### 2023 NIST-NSF Disaster Resilience Research Symposium

**Agenda**

**Dates:** August 23 - 24, 2023

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<td><strong>Welcome from the Symposium Co-Chairs</strong></td>
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<td>N. Bouvet / D. Yeo (NIST)</td>
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<td><strong>Opening Remarks by NIST Associate Director for Laboratory Programs</strong></td>
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| **Keynote #1:**


- **Speaker:**
  - David Alexander (DHS)

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| **Track 1: Windstorm**

Session 1

- Measurement of Near-Surface Pressure, Wind and Wind-Induced Load Characteristics Using Novel Sensors in Thunderstorm, Tornado and Tornado-Like Environments
  - Franklin Lombardo

Session 2

- Wireless Sensor Network (WSN) System and LIDAR Experiments for the Characterization of Strong Wind Loads on Non-Structural Components and Near-Surface Wind Profiles
  - Chalakura Subramanian, Steve Lazarus

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| **Track 1: Windstorm**

Session 3

- Analysis, Comparison and Experiment Investigation of Hurricane Wind, Storm-Surge and Wave Load Model
  - Landolf Rhode-Barbarigos

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| **Track 2: Infrastructure and Community Resilience**

Session 1

- Disaster Recovery and Response Innovation through Fuel Cell Deployment
  - Arnav Gautam

Session 2

- Leveraging Uncertain Disaster Field Data for Community-Scale Assessment of Connected Buildings and Lifelines
  - Iris Tien

Session 3

- Assessing the Utility of Safe-to-Fail Design to Improve Climate Hazards Resilience of Interdependent Infrastructure Systems
  - Giuseppe Mascaro

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| **Track 1: Windstorm**

Session 4

- Spatiotemporal Maps of Damaging Winds from Integrated Remote and In-Situ Observations
  - Michael Biggerstaff

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| **Track 2: Infrastructure and Community Resilience**

Session 4

- Characterization of Hurricane Boundary Layer Turbulence for Wind Hazard Mitigation
  - Marco Giometto

Session 5

- 4-D Measurement and Modeling of Engineering-Relevant Windstorm Characteristics
  - John Schroeder

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| **End of Day 1**

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**Concurrent Sessions**

**Track 1: Windstorm**

**Session 1**

- Measurement of Near-Surface Pressure, Wind and Wind-Induced Load Characteristics Using Novel Sensors in Thunderstorm, Tornado and Tornado-Like Environments
  - Franklin Lombardo

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**Track 2: Infrastructure and Community Resilience**

**Session 1**

- Disaster Recovery and Response Innovation through Fuel Cell Deployment
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**Session 2**

- Leveraging Uncertain Disaster Field Data for Community-Scale Assessment of Connected Buildings and Lifelines
  - Iris Tien

**Session 3**

- Assessing the Utility of Safe-to-Fail Design to Improve Climate Hazards Resilience of Interdependent Infrastructure Systems
  - Giuseppe Mascaro

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**Day 2: August 24, 2023**

**Welcome**

**Opening Remarks**

**Keynote #2**


- **Speaker:**
  - David Alexander (DHS)

**Concurrent Sessions**

**Track 1: Windstorm**

**Session 2**

- Enhancing Windstorm Resilience of Coastal Communities Through Ultra-High Performance Glass Fiber Reinforced Polymer Concrete Seawalls
  - Pranav Suraneni

**Session 3**

- Collaborative Research: Assessment of Building Resilience in Tornadoes Considering Transient Internal Pressure Effects
  - Delong Zuo

**Track 2: Infrastructure and Community Resilience**

**Session 2**

- Collaborative Research: Examining the Vulnerability and Recovery of Small Farms to Natural Hazards and the Impact to Rural Community Resilience
  - Christine Wetich

**Session 3**

- Assessing Urban Post-Earthquake Community Recovery to Inform Pre-Disaster Planning
  - Jack Baker, Omar Issa

**Special Discussion Session**

Featuring Ms. Toni-Shae Freckleton, Chief of the New York Liaison Office of the UN Office for Disaster Risk Reduction (UNDRR): “Bridging the Science-Policy Divide: From Resilience Thinking to Resilient Practices”

- **Moderator:** Sezin Tokar (USAID)

**End of Day 2**

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**Day 3: August 25, 2023**

**Welcome**

**Opening Remarks**

**Keynote #3**


- **Speaker:**
  - David Alexander (DHS)

**Concurrent Sessions**

**Track 1: Windstorm**

**Session 3**

- Collaborative Research: Understanding Urban Resilience to Peculiar Floods Using Reduced-Order Modeling
  - Daniel Wright

**Session 4**

- Leveraging Crowdsourced Data to Assess Spatiotemporal Patterns of Resilience in Diverse Gulf Coast Communities Impacted by Natural Hazards
  - Michelle Hummel

**Track 2: Infrastructure and Community Resilience**

**Session 3**

- Characterization of Hurricane Boundary Layer Turbulence for Wind Hazard Mitigation
  - Marco Giometto

**Session 4**

- 4-D Measurement and Modeling of Engineering-Relevant Windstorm Characteristics
  - John Schroeder

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**Day 4: August 26, 2023**

**Welcome**

**Opening Remarks**

**Keynote #4**


- **Speaker:**
  - David Alexander (DHS)

**Concurrent Sessions**

**Track 1: Windstorm**

**Session 4**

- Spatiotemporal Maps of Damaging Winds from Integrated Remote and In-Site Observations
  - Michael Biggerstaff

**Session 5**

- Characterization of Four-Dimensional Near-Surface Wind Characteristics from Debris and Damage Attributes using Computer Vision
  - David Roueche

**Track 2: Infrastructure and Community Resilience**

**Session 4**

- Collaborative Research: Understanding Urban Resilience to Peculiar Floods Using Reduced-Order Modeling
  - Daniel Wright

**Session 5**

- Leveraging Crowdsourced Data to Assess Spatiotemporal Patterns of Resilience in Diverse Gulf Coast Communities Impacted by Natural Hazards
  - Michelle Hummel

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**Day 5: August 27, 2023**

**Welcome**

**Closing Remarks**

**Keynote #5**


- **Speaker:**
  - David Alexander (DHS)

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**End of Symposium**
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**Track 1: Earthquake**

**Session 1**
- 11:30: Collaborative Research: Development of Realistic Seismic Input Motions for Improving the Resilience of Infrastructure to Earthquakes
  - Speaker: Chanseok Jeong, Boris Jeremic

**Session 2**
- 1:45: Developing a Selective Column Retrofit Framework for Damaged and Aging Reinforced Concrete Buildings to Improve Community Resilience after Earthquakes
  - Speaker: Sergio Brena, Omid Monshi Toussi

**Session 3**
- 3:00: Seismic Assessment and Retrofit Methods for Existing Non-Ductile Reinforced Concrete Wall Structures
  - Speaker: Ioannis Koutromanos

**Track 2: Infrastructure and Community Resilience**

**Session 1**
- 10:15: Collaborative Research: Quantifying the Risk & Impact of Wind and Hail Storms in a Warming Climate
  - Speaker: John Allen

**Session 2**
- 12:00: Residual Axial & Lateral Load Carrying Capacity of Pile Supported Marine Terminal Exhibiting Seismically-Induced Local Buckling in Inground Plastic
  - Speaker: Jose Restrepo

**Session 3**
- 13:00: Resilience of Steel Moment Frame Systems with Deep, Slender Column Sections
  - Speaker: Jason McCormick

**Track 2: Fire**

**Session 2**
- 12:15: Collaborative Research: Wildland Urban Interface & the Built Environment Design, Evacuation & Retreat Under No-Notice Fire Hazards
  - Speaker: Daniel Orlando Rivera Royero, Dwi Marhaendro Jati Purnomo, Behnam Tahmasbi

**Session 3**
  - Speaker: Abbie Liel, Maria Kolous

**Session 4**
- 15:30: Seismic Rehabilitation of Existing Unreinforced Masonry Buildings
  - Speaker: Andreas Stavridis

**Special Panel Discussion Session on Disaster Data Sharing**
- Moderator: Judith Mitrani-Reiser (NIST)
  - Panelists: Garrett Layne (NASA), Ellen Rathje (UTA), Adam Smith (NOAA), Gerard Lemson (Johns Hopkins Univ./NIST) and Matthew Hoehler (NIST)

**End of Day 2: Closing Remarks from Symposium Co-Chairs**
- Speaker: N. Bouvet / D. Yeo (NIST)