence for Risk-based Resilience Planning, the NSF Natural Hazards Engineering Research Infrastructure (NHERI) Cyberinfrastructure "DesignSafe-CI", and the Severe Storm Prediction Education and Evacuation from Disasters (SSPEED) Center. She is the Faculty Director of the inaugural Gulf Scholars Program at Rice University funded by NASEM's Gulf Research Program, and an NSF BRITE Fellow. Padgett has played an active role in supporting opensource software, data sharing and publication in the natural hazards engineering domain, contributing to the development of IN-CORE (Interdependent Networked Community Resilience Modeling Environment) and DesignSafe-CI, including numerous shared testbeds, datasets, and training resources.

Keynote Speech 3

Multimode Vortex-Induced Vibration and Its Control of Long-Span Suspension Bridges

Keynote Speaker: Xugang Hua, Hunan University
Moderator: Yaojun Ge, Tongji University

Time: 1:00 pm-1:45 pm, Tue., 20 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: Recently several long-span suspension bridges experienced the unexpected notable vortex-induced vibrations (VIV) at moderate wind velocity, which raises wide social concern. Long-span suspension bridges are characterized by closely-spaced vertical vibration modes, and there may exists more than 10 vertical modes below a natural frequency of 0.5Hz. These modes may be excited in turn by vortex shedding increasing of wind velocity, which refers to the multi-mode vortex-induced vibration (VIV) for suspension bridges. The higher-mode VIV tends to have a larger acceleration and poses a more stringent requirement design requirement. Therefore, there is an urgent need for a comprehensive study in the theory and control method of multi-mode VIV of long-span suspension bridges.

In this talk, the characteristics and hazards of multi-mode VIV in suspension bridges will be described, as well as the common countermeasures (including aerodynamic, structural and damping measures) to mitigate VIV. The main contents of this work includes two parts. In first part, a new aeroelastic wind tunnel model, which is termed as the elastically multi-supported aeroelastic model, is developed and its design method is described. VIV of about 10 vertical modes are successfully reproduced wind tunnel tests. In the second part, the threshold of VIV amplitude for different modes are obtained by considering user conform and driver visual impact, and a new tower-girder damping system and its optimal design is developed for mitigating multi-mode VIV which is especially suitable for existing suspension bridges. Finally, the multi-mode VIV control scheme for the Parrot Island Yangtze River Bridge) is introduced, and the effect of the ‘direct vibration-reduction system’ in suppressing multi-mode VIV of a long-span suspension bridge is verified.

Biography: Xugang Hua is a Professor and Ph.D. supervisor at Hunan University, currently serving as the Dean of the School of Civil Engineering and Director of the Wind Engineering Research Center. He is also the Deputy Director of the National Key Laboratory for Bridge Safety and Resilience and Director of the Hunan Provincial Key Laboratory of Wind and Bridge Engineering. He is a recipient of the National Science Fund for Distinguished Young Scholars and Excellent Young Scholars, and serves as a principal investigator for national key R&D projects. His research focuses on bridge wind-induced vibration and vibration control, structural dynamics and aeroelasticity of offshore wind turbines, and active/semi-active structural control. He proposed a novel bridge flutter analysis method based on virtual self-excited force elements, developed multi-mode vortex-induced vibration mitigation strategies for suspension bridges, and invented new technologies including dynamic bridge excitation via continuous jumping vehicles and eddy current damping systems. He led China’s first demonstration project of eddy current damping on a large cable-stayed bridge. He has received multiple prestigious awards, including the First Prize of the National Technological Invention Award (2nd place) and the Second Prize of the National Science and Technology Progress Award (6th place).

Yaojun Ge
Tongji University

Biography: Yaojun Ge is a professor at the Department of Bridge Engineering of Tongji University. He has been engaged in bridge engineering and wind engineering education, research and practice for 40 years. He has made outstanding contributions in the areas of the refined theory of wind-induced vibration, wind-resistant design and control of long-span bridges, bridge design theory and construction control methods. He has edited and published 9 monographs, and published over 300 journal papers and over 150 conference papers. He has won the

Second Prize of the National Natural Science Award, the National Invention Award, the National Science and Technology Progress Award. He has also received some international awards such as the ICARO Award, the T.Y. Lin Medal, the Davenport Medal, the IABSE Honorary Member, etc. He once served as the President of the International Association for Bridge and Structural Engineering (IABSE), the Coordinator of the Asia-Oceania Region of IAWE, the President of Institution of Bridge and Structural Engineering of China.

Keynote Speech 4

Extreme Winds Modeling for Sustainable Wind Energy Planning

Keynote Speaker: Ruby Leung, Pacific Northwest National Laboratory
Moderator: Dickie Whitaker, Oasis LMF

Time: 8:35 am-9:20 am, Wed., 21 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: Extreme winds associated with intense storms such as hurricanes, severe convective storms, and atmospheric rivers pose major hazards to wind energy infrastructure. Storm-resolving models at kilometers resolution are needed to simulate extreme winds and their future changes. Advances in numerical modeling using unstructured grids have made it possible to simulate intense storms at a regional-to-continental scale using regional refinement in global models. While these models have been demonstrated to simulate extreme storms with high fidelity, their high computational cost and low throughput limit their current use to storyline simulations of historic extreme storms and their unfolding in the future. Complementary to storm-resolving models, synthetic hurricane models have been used to support the analysis of storm-induced risk. In this presentation, I will discuss recent advances in storm-resolving modeling and synthetic storm modeling using examples, highlighting successes as well as challenges, and discuss directions in extreme winds modeling to support sustainable wind energy planning.

Biography: L. Ruby Leung is a Battelle Fellow at Pacific Northwest National Laboratory. Her research broadly cuts across multiple areas in modeling and analysis of climate and the hydrological cycle including land-atmosphere interactions, orographic processes, monsoon climate, climate extremes, land surface processes, and aerosol-cloud interactions. Her research on climate change impacts has been featured in Science, Popular Science, Wall Street Journal, National Public Radio, and many major newspapers.

Dr. Leung is the Chief Scientist of Energy Exascale Earth System Model (E3SM) supported by U.S. Department of Energy, a major effort to develop state-of-the-art capabilities for modeling human-Earth system processes on DOE's next generation high performance computers. She has organized key workshops sponsored by DOE, NSF, NOAA, and NASA, and served on advisory panels and NRC and NASEM committee that define future priorities and opportunities in Digital Twin, AI/ML, climate modeling, hydroclimate, and water cycle research. She is an editor of the American Meteorological Society Journal of Hydrometeorology. Dr. Leung is an elected member of the National Academy of Engineering and Washington State Academy of Sciences. She is a fellow of the American Meteorological Society (AMS), American Association for the Advancement of Science (AAAS), and American Geophysical Union (AGU). She is the recipient of the AMS Hydrologic Sciences Medal in 2022, AGU Global Environmental Change Bert Bolin Award and Lecture in 2019 and the AGU Atmospheric Science Jacob Bjerknes Lecture in 2020. In 2021, Dr. Leung received the U.S. Department of Energy Office of Science Distinguished Scientist Fellow Award. She has published over 500 papers in peer-reviewed journals.

Dickie Whitaker
Oasis LMF

Biography: Dickie Whitaker has 40 years' experience in the (Re)Insurance business and for the last 20 years has specialized in risk and innovation, linking academia, government and finance. He co-founded The Lighthill Risk Network, The Oasis Hub, Innovate UK's Knowledge Transfer Network for finance and is chief executive of Oasis Loss Modelling Framework Ltd. He does or did provide advisory roles to: UK's Satellite Applications Advisory Board, UK actuarial Institute Research & Thought Leadership Committee, Expert Group for the Global Risk Assessment Framework (GRAF), UNISDRR, The Centre for Risk Studies Cambridge University Cabot Institute advisory board, EU Climate Adaption mission assembly member, Big Ticket Inc Global Advisory Board.

Keynote Speech 5

Hurricanes, Tornadoes, and Derechos - Oh My! (Improving Community Resilience to Extreme Wind Hazards through Interdisciplinary Modeling)

Keynote Speaker: John van de Lindt,
Colorado State University
Moderator: Chirstopher Letchford,
Rensselaer Polytechnic Institute

Time: 1:00 pm-1:45 pm, Wed., 21 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: Resilience is the ability to prepare for, adapt to, and recovery rapidly from hazards such as tornadoes and hurricanes. The ability to model a community necessitates combining models from different disciplines including their interfaces, the propagation of uncertainty, and ultimately the measurement of resilience metrics across physical systems, households, social institutions, and the economy. This presentation will begin with a very brief summary of the history of community resilience research in the United States, quickly moving to the state-of-the-research in interdisciplinary resilience modeling of communities and cities to extreme wind hazards such as tornadoes and hurricanes. Four areas of community stability are examined including population stability, economic stability, physical services stability, and social services stability to demonstrate policies that can improve resilience to extreme wind events produced by tornadoes and wind-wave-surge loading produced by hurricanes. The cities of Joplin, Missouri and Galveston, Texas, are presented as examples for tornado and hurricane hazards, respectively, highlighting both mitigation and policy approaches to improve resilience and accelerate community recovery. Examples are presented in a free open-source platform known as the Interdependent Networked Community Resilience Modeling Environment (IN-CORE) that is available to anyone as a result of a National Institute of Standards and Technology funded center.

Biography: Dr. John W. van de Lindt is the Harold H. Short Chaired Professor in the Department of Civil and Environmental Engineering at Colorado State University. Over the last two decades van de Lindt's research program has focused on performance-based engineering and test bed applications of buildings and other systems for hurricanes, tsunamis, earthquakes, tornadoes and floods. He has led data collection efforts following hurricanes, earthquakes, floods, and tornadoes with the most recent being the December 2021 Midwest tornado outbreak. Professor van de Lindt is the Co-director of the National Institute of Standards and Technology-funded Center of Excellence (COE) for Risk-Based Community Resilience Planning headquartered at Colorado State University in its tenth year. A major portion of the COE is to develop a computational platform IN-CORE to enable communities to measure their resilience to natural hazards. He serves as the Past Chair of the Executive Committee for the American Society of Civil Engineer's (ASCE) Infrastructure Resilience Division and has published more than 500 technical articles and reports including more than 250 journal publications. He currently serves on a number of journal editorial boards worldwide including as the Editor-in-Chief for the ASCE Journal of Structural Engineering.

Chirstopher Letchford
Rensselaer Polytechnic Institute

Biography: Chris Letchford obtained his Bachelor's degree in Civil Engineering with First Class Honours and University Medal from the University of Queensland in 1980. After graduating he worked for two years in the London Office of Ove Arup and Partners, Consulting Engineers. There he worked on the designs for the Britannia Leisure Centre, the Old Vic Theatre refurbishment, and the Menil Collection Museum in Houston under Peter Rice and Renzo Piano. He completed a doctorate at Oxford University in 1987 and has held academic appointments at the University of Queensland, Texas Tech University, the University of Tasmania and he has been leading the Department of Civil and Environmental Engineering at Rensselaer Polytechnic Institute, Troy, NY since 2011.

Chris Letchford chaired the Australasian Wind Engineering Society ('95-'99 and '08-'09) and the American Association for Wind Engineering ('15-'16). He was a member of the wind load committee for

AS1170.2-2001 and 2011 and is a voting member of the similar committee for ASCE 7-16 and ASCE 49 – 20. He has given keynote lectures in the International Wind Engineering Conference and at European and Asia-Pacific Regional Wind Engineering Conferences. In 2015 he gave the Scruton Lecture at the Institution of Civil Engineers in London on “The Evolution of Wind Engineering”. His research interests include fundamental bluff body aerodynamics, physical simulations of the atmospheric boundary layer, thunderstorm downburst, and tornado winds and the loads induced in structures by such extreme winds.

Keynote Speech 6

Can we reduce losses to residential structures in extreme windstorms?

Keynote Speaker: Gregory Kopp,
Western University
Moderator: Marck Levitan, National Institute of Standards and Technology

Time: 8:35 am-9:20 am, Thur., 22 May 2025
Location: Exhibition Hall North,
First floor of St. Charles Convention Center

Abstract: The performance of cladding, connections, and other building components is critical for reducing losses due to severe storms. From an engineering design perspective, there are two sides to this problem: (1) defining the loads on small elements that depend on complex, sometimes undefined, geometry, and (2) defining the resistance and capacity of these elements, which are often determined by standardized tests that greatly simplify the loading while using set-ups that often neglect possible building system effects. Design wind loads for cladding and building components are typically obtained via the wind tunnel method or from codes and standards, which also rely on wind tunnel data for their development. The determination of design wind loads for these systems is challenging, particularly for systems that are multi-layer and air permeable. Small air gaps between adjacent components and layers cannot be modeled at the typical scales used in boundary layer wind tunnels, which requires relaxation of the usual wind tunnel scaling laws for accuracy. Standardized tests apply uniform, static (or slowly varying cyclic) pressures to find the limiting load. The paper examines recent advances in the understanding of the aerodynamics of such air permeable systems, how the building alters these, and how both of these affect wind tunnel test methods, net loading on the different layers, and the simplifications assumed under standardized tests. Recommendations for developments to ensure improved performance-based design goals and improved disaster resilience of these systems are made.

Biography: Gregory Kopp is Professor of Civil & Environmental Engineering at Western University, where he also holds the ImpactWX Chair in Severe Storms Engineering and is the founding Director of the Canadian Severe Storms Laboratory (CSSL). He received a BSc in Mechanical Engineering from the University of Manitoba in 1989, a MEng from McMaster University in 1991 and a PhD in Mechanical Engineering from the University of Toronto in 1995. He has been at Western since 1997. His expertise and research relate to assessing and mitigating damage to structures during extreme wind storms such as tornadoes and hurricanes, building aerodynamics and wind tunnel testing, and wind loading and component testing of cladding systems. He works actively to implement research findings into practice, currently serving as Chair of the ASCE 49 Standards Committee on "Wind Tunnel Testing for Buildings and other Structures", and as a member of various other building code and design standards committees including the ASCE 7 Wind Loads Sub-Committee. Professor Kopp has won numerous awards including the IAWE Davenport Medal and ASCE's Cermak Medal.

Marc Levitan
National Institute of Standards and Technology (NIST)

Biography: Marc Levitan has been actively engaged in wind, hurricane, and tornado engineering research, practice, education and leadership for 30 years, His is currently the Lead Research Engineer for the National Windstorm Impact Reduction Program at NIST, the U.S. National Institute of Standards and Technology. He served as lead investigator for NIST studies of the 2011 Joplin Missouri tornado and 2013 Moore Oklahoma tornado. Dr. Levitan heads implementation of the recommendations resulting from these investigations, including chairing the technical committees that developed the tornado load provisions in ASCE 7, the International Building Code, and the ICC 500 Standard for Design and Construction of Storm Shelters.

Monday, 19 May 2025

1:00 pm-4:00 pm	Workshop: Deploying SimCenter Tools to Enhance Wind Engineering Research and Practice Chairs: Matthew Schoettler, Corinna Fong and Abiy Melaku, University of California, Berkeley *Location: Meeting Room 103, First Floor of St. Charles Convention Center*
2:30 pm-5:30 pm	Tornado Load Design using the ASCE 7-22 standard and the 2024 IBC Chairs: Marc Levitan, National Institute of Standards and Technology; Shane Crawford, University of Alabama *Location: Junior Ballroom D, First Floor of St. Charles Convention Center*
6:00 pm-9:00 pm	Ice-breaker Welcome Reception *Location: Exhibition Hall North, First Floor of St. Charles Convention Center*

Tuesday, 20 May 2025

7:30 am-8:30 am	Coffee and Tea *Location: Pre-function Area of Exhibition Hall North*
8:30 am-9:00 am	Chasing the Wind: Opening Ceremony *Location: Exhibition Hall North, First floor of St. Charles Convention Center.* **Speakers:** Grace Yan, Professor, Missouri University of Science and Technology Kamal Khyat, Vice Chancellor for Research and Innovation, Missouri University of Science and Technology Claudio Borri, President of International Association for Wind Engineering Dorothy Reed, President of American Association for Wind Engineering
9:00 am-9:45 am	Keynote Speech: Exploring the Role of Turbulence, Noise, Damping and Correlation in Stabilizing Dynamic Systems: A Harmonic Oscillator Perspective Keynote Speaker: Ahsan Kareem, University of Notre Dame Moderator: Yukio Tamura, Chongqing University *Location: Exhibition Hall North, First floor of St. Charles Convention Center*

Tuesday, 20 May, Morning session, 11:00 am-12:00 pm

Panel Discussion: Future Wind Engineering Research Directions for a Changing World Chair: Teng Wu		
Junior Ballroom A	11:00 am-12:00 pm	Chair and Panelists: ➢ Teng Wu ➢ Tanya Brown-Giammanco ➢ Chris Letchford
Projection of Future Design Wind Speeds Chairs: Franklin Lombardo & Thomas Smith		
Junior Ballroom B	11:00 am-11:15 am	39 Characterization of Near-Surface Wind in Cedar Rapids, Iowa Based on Atmospheric Thermal Stability Elliott Walker; Wei Zhang; Corey Markfort
	11:15 am-11:30 am	205 An Updated Non-Hurricane Extreme Wind Climatology of the United States Michael Pagnanelli; Franklin Lombardo
	11:30 am-11:45 am	241 Preliminary Building Enclosure Design Guidelines for Use with the ASCE 7 Tornado Chapter Thomas Smith
	11:45 am-12:00 pm	224 Projection of Future Design Wind Speed Under Different Climate Scenarios Jiahao Wang; Guirong Yan
Bluff-Body Aerodynamics Chair: Partha Sarkar		
Junior Ballroom C	11:00 am-11:15 am	127 Experimental Investigation of Tornadic Load on Building Models with Varying Heights Yonas Bekele; Jin Wang; Tibebu Birhane; Gregory Kopp; Girma Bitsuamlak
	11:15 am-11:30 am	180 An Experimental Investigation on the Effects of Crosswinds on Passing High-Sided Vehicles on Highway Sections in a Boundary Layer Wind Tunnel Muhammad Ahmad Siddique; Partha Sarkar; Omar Smadi
	11:30 am-11:45 am	209 Equivalent Wind Loads on Moment-Framed Low-Rise Metal Buildings Yang Chen; Jin Wang
	11:45 am-12:00 pm	72 Study of TLVs Impact on Low-Rise Buildings Matthieu Hancock-LeFebour; Elena Dragomirescu
Machine Learning and Artificial Intelligence Chair: Sungmoon Jung		
Junior Ballroom D	11:00 am-11:15 am	6 Dataset for Heterogeneous Terrain and Its Application to Wind Pressure Prediction of Low-Rise Buildings Lee-Sak An; Sungmoon Jung
	11:15 am-11:30 am	31 Predictive Modeling and Analysis of Wind-Induced Response in Traffic Sign Structures Using Machine Learning Techniques Mahtab Goudarzi; Alice Alipour
	11:30 am-11:45 am	168 Asphalt Shingle Wind Performance Dataset for Improved Damage Detection and Masking Daniel Yahya; David Roueche; Jordan Nakayama; Ian Giammanco; Brandon Rittelmeyer

	11:45 am-12:00 pm	175 Automatic Classification of Extreme Wind Events Using Machine Learning Juan Piccini; Valeria Durañona; Gonzalo Perera; Mariana Molinari
MS: Multi-Disciplinary Community Resilience and Reconnaissance Studies under Wind-Induced Events Chair: Lisa Wang & Shane Crawford		
Meeting Room 103	11:00 am-11:15 am	97 Performance and Fragility of Agricultural Infrastructure after Hurricane Idalia Gabriela Yáñez González; Christine E. Wittich
	11:15 am-11:30 am	8 Leveraging Remote Sensing and Deep Learning for Post-Tornado Damage Assessment and Recovery Prediction Abdullah Braik; Maria Koliou
	11:30 am-11:45 am	155 Performance of Manufactured Home Tie-Downs after Hurricane Michael Pedro Marquez Pesantez; Elaina Sutley; William Collins; Thang Dao
	11:45 am-12:00 pm	165 Physical-Social Community Resilience Simulation and Validation via Longitudinal Tornado Reconnaissance Studies Wanting (Lisa) Wang; John W. van de Lindt; Blythe Johnston; P. Shane Crawford; Guirong Yan

12:00 pm-1:00 pm	Lunch; AAWE Career Fair Lunch *Location: Exhibition Hall North, First floor of St. Charles Convention Center*
1:00 pm-1:45 pm	Keynote Speech: Multimode Vortex-Induced Vibration and Its Control of Long-Span Suspension Bridges Keynote Speaker: Dr. Xugang Hua, Hunan University Moderator: Dr. Yaojun Ge, Tongji University *Location: Exhibition Hall North, First floor of St. Charles Convention Center*

Tuesday, 20 May, Afternoon session, 1:45 pm-3:15 pm

Workshop: High Performance Computing Resources and Workflows on DesignSafe Chairs: Fred Haan & Jean-Paul Pinelli		
Junior Ballroom A	1:45 pm-3:15 pm	Chairs and Panelists: ➢ Fred Haan ➢ Jean-Paul Pinelli ➢ Ahsan Kareem
MS: Advancements in Performance-Based Wind Engineering Chairs: Arthriya Subgranon & Seymour M.J. Spence		
Junior Ballroom	1:45 pm-2:00 pm	59 Inelastic Wind Design for Steel Moment Frame Buildings Johnn Judd; Tyler Giles

B	2:00 pm-2:15 pm	73 Wind-Induced Interference Effects on the Structural Performance of Buildings Azin Ghaffary; Luis Ceferino
	2:15 pm-2:30 pm	78. Effects of Shear Wall Eccentricity on High-Rise Building Wind Design: A Performance-Based Database-Assisted Design Daniel Rhee; DongHun Yeo; Brian Carmen; Mehedy Mashnad; Charys Clay
	2:30 pm-2:45 pm	81 Structural Reliability Analysis of Wind-Excited Tall Timber-Braced Frame Buildings with Consideration of Connection Ductility Nahom Berile; Matiyas Bezabeh
	2:45 pm-3:00 pm	82 Full-Scale Experimental and Numerical Analysis of U-Shaped Flexural Plates Under Simulated Wind Loading Protocols Nahom Berile; Matiyas Bezabeh
	3:00 pm-3:15 pm	182 Probabilistic Framework for Evaluating Energy Loss from Building Envelope Damage in Extreme Wind Events Imad Alhayik; Arthriya Subgranon; Ryan Sharston
MS: Catastrophe Modeling of Wind Hazards Chairs: Paolo Bocchini & Haifeng Wang		
Junior Ballroom C	1:45 pm-2:00 pm	55 Wind Vulnerability of Industrial Facilities Equipment Nahuel Bonfante; Jean-Paul Pinelli
	2:00 pm-2:15 pm	61 A Unifying Framework for Hurricane Wind Risk Simulation: Mobilizing the Literature into Shared Research Infrastructure Rachel Hamburger; Adam Zsarnóczay; Nii Otu Tackie-Otoo; Tracy Kijewski-Correa; Rachel Davidson; Seymour Spence
	2:15 pm-2:30 pm	75 Tornado Loss Assessment of Moore City, OK with Near Surface Tornadic Wind Field Simulation Xinyang Wu; Guangzhao Chen
	2:30 pm-2:45 pm	90 Modeling of Tornado Hazard to Wind Turbines Djordje Romanic; Romane Bouchard
	2:45 pm-3:00 pm	119 An Examination of the Reliability of ASCE 7 Main Wind Force Resisting System Wind Loads Therese McAllister; Peter Vickery; Eun Cha; Ruohua Guo; Melissa Burton; Lauren Mudd
	3:00 pm-3:15 pm	129 Geometry Aware Conditional Neural Network-Based Wind Load Estimation for Buildings Haifeng Wang; Paolo Bocchini; Jamie Padgett
MS: AI in Wind Engineering Chairs: Teng Wu & Roy Denoon		
Junior Ballroom D	1:45 pm-2:00 pm	37 Aerodynamic Performance Prediction of Shape-Unrestricted Bluff Body Sections Based on Deep Learning LuLu Wang; Ke Li
	2:00 pm-2:15 pm	80 Aero-Structural Design of Bluff Decks Based on the Emulation of Self-Excited Forces via Temporal Fusion Transformers Miguel Cid Montoya; Ashutosh Mishra; Sumit Verma; Omar A. Mures
	2:15 pm-2:30 pm	110 Uniqueness of Prediction in Wind Speed Nowcasting: The Impact of Input/Output Sequence Sizes

		Mahmoud Elnahla; Yanlin Guo; Teng Wu
	2:30 pm-2:45 pm	112 Mapping Fan Control Parameter to Wind Field in Multi-Fan Wind Tunnel via Convolutional Neural Network Baoheng Li; Teng Wu
	2:45 pm-3:00 pm	118 Equation Discovery of Vortex-Induced Aerodynamic Force Using Nonlinear Sparse Bayesian Learning Method Jijiu Liu; Genshen Fang; Yaojun Ge
	3:00 pm-3:15 pm	146 Machine Learning-Assisted Estimation of Wind Loads for Tall Building Design Workamaw Warsido; Travis Engle; Roy Denoon
MS: Multi-Disciplinary Community Resilience and Reconnaissance Studies under Wind-Induced Events Chairs: Lisa Wang & Tanya Brown-Giammanco		
Meeting Room 103	1:45 pm-2:00 pm	27 Equity-Based Infrastructure Retrofitting: Performance Implications Under Hurricane Winds Abigail Beck
	2:00 pm-2:15 pm	44 Evaluating the Benefit-to-Cost Trade-Offs of Extending Tornado Load Provisions to Residential Buildings Afeez Badmus; Elaina Sutley
	2:15 pm-2:30 pm	51 Geospatial Multivariate Wind Fragility Analysis of Utility Poles Under Multiple Failure Modes Muneer Qudaisat; Alice Alipour
	2:30 pm-2:45 pm	60 Uptake of Mitigation Measures in Post-Hurricane Recovery: A Case Study of Hurricane Laura in Louisiana Rachel Hamburger; Tracy Kijewski-Correa; Debra Javeline
	2:45 pm-3:00 pm	70 NIST's Hurricane Ian Wind Performance Research Study Tanya Brown-Giammanco; Tanya Brown-Giammanco; David Webb; Yalda Saadat; Nico de Toledo
	3:00 pm-3:15 pm	194 Wind Damage Assessments Through Post-Event Reconnaissance and Forensic Investigations Mohammad Moravej; Anurag Jain; Can Simsir; Behnam Arya; Mohammad Aghajani Delavar

3:15 pm-3:45 pm	Networking Breeze: Coffee Break *Location: Hallways/Corridors*

Tuesday, 20 May, Late afternoon session, 3:45 pm-5:15 pm

Workshop: Windstorm Protection: Storm Shelters and Safe Rooms Chair: Marc Levitan		
Junior Ballroom A	3:45 pm-5:15 pm	Chair and Panelists: ➢ Marc Levitan ➢ Shane Crawford Moderator: Nico de Toledo

MS: Advancements in Performance-Based Wind Engineering Chairs: Arthriya Subgranon & Seymour M.J. Spence		
Junior Ballroom B	3:45 pm-4:00 pm	120 WiRA: A Software Solution for Enabling Performance-Based Wind Engineering Bowei Li; Enrica Bernardini; Seymour M.J. Spence
	4:00 pm-4:15 pm	121 Optimal Sensor Placement for Wind Load on Low-Rise Buildings Using Mr DMD and QR Pivoting Raghdah Al-Chalabi; Magdy Alanani; Ahmed Elshaer
	4:15 pm-4:30 pm	163 Simulation of Non-Gaussian Multivariate Wind Processes Through Data-Informed Stochastic Models: Error Quantification and Data Requirements Thays Duarte; Srinivasan Arunachalam; Arthriya Subgranon; Seymour Spence
	4:30 pm-4:45 pm	High-Fidelity Numerical Simulation for Evaluating Tornado Retrofit Strategies Jiamin Dang; Grace Yan
	4:45 pm-5:00 pm	230 Heavy Rainfall Suppression Using Wind Turbines Kosei Yamaguchi; Taichi Nishimura; Takanori Uchida; Eiichi Nakakita
MS: Catastrophe Modeling of Wind Hazards Chairs: Paolo Bocchini & Xinzhe Yuan		
Junior Ballroom C	3:45 pm-4:00 pm	130 Optimal Scenario Selection for Efficient Regional Hurricane Wind Risk Assessment Jun Kuang; Min Li; Christopher Letchford
	4:00 pm-4:15 pm	157 Multi-Hazard Fragility Analysis of Industrial Structures Subjected to Dynamic Loads from Tropical Cyclones Andres Calvo; Jamie Padgett
	4:15 pm-4:30 pm	213 Spatio-Temporal Snow Vulnerability of Buildings in the Continental United States Jorge Mario Lozano; Sarah Bobby; Srinivasan Arunachalam; Karthik Ramanathan
	4:30 pm-4:45 pm	172 A New Analytical Wind Model for Simulating Nor'easters Wind Fields Seyedeh Fatemeh Mirfakhar; Reda SnaikiJohnson; Karthik Ramanathan
	4:45 pm-5:00 pm	215 Study of Regression Methods for Extratropical Cyclone Wind Vulnerability Models Based on Insurance Claim Data Xinzhe Yuan; Negar Mohammadgholibeyki; Aman Karamlou; Karthik Ramanathan
	5:00 pm-5:15 pm	216 Modeling Freeze Vulnerability in the United States Srinivasan Arunachalam; Sarah Bobby; Jorge Mario Lozano; Karthik Ramanathan
MS: AI in Wind Engineering Chairs: Teng Wu & David Roueche		
Junior Ballroom D	3:45 pm-4:00 pm	158 Generating Wind Direction Maps from Treefall Patterns in Forested Regions Using Deep Learning with Statistical and Physics-Informed Analysis Mitra Nasimi; Richard Wood
	4:00 pm-4:15 pm	162 Integrating Prior Knowledge with Empirical Windstorm Performance Data: A Bayesian Approach Jordan Nakayama; David Roueche
	4:15 pm-4:30 pm	198 Subcategorization of Non-Synoptic Winds Using Radar Data and Machine Learning David T. Roegner; Franklin T. Lombardo; Robert J. Trapp; Alex M. Haberlie

	4:30 pm-4:45 pm	184 LSTM-Based Metamodeling with Transfer Learning for Efficient Wind Response Evaluation in Performance-Based Design Bowei Li; Seymour M.J. Spence
	4:45 pm-5:00 pm	30 Dimensionality Reduction and Coherent Structure Identification of Pedestrian-Level Turbulent Flows Haitham Osman; Naoki Ikegaya
	5:00 pm-5:15 pm	
MS: Computational Wind Engineering Chairs: Panneer Selvam & Girma Bitsuamlak		
Meeting Room 103	3:45 pm-4:00 pm	200 An Automated Procedure to Implement Roughness Exposure in Open-Source Tool for Mesoscale CFD Simulations Alessio Ricci; Burlando Massimiliano
	4:00 pm-4:15 pm	25 DES and LES Simulation of Wind Loads on a Ground-Mounted Solar Array Xinlong Du; Tracy Becker; Abiy Melaku; Zachary Taylor
	4:15 pm-4:30 pm	47 Arecibo Telescope Response in Hurricane Maria Zhi Zhang; Xin Chu; Reyhaneh Abbasi; Pierre Ghisbain; Liling Cao; John Abruzzo
	4:30 pm-4:45 pm	The Role of Compressible Flow Simulation in Tornado Simulation Peng Yue; Grace Yan
	4:45 pm-5:00 pm	86 CFD Modeling of NEWRITE in Microburst Mode to Investigate H/D Effect on Flow Structure Rathinam Selvam; Andre Hanley; Partha Sarkar
	5:00 pm-5:15 pm	192 Spatio-Temporal Dynamics of Large-Scale Turbulent Interactions at the Leading Edge of 5:1 Rectangular Cylinder Jing Zhang; Daniel Lander; Luca Patruno; Onkar Sahni; Chris Letchford

5:30 pm-7:30 pm	Regional Assembly followed by AAWE Annual Members Meeting *Location: Junior Ballroom D, First floor of St. Charles Convention Center*

Wednesday, 21 May 2025

7:30 am-8:30 am	Coffee and Tea *Location: Pre-function Area of Exhibition Hall North*
8:30 am-8:35 am	Morning Welcome/Announcements *Location: Exhibition Hall North*
8:35 am-9:20 am	Keynote Speech: Extreme Winds Modeling for Sustainable Wind Energy Planning Keynote Speaker: Dr. Ruby Leung, Pacific Northwest National Laboratory Moderator: Dickie Whitaker, Oasis LMF *Location: Exhibition Hall North, First floor of St. Charles Convention Center*

Wednesday, 21 May, Morning session, 9:30 am-10:30 am

MS: Simulation of Wind Effects on Coastal Communities Chair: Ioannis Zisis		
Junior Ballroom A	9:30 am-9:45 am	9 Experimental Analysis of Wind and Wave Load Impacts on Coastal Buildings Guangzhao Chen; Arindam Chowdhury; Hermann Fritz
	9:45 am-10:00 am	99 Wind-Induced Torsional Loads on Irregular-Shaped Mid-Rise Buildings Mahmoud Abdallah; Ioannis Zisis; Manuel Matus
	10:00 am-10:15 am	94 Structural Response of Telecommunication Lattice Tower Under Synoptic Winds Mohamed Eissa; Omar Metwally; Mekdes T. Mengistu; Amal Elawady; Ileana Calotescu; Maria Pia Repetto
	10:15 am-10:30 am	186 A Real-Time Framework for Hurricane-Induced Damage Risk Forecasting in Building Envelope Systems Bowei Li; Seymour M.J. Spence
MS: Advancements in Performance-Based Wind Engineering Chairs: Arthriya Subgranon & Seymour M.J. Spence		
Junior Ballroom B	9:30 am-9:45 am	164 Data Requirements for Calibrating Stochastic Wind Models Targeting Extreme Response Prediction Thays Duarte; Srinivasan Arunachalam; Arthriya Subgranon; Seymour Spence
	9:45 am-10:00 am	166 Performance-Based Wind Assessment of Building Envelope Systems Under Extreme Collapse-Level Winds Jieling Jiang; Seymour Spence
	10:00 am-10:15 am	167 Investigation of Non-Stationary Hurricane Wind Effects on Nonlinear Structural Performance and Collapse Risk Srinivasan Arunachalam; Seymour Spence
	10:15 am-10:30 am	85 From Static Pushover to Incremental Dynamic Analysis: Efficient Wind Fragility Assessment in

		Performance-Based Wind Design Baichuan Deng; Teng Wu
MS: Catastrophe Modeling of Wind Hazards Chair: Paolo Bocchini & Zhen Hu		
Junior Ballroom C	9:30 am-9:45 am	217 Damage Pattern Identification among Residential Buildings Using Insurance Claims Data from Hurricanes Zhiming Zhang; Jianjun Luo; Karthik Ramanathan
	9:45 am-10:00 am	218 Modeling the Impact of Wind Duration on Building Damage Using Hurricane Insurance Company Claims Data Jianjun Luo; Tim Johnson; Zhiming Zhang; Karthik Ramanathan
	10:00 am-10:15 am	220 Evolution, Adoption and Enforcement of Building Codes in South Korea and Impact on Typhoon Wind Risk Mohanad Khazaali; Navya Vishnu; Tim Johnson; Karthik Ramanathan
	10:15 am-10:30 am	176 Towards a New Uruguayan Extreme Wind Map: Detection of Regions with Similar Climate Using Machine Learning Valeria Durañona; Juan Piccini; Gonzalo Perera; Mariana Molinari
Bridge and Cable Aerodynamics Chair: Yaojun Ge		
Junior Ballroom D	9:30 am-9:45 am	10 Evaluation of Wind Biases in Bridge-Mounted Anemometer Measurements Annick D'Auteuil; Sean McTavish
	9:45 am-10:00 am	19 Effects of Center Distance on Aerodynamic Forces of Two Parallel Rectangular Cross Sections (B/D = 5) Hiroshi Katsuchi; Yuki Sano; Jiaqi Wang
	10:00 am-10:15 am	33 Control of Wind-Induced Vibration of a Cable-Stayed Bridge Using Vortex Generators Chaoqun Wang; Zhiwen Huang; Xugang Hua; Zhengqing Chen
	10:15 am-10:30 am	71 Comparison of Aerodynamic Damping in Rain-Wind-Induced and Vortex-Induced Vibrations of Full-Scale Stay Cables Jiping Kang; Delong Zuo
MS: Computational Wind Engineering Chair: Panneer Selvam		
Meeting Room 103	9:30 am-9:45 am	201 A New Analytical Model for the Mean Velocity Profile in and above the Canopy Layer in Port Environments Alessio Ricci; Bert Blocken
	9:45 am-10:00 am	183 Analysis of Topology Effects on Gable Roof Buildings Using Inflow Turbulence Modeling Prethesha Alagusundaramoorthy; Jay Khodadadi; David Roueche
	10:00 am-10:15 am	87 Challenges in CFD Modeling of NEWRITE - A Large Tornado-Like Vortex Simulator Rathinam Selvam; Partha Sarkar
	10:15 am-10:30 am	96 A Comprehensive Framework for Verification, Validation, and Uncertainty Quantification in CFD: Application to Topographic Simulations Yunjae Hwang; Adam Pintar;

10:30 am-11:00 am	Brewing Connections over Coffee *Location: Hallways/Corridors*

Wednesday, 21 May, Late Morning session, 11:00 am-12:00 pm

MS: Simulation of Wind Effects on Coastal Communities Chair: Guangzhao Chen & Elaina Sutley		
Junior Ballroom A	11:00 am-11:15 am	133 Evaluating and Refining Wind Load Provisions for Elevated Buildings Haitham Ibrahim; Amal Elawady; David Prevatt
	11:15 am-11:30 am	240 Field Measurements of Coastal Wind Characteristics During the Passage of Typhoon Gaemi Hu Pan; Wang chaoqun; Hua Xugang
	11:30 am-11:45 am	122 Automated Building-Level Damage Predictions Concurrent with Tropical Cyclone Forecasts Steven Klepac; Arthriya Subgranon; Maitane Olabarrieta; John C. Warner; Joseph B. Zambon; Christopher R. Sherwood; Mark Carson; Emma Manzella; Muhamad Geonova; Yanda Ou; Ruoying He; Jennifer Warrillow; Z. George Xue; Daoyang Bao; Eli Hunter; James D. Doyle; Jonathan R. Moskaitis
	11:45 am-12:00 pm	
MS: Risk Assessment of Electric Power Systems against Hurricane Hazards Chair: Yousef Darestani & Ji Yun Lee		
Junior Ballroom B	11:00 am-11:15 am	42 Wind Directionality Effects on Transmission Tower Systems: A Large-Scale Aeroelastic Study Pooria Mazaheri; Alice Alipour
	11:15 am-11:30 am	231 A Study of Aging and Alternative Materials for Wind Reliability of Overhead Utility Poles Yousef Darestani
	11:30 am-11:45 am	52 Comprehensive Surrogate Fragility Modeling Framework for Transmission Towers Across the United States Under Extreme Wind Events Abdel-Aziz Sanad; Ji Yun Lee
	11:45 am-12:00 pm	
MS: Wind Energy and Wind-wave-structure Interactions Chairs: Haifeng Wang & Biswajit Basu		
Junior Ballroom C	11:00 am-11:15 am	239 Experimental Study of Wind Load on Tall Buildings Deepshikha Shukla; Ashutosh Sharma; Ajay Gairola
	11:15 am-11:30 am	Investigation of Wind Forcing on the Energy Dissipation of Solitary Waves in a Storm Surge Hunter Boswell; Grace Yan; Wouter Mostert; Daoru Han; Gaurav Savant
	11:30 am-11:45 am	190 Simulation of Wind-Wave Interaction and Its Impact on Wind Loading on Coastal Buildings Jianyu Wang; Hanul Hwang; Catherine Gorlé
	11:45 am-12:00 pm	235 A Revised First-Order IAG Dynamic Stall Model Incorporating Two Separation Points Qingshen Meng; Jonas Lohmann; Xugang Hua

Bridge and Cable Aerodynamics Chair: Xinzhong Chen		
Junior Ballroom D	11:00 am-11:15 am	49 Interaction between Von Kármán Vortex and Axial Vortex at a Reynolds Number of 1E4 with an Attack Angle of 30° Ran Wang; Shaohong Cheng; David S-K. Ting
	11:15 am-11:30 am	116 Investigation of Vortex-Induced Vibration of a Twin-Box Bridge Section: Aerodynamic Damping and Hysteresis Hongsheng Jiang; Xinzhong Chen
	11:30 am-11:45 am	35 Application of Energy Gradient Theory in the Study of Vibration Suppression Mechanism of Aerodynamic Measures Bo-long Zhao; Jia-wu Li
	11:45 am-12:00 pm	103 The Design of Laminar Decks in Aerodynamic Shape Optimization for Long-Span Bridges SEYED PEJMAN FATEHI; Yanlin Guo; Teng Wu
MS: Computational Wind Engineering Chairs: Panneer Selvam & DongHun Yeo		
Meeting Room 103	11:00 am-11:15 am	126 An Approach to Develop Maps of Extreme Temperatures at City Scale Using OpenFoam Alessia Piazza; Massimiliano Burlando; Girma T. Bitsuamlak; Maria Pia Repetto
	11:15 am-11:30 am	140 A Round-Robin Test Across Wind Tunnel Laboratories: Effects of Variations in Approach Flow on Aerodynamics and Structural Response of a High-Rise Building DongHun Yeo; Adam Pintar; Girma Bitsuamlak; Arindam Gan Chowdhary; Tsinuel Geleta; Kurtis Gurley; Stéphanie Hartlin; Un Yong Jeong; Sukjun Joo; Sunho Kim; Soon Duck Kwon; Seungho Lee; Jen Mller Madsen; Claudio Mannini; Tommaso Massai; Sren stbirk; Brian Phillips; Ioannis Zisis
	11:30 am-11:45 am	142 Validation of Turbulence Inflow Generation Methods for Wind Loads Prediction on a Generic Tall Building via LES Clément Asselin; Theodore Potsis; Ted Stathopoulos
	11:45 am-12:00 pm	193 Numerical Simulation of Wind-Induced Snow Drifting on Stepped Roofs of Multiple Fetch Length Xuan Xiang; Chris Letchford; Michael O'Rourke; Lakshmana Doddipatla

12:00 pm-1:00 pm	Lunch over Sponsor Spotlight *Location: Exhibition Hall North, First floor of St. Charles Convention Center*
1:00 pm-1:45 pm	Keynote Speech: Hurricanes, Tornadoes, and Derechos – Oh My! (Improving Community Resilience to Extreme Wind Hazards through Interdisciplinary Modeling) Keynote Speaker: Dr. John van de Lindt, Colorado State University Moderator: Chirstopher Letchford, Rensselaer Polytechnic Institute *Location: Exhibition Hall North, First floor of St. Charles Convention Center*

Wednesday, 21 May, Afternoon session, 1:45 pm-3:15 pm

MS: Debris Effects on Structures--Simulations and Vulnerability Assessments Chairs: Ioannis Zisis & Nigel Kaye		
Junior Ballroom A	1:45 pm-2:00 pm	18 Experimental Testing of Debris Flight in Turbulent Winds: Unsteady Approach vs Quasi-Steady Approach Shaopeng Li; Kimia Yousefi Anarak; Ryan Catarelli; Yanlin Guo; Kurtis Gurley; John van de Lindt
	2:00 pm-2:15 pm	43 Quantification of the Conditions for Roof Gravel Blowoff Md. Safwan Ahsanullah; Nigel Kaye
	2:15 pm-2:30 pm	62 Evaluating Spherical Debris Flight in Turbulent Conditions: Can Numerical Simulations Predict Experimental Results? Kimia Yousefi Anarak; Shaopeng Li; Ryan Catarelli; Yanlin Guo; Kurtis Gurley; John W. van de Lindt
	2:30 pm-2:45 pm	65 A New Stereo Vision Technique to Measure Three-Dimensional Trajectory of Flying Windborne Debris Kimia Yousefi Anarak; Yanlin Guo; Kurtis Gurley; John W. van de Lindt
	2:45 pm-3:00 pm	107 Tree-Induced Damage Vulnerability Model for Low-Rise Buildings Mohammad Bakhshandeh; Jean-Paul Pinelli; Amal Elawady, Haitham A. Ibrahim, and Fahim Ahmed
	3:00 pm-3:15 pm	125 Assessing Shielding Effects of Trees: A Comparative Study Fouad Elazaka; Omar Metwally; Haitham Ibrahim; Amal Elawady; Jian-Paul Pinelli
MS: Climate Change Impact on Winds Chairs: Eun Cha & Michele Barbato		
Junior Ballroom B	1:45 pm-2:00 pm	169 Offshore Wind Energy in the Face of Climate Change: Risk Assessment and Opportunity Exploration Susmita Bhowmik; Weichiang Pang; Michael Stoner; David V. Rosowsky; Andrew Myers; Sanjay Arwade; Spencer Hallowell
	2:00 pm-2:15 pm	84 Design Wind Speeds in Coastal Regions: A Comparison of Hurricane Track Models Under Changing Climate Baichuan Deng; Teng Wu
	2:15 pm-2:30 pm	174 Performance-Based Hurricane Engineering with Inclusion of Climate Change and Structural Aging Lei Zhou; Maria Echeverria; Michele Barbato
	2:30 pm-2:45 pm	189 Assessing Future Hurricane Risks for Rdential Buildings Under Changing Climate Conditions Bowei Song; Eun Jeong Cha
	2:45 pm-3:00 pm	179 Advances in the Characterization of Severe Storms That Generate Greenhouse Damage in the Northwestern Region of Uruguay Valeria Durañona; Mariana Molinari; Juan Piccini
	3:00 pm-3:15 pm	
MS: Impacts of Ground and Lower Boundary Conditions on Tornadoes Chairs: Jana Houser & Daniel Rhee		
Junior Ballroom C	1:45 pm-2:00 pm	106 Evaluation of Tornado Uplift Pressure Adjustment Factor Based on Tornado Simulator and Boundary Layer Wind Tunnel Experiments Xinyang Wu; Qiang Chen; Daniel Rhee; Marc Levitan; Delong Zuo

	2:00 pm-2:15 pm	156 Application of the ASCE Wind Speed Estimation Committee Draft Standard to the Greenfield, IA Tornado of 2024 James LaDue; Josh Wurman; Karen Kosiba; Partha Sarkar; David Roueche; Paul Robinson
	2:15 pm-2:30 pm	222 Influences of Large-Scale Buildings on Near-Surface Tornadic Wind Field Sung Min Moon; Franklin Lombardo; David Bodine; Zach Wienhoff; Jeremy Gibbs; Anthony Reinhart
	2:30 pm-2:45 pm	229 Preliminary Assessment of LES Tornado Surface Marks for Inferring Near-Surface Winds Michael Zimmerman
	2:45 pm-3:00 pm	232 Effects of Terrain and Land Cover on Tornado Intensity, Path, and Structure Jana Houser; Jiamin Dang; Grace Yan
	3:00 pm-3:15 pm	149 High-Performance Large Eddy Simulations on Regular Arrangements of Low-Rise Buildings Rodrigo Romanus; Aron Zavelinski; Alan Lugarini
Bridge and Cable Aerodynamics Chairs: Mark Sterling & Jianming Hao		
Junior Ballroom D	1:45 pm-2:00 pm	76 Experimental and Numerical Explorations of Triggering and Suppression of Vortex-Induced Vibrations for a Streamlined Box Girder with Water-Filled Barriers During Maintenance Weimeng Ma; Zhiwen Huang; Chaoqun Wang; Xugang Hua
	2:00 pm-2:15 pm	211 Study on the Active Aerodynamic Countermeasure for Vortex-Induced Vibration of the Œ†-Shaped Box Girder Han Xiao; Zhiwen Liu; Julian Unglaub; Zhengqing Chen; Klaus Thiele
	2:15 pm-2:30 pm	227 2D-to-3D Conversion Coefficients of VIV Amplitudes of Long-Span Bridges Based on Nonlinear Energy-Trapping Properties Zhitian Zhang; Kai Qie; Zhen Wang
	2:30 pm-2:45 pm	7. Investigation of Aerodynamic and Structural Features Wind Escape Floors in Super-Tall Super-Slender Buildings Yeliz Alevsaçanlar; Nilay Sezer Uzol; Bekir Özer Ay
	2:45 pm-3:00 pm	233 The Influence of L-Shaped Deflectors on the Flutter Performance of Closed-Box Girder Jiawu Li; Jing Wei; Zhengxin Teng; Jianming Hao
	3:00 pm-3:15 pm	143 Nonlinear Time-Domain Buffeting Analysis Driven Aero-Structural Design of Bridges Under Non-Synoptic Winds Miguel Cid Montoya; Santiago Hernández; Sumit Verma
Severe Windstorms Chairs: John Schroeder & Anurag Jain		
Meeting Room 103	1:45 pm-2:00 pm	93 A Continuous Wavelet Transform Based Technique for Extracting Downburst Events from Wind Speed Records Omar Metwally; Mohamed Eissa; Mekdes Mengistu; Federico Canepa; Amal Elawady; Massimiliano Burlando; Maria Repetto
	2:00 pm-2:15 pm	203 Modeling Tropical Cyclone Boundary Layer (TCBL) with Height-Dependent Vertical Diffusivity Liang Hu; Ahsan Kareem

	2:15 pm-2:30 pm	237 Wind Tunnel Measurement of Buoyance-Dominant Flow Behind Heated Single Building Model Kazuyoshi Nishijima; Hideki Kikumoto
	2:30 pm-2:45 pm	196 Performance of Coastal Florida Mid-Rise Residential Buildings During Recent Hurricanes Anurag Jain; Mohammad Morave
	2:45 pm-3:00 pm	109 Statistical Characterization of Thunderstorm-Induced Extreme Wind Duration Using Surface Observations in the U.S. Mahmoud Elnahla; Yanlin Guo; Teng Wu
	3:00 pm-3:15 pm	137 Observed Wind Flow Characteristics in Landfalling Tropical Cyclones Measured by Texas Tech University StickNets Natalie Trout; John Schroeder; Brian Hirth

3:15 pm-3:45 pm	Networking Breeze: Coffee Break *Location: Hallways/Corridors*

Wednesday, 21 May, Late afternoon session, 3:45 pm-5:00 pm

MS: Simulation of Wind Effects on Coastal Communities Chair: Guangzhao Chen & Aly Mousaad Aly		
Junior Ballroom A	3:45 pm-4:00 pm	148 Evaluating Wind Loads on Urban Trees: Full-Scale Drag Coefficient Assessment Fouad Elazaka; Haitham Ibrahim; Amal Elawady
	4:00 pm-4:15 pm	242 Evaluation of Glass Failures from Two Windstorms in San Francisco Mark Schmidt; Andrew Bishop; Roy Denoon; Kaat Ceder; Gwenyth Searer; Kent Sasaki
	4:15 pm-4:30 pm	173 Large-Scale Wind Tunnel Testing of Manufactured Home Communities Yonathan Adamu; Ameyu Tolera; Johnny Estephan; Arindam Chowdhury; Ioannis Zisis; Amal Elawady
	4:30 pm-4:45 pm	185 Two-Phase Large Eddy Simulation of Wind Loading on the Undersides of Elevated Structures in the Presence of Waves Max Beeman; Hanul Hwang; Catherine Gorle
	4:45 pm-5:00 pm	228 Enhancing Structural Resilience: A Breakthrough in Wind Engineering through Open-Jet Testing Aly Mousaad Aly
MS: Wind driven loads on PV modules and Solar collectors Chair: Ulrike Egerer & Ioannis Zisis		
Junior Ballroom B	3:45 pm-4:00 pm	128 Wind Loads on Solar Trackers Using Wind Tunnel and CFD Tsigereda Getachew Eshete; Tsinuel Nurilligne Geleta; Girma Tsegay Bitsuamlak
	4:00 pm-4:15 pm	98 Wind Loads on PV Panels: Impact of Panel Size, Gap, and Roof Mahmoud Abdallah; Ioannis Zisis
	4:15 pm-4:30 pm	124 Spatial Quasi-Steady Approach to Partial Turbulence Corrections on Roof-Mounted Solar PV

		Zachary Taylor; Yan Jiang; Matthew Browne
	4:30 pm-4:45 pm	102 Aerodynamic Mitigation of Single-Axis Solar Trackers Considering Ground Effect Seyed Pejman Fatehi; Yanlin Guo; Teng Wu
	4:45 pm-5:00 pm	225 Wind-Driven Loads on Solar Collectors: Observations from the Nevada Solar One and Crescent Dunes Power Plants Shashank Yellapantula; Ulrike Egerer; Matthew Emes; Brooke Stanislawski; Aliza Abraham; Geng Xia; Scott Dana; David Jager; Andrew Scholbrock
MS: Structural Monitoring & Disaster Warning Chairs: David Prevatt		
Junior Ballroom C	3:45 pm-4:00 pm	14 Distributed Strain Sensing of Solar PV Single-Axis Tracking System Under Dynamic Wind Loads You-Jia (Allen) Li; Hanshu Zhang; Ayush Chutani; Paul Dice; Ana Dyreson; Gerald Robinson; Matthew DeJong
	4:00 pm-4:15 pm	104 Buffeting Force Identification and Response Virtual Sensing of Long-Span Bridge Under Strong Typhoon Wind Sixiang Wen; Genshen Fang; Yaojun Ge; Yong Xia
	4:15 pm-4:30 pm	Built for the Blowdown: How 3D-Printed Probes are Changing Wind Research by Measuring Flow Where It Matters Most Daniel Feldkamp
	4:30 pm-4:45 pm	
	4:45 pm-5:00 pm	
MS: Tornado Damage and Homeowners Insurance Chair: Gwenyth Searer		
Junior Ballroom D	3:45 pm-4:00 pm	54 Parametric Study of Tornado-Borne Debris Akash Yadav; Nigel Kaye
	4:00 pm-4:15 pm	89 Calibration of a Rapid Traversing System for Reproduction of Translating Tornado-Like Flow Effects at the WindEEE Dome Stefano Brusco; Adrian Costache; Timothy J. Acosta; Gregory A. Kopp
	4:15 pm-4:30 pm	101 Forensic Investigation of Hurricane Damage Brian Calderone; Gwenyth Searer
	4:30 pm-4:45 pm	150 An Investigation of Tornado Wind Loading on Irregular Buildings John Kilpatrick
	4:45 pm-5:00 pm	152 Evaluating the Vulnerability of Tilt-Up Structures to Progressive Collapse Under Extreme Wind Events Huy Pham; Monica Arul
Innovative Developments Chair: Tracy Kijewski-Correa & Fred Haan		

Meeting Room 103	3:45 pm-4:00 pm	202 Grouping Effects on the Pressure Distribution of Silos and Tanks Niccolo Pfeiler; Ding Cai， Cong Chen; Julian Unglaub; Klaus Thiele
	4:00 pm-4:15 pm	219 Quantifying the Impact of Building Features to Extreme Winds: A Use Case for Catastrophe Models Tim Johnson; Ameyu B. Tolera; Karthik Ramanathan
	4:15 pm-4:30 pm	171 An AI-Supported Framework for Automated Creation of Building & Infrastructure Asset Inventories Barbaros Cetiner; Sang-ri Yi; Frank McKenna; Tracy Kijewski-Correa
	4:30 pm-4:45 pm	113 Estimating Wind Speeds During Extreme Wind Events from Debris Flight Videos Using Computer Vision Daniel Yahya; David Roueche; Frank Lombardo
	4:45 pm-5:00 pm 5:00 pm-5:15 pm	An Innovative Framework for Modeling Compound Flood Frequency Curves Hossein Haghgou; Dingbao Wang; Grace Yan

6:00 pm-7:00 pm	Cocktail and Whirlwind Networking Reception
	Location: Pre-function Area of Exhibition Hall, First floor of St. Charles Convention Center
	6:00 pm-6:45 pm: Fun Scenario Photo Taking.
	6:45 pm -7:00 pm: Historical “W” Group Photo Taking.
7:00 pm-9:15 pm	Soaring on the Wind: Gala Celebration
	7:00 pm-7:15 pm: Wine & Toast: A Joyful Moment of Thankfulness and Connection
	7:15 pm-8:15 pm: Dinner Over Performance by the Sweetie & Tootchaches Blue Jazz Band St. Louis' Premier Jump Blues Band! Specializing in 1940's – 1960's Jump Blues, R&B and Blues Ballads!
	8:15 pm-9:00 pm: Peter Irwin Lecture Dr. Barry Vickery: The Legacy of a Pioneer in Wind Engineering
	Keynote Speaker: Dr. Peter Vickery, Peter J Vickery Consulting
	Moderator: Dr. John Kilpatrick, RWDI
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
	9:00 pm-9:15 pm Award Ceremony
	Chair: Teng Wu, University at Buffalo
	Location: Exhibition Hall North, First floor of St. Charles Convention Center
9:15 pm-10:15 pm	Celebration Dance Party with the Blue Jazz Band

Thursday, 22 May 2025

7:30 am-8:30 am	Coffee and Tea *Location: Pre-function Area of Exhibition Hall North*
8:30 am-8:35 am	Morning Welcome/Announcements *Location: Exhibition Hall North*
8:35 am-9:20 am	Keynote Speech: Can we reduce losses to residential structures in extreme windstorms? Keynote Speaker: Gregory Kopp, Western University Moderator: Marck Levitan, National Institute of Standards and Technology *Location: Exhibition Hall North, First floor of St. Charles Convention Center*

Thursday, 22 May, Morning session, 9:30 am-10:30 am

Bluff-body aerodynamics Chair: Arindam Gan Chowdhury & Murray Morrison		
Junior Ballroom A	9:30 am-9:45 am	24 Towards Determining Lifetime Duty Cycles of Solar Structural Joints Under Wind Loading Xinlong Du; Tracy Becker; Zachary Taylor; Chris Needham
	9:45 am-10:00 am	63 Aggregate Ballasted Roof Systems Susceptibility to High Wind Velocity Christopher Sanders; Ali Merhi; Murray Morrison
	10:00 am-10:15 am	66 Aerodynamic Effects on Deflected Ballasted PV Arrays Houssam Al Sayegh; Arindam Gan Chowdhury; Ioannis Zisis
	10:15 am-10:30 am	
MS: Measurement and Modeling of Transient Wind Characteristics Chair: Franklin Lombardo		
Junior Ballroom B	9:30 am-9:45 am	108 Examining Conditions for Vehicle Lofting in Tornado-Like Flows A. Berk C. Yildirim; Stefano Brusco; Fred. L. Haan Jr.; Gregory A. Kopp
	9:45 am-10:00 am	115 Tornado-Like Vortex Generation Method Based on Convolutional Autoencoder Network Guangzhao Chen; Faiaz Khaled; Franklin Lombardo
	10:00 am-10:15 am	132 Wind-Only Physical Design Testbed (WOPDT) for the Design of the NICHE— World's Largest Wind-Wave Research Facility Mohamed Eissa; Omar Metwally; Houssam Al Sayegh; Yonathan Adamu; Guangzhao Chen; Amal Elawady; Ioannis Zisis; Arindam Gan Chowdhury
	10:15 am-10:30 am	138 Vertical Profile of Field-Measured Near-Surface Thunderstorm Wind

		Youngchan Lee; Franklin Lombardo
Wind-induced Vibration of Slender Structures Chair: Thomas Mara		
Junior Ballroom C	9:30 am-9:45 am	50 Wind Engineering Considerations for Ameren's New River Crossing Towers Lauren Dixon; Chris Strazar; Thomas Mara
	9:45 am-10:00 am	68 Aerodynamic Parameter Identification for Predicting Wind-Induced Response of a Traffic Signal Structure and Its Validation with Full-Scale Measurements Nayan Deep Tiwari; Partha Sarkar; Alice Alipour
	10:00 am-10:15 am	95 Wind-Induced Dynamic Response of Roof-Mounted Monopoles Mohamed Eissa; Haitham A. Ibrahim; Amal Elawady
	10:15 am-10:30 am	134 Cumulant Equation Method for Vortex-Induced Vibrations Under Turbulent Oncoming Flows Simian Lei; Wei Cui; Vincent DenolLin Zhao; Yaojun Ge
Aerodynamic of Low-rise Buildings Chair: Daniel Rhee & Zhuo Tang		
Junior Ballroom D	9:30 am-9:45 am	13 Interference Effects of Surrounding Buildings on a Multi-Span Light Steel Industrial Building in Tornadoes Jiachen Xin; Gregory Kopp; Jinxin Cao
	9:45 am-10:00 am	131 Effects of Roof Shape, Geometric Aspect Ratio and Turbulence on the Wind Loads of Windward Surfaces of Low-Rise Building Timothy John Acosta; Jin Wang; Gregory Kopp
	10:00 am-10:15 am	114 Effects of Various Opening Configurations on Tornado-Like Loading on a Low-Rise Building Model Qiang Chen Zhuo Tang; Delong Zuo
	10:15 am-10:30 am	187 Reliability Assessment of Wind Loads on Low-Rise Structures Using the NIST Aerodynamic Database Manoj Adhikari; Chris Letchford; Min Li
Environmental wind engineering Chair: Naoki Ikegaya & Kazuyoshi Nishijima		
Meeting Room 103	9:30 am-9:45 am	32 Singular Value Decomposition Analysis for Pedestrian-Level Wind Environment around Simplified Cubical Array Using Large-Eddy Simulation Toshiki Sanemitsu; Naoki Ikegay
	9:45 am-10:00 am	15 Modeling Unimodal and Bimodal Wind Speed Probability Distributions around a Building Using Mixture Weibull Distribution with Methods of Moments and L-Moments Wei Wang; Naoki Ikegaya
	10:00 am-10:15 am	16 Statistical Analysis of Turbulent Characteristic in Thermally Stratified Boundary Layers Using Large-Eddy Simulation Yezhan Li; Naoki Ikegaya
	10:15 am-10:30 am	

10:30 am-11:00 am	Brewing Connections over Coffee *Location: Hallways/Corridors*

Thursday, 22 May, Late Morning session, 11:00 am-12:00 pm

Panel Discussion: Advances in Shared Research Infrastructure for Windstorm Hazards Chair: Tracy Kijewski-Correa		
Junior Ballroom A	11:00 am-12:00 pm	Chair and Panelists: ➢ Tracy Kijewski-Correa ➢ Arindam Gan Chowdhury ➢ Kurtis Gurley ➢ Partha Sarkar ➢ Ioannis Zisis
MS: Measurement and Modeling of Transient Wind Characteristics Chairs: Franklin Lombardo & Daniel M. Rhee		
Junior Ballroom B	11:00 am-11:15 am	199 Estimating Near-Surface Tornado Wind Speeds Using Cycloidal Debris Swaths David T. Roegner; Franklin T. Lombardo; Daniel M. Rhee
	11:15 am-11:30 am	206 Wind Speed Estimation of the Mound City, South Dakota EF2 Tornado Wesam Mohamed; Franklin Lombardo; Sung Min Moon， Michael Pagnanelli; David Roegner
	11:30 am-11:45 am	210 Can We Simulate Transient Winds in Straight-Line Wind Simulators? Faiaz Khaled; Franklin T. Lombardo
	11:45 am-12:00 pm	221 Sampling Rate Biases In Design Wind Speeds of Thunderstorm Climates Valerie Sifton; David Banks; Maximillian Magness
Wind-induced Vibration of Slender Structures Chairs: Jiawu Li & Jiamin Dang		
Junior Ballroom C	11:00 am-11:15 am	123 Partial Turbulence and Aeroelastic Model Approach to Calibrate Buffeting Response Analysis for Long-Span Bridges Zachary Taylor; Pierre-Olivier Dallaire
	11:15 am-11:30 am	191 Data-Driven Analysis of Significant Nonlinear Flow Features around Circular Cylinders Xisheng Lin; Yixiang Wang; Cruz Y. Li; Tim K.T. Tse
	11:30 am-11:45 am	238 Determination of VIV Griffin Plot from Transient Displacement Envelope Guangzhong Gao; Wenkai Du; Lu Yu; Yonghui Xie; Ledong Zhu; Jiawu Li
	11:45 am-12:00 pm	41 Evaluating Performance Loss of Long-Span Suspension Bridges Considering Uncertain Turbulence Using Importance Sampling Monte Carlo Simulations Zubair Zahoor Banday; Aksel Fenerci; Ole Andreòiseth
Aerodynamics of Low-rise Buildings		

Chair: Mark Sterling		
Junior Ballroom D	11:00 am-11:15 am	29 Effects of Nature-Inspired Parapet on Roof Suction over a Low-rise Building Model Erick Shelley; Wei Zhang
	11:15 am-11:30 am	144 Wind Pressures on Walls of Nonrectangular Buildings Murad Aldoum; Ted Stathopoulos
	11:30 am-11:45 am	151 Modelling Vertical Angle Effects of Wind as a Variation of Building Roof Slope Jihan Pacer; Gregory Kopp
	11:45 am-12:00 pm	58 A Novel Method for Evaluating Wind Pressures on Irregular Building Shapes Jessica Van Den Heuvel; Gregory Kopp
Performance-based Wind Engineering Chair: Alice Alipour & Jin Wang		
Meeting Room 103	11:00 am-11:15 am	46 Performance-Based Wind Design of Tall Buildings Using Database-Assisted Design wind loads Bahareh Dokhaei; Behrouz Shafei; Alice Alipour
	11:15 am-11:30 am	188 Prediction of Structural Wind Effects Using a Monte Carlo Direct Technique Thomas Mara; Adam van Duijneveldt; Valerie Sifton; Jon Galsworthy
	11:30 am-11:45 am	197 Implementation of Performance-Based Wind Design for Tall Concrete Buildings - Case Study Jeff Dragovich; Stephen DeSimone; Saman Abdullah; Kurt Strobel; Don Scott; Smrithi Hareendran
	11:45 am-12:00 pm	208 Roof Slope Effects on Reliability of Low-Rise Building Roofs Jin Wang; Dong Duo

12:00 pm-1:00 pm	Lunch over Melody of the Winds-Discovering Nature through Music *Location: Exhibition Hall North*

Thursday, 22 May, Afternoon session, 1:00 pm-2:30 pm

MS: Downburst Effects on Structures Chairs: Ioannis Zisis & Mark Sterling		
Junior Ballroom A	1:00 pm-1:15 pm	22 The Calculation of Train Stability in Downburst Winds Aleksander Pistol; Mark Sterling; Chris Baker
	1:15 pm-1:30 pm	88 Analytical Models of Downburst Wind Speed Time Series from Observed Damage Djordje Romanic
	1:30 pm-1:45 pm	92 Wind-Induced Aerodynamic Loads on Tall Buildings: A Comparison Between ABL and Downburst Omar Metwally; Haitham Ibrahim; Amal Elawady
	1:45 pm-2:00 pm	160 Experimental Investigation of Scaling Dependency for Downburst-Induced Pressure on Low-Rise Buildings Fahim Ahmed; Amal Elawady
	2:00 pm-2:15 pm	154 Aeroelastic Testing of Partially Damaged Transmission Tower Subjected to Downburst-Like Outflows

		Mohamed Eissa; Amal Elawady
	2:15 pm-2:30 pm	
Aerodynamics of High-rise Buildings Chairs: Brian Phillips & Girma Bitsuamlak		
Junior Ballroom B	1:00 pm-1:15 pm	145 Optimal Sensor Placement for Wind Pressure Reconstruction Under Constraints Seyedeh Fatemeh Mirfakhar; Nouzha Lamdouar; Reda Snaiki
	1:15 pm-1:30 pm	147 Combinatorial Aerodynamic Shape Optimization for Tall Buildings Using Wind Tunnel Testing Wei-Ting Lu; Brian Phillips; Zhaoshuo Jiang
	1:30 pm-1:45 pm	161 A Review of Parameters Affecting Tall Building Accelerations Jason Garber; Ronwaldo Aquino
	1:45 pm-2:00 pm	207 Generation of Wind Load Time History for Performance-Based Wind Design of Tall Buildings Un Yong Jeong; Liam Dupelle; Stephanie Hartlin
	2:00 pm-2:15 pm	223 Examining Correlations and the Case for Corner Load Combinations Sarah Stenabaugh; Kenny Lee-Slew; Travis Engle;Thomas G. Mara
	2:15 pm-2:30 pm	11 Validation of Rooftop Wind Measurements in the Urban Environment Sean McTavish; Hali Barber; Alanna Wall

More Information on St. Louis

City Location and Background

St. Louis, Missouri is a historically significant city located in the heart of the American Midwest, at the confluence of the Mississippi and Missouri Rivers—an important hub for water and land transportation in North America. Due to its unique geographic location, St. Louis became a key gateway for the United States' westward expansion in the 19th century, earning it the title "**Gateway to the West**."

During the 19th century, St. Louis rapidly prospered as a commercial and industrial center, especially in river shipping, brewing, and manufacturing. By the early 20th century, it had become the fourth-largest city in the United States and served as the host of both the 1904 World's Fair and the 1904 Summer Olympics—the first Olympic Games ever held in the United States.

Discover St. Louis

- The Gateway Arch is the iconic landmark of St. Louis, located in the city center, The tallest arch in the world (192 meters), symbolizing the "Gateway to the West." Visitors can take a tram to the top for panoramic views of the Mississippi River.
- The St. Louis Art Museum was built in 1904, originally for the World's Fair held that year. The museum houses a variety of artworks, including paintings and sculptures, and is open to the public for free.
- The Missouri Botanical Garden, established in 1859, is one of the oldest in the U.S. and a National Historic Landmark.
- The St. Louis Cathedral, completed in 1914, is a Roman Catholic church with intricate glass mosaics and a dome depicting biblical scenes.
- St. Louis is deeply influenced by Catholicism, and the city is home to many historic Catholic churches, with the St. Louis Cathedral being the most famous.
- The 1904 Summer Olympics, the third Olympic Games, were held in St. Louis from July 1 to November 23, marking the first time the Olympics were hosted in the United States.
- The St. Louis Cardinals are one of the city's traditional sports teams, and the team is beloved by baseball fans.

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