Thursday, May 9, 2019
8:00 am – 5:00 pm

8:30 – 9:00 am
Breakfast

9:00-9:05
Welcome by John W. van de Lindt
9:05-9:10
Committee on Technical Advancement (Bilal Ayyub)

9:10 – 10:30 am
Keynote Presentations

Chair: John W. van de Lindt, Harold H. Short Endowed Chair, Colorado State Univ.

Joplin's Journey to Recovery – Citizens, Decisions, and Challenges
Jane Cage, InsightFive22 and Joplin Citizens Advisory Recovery Team

Sustainability and Resilience: What are the Opportunities and Challenges?
Exploration from Pittsburgh and Beyond
Melissa Bilec, Associate Professor and Associate Director, Mascaro Center for Sustainable Innovation, University of Pittsburgh

10:30 – 10:45 am
Refreshment Break
10:45 am – 12:15 pm
Federal Research and Opportunities - Plenary Session

The Community Resilience Program at NIST: Advancing Resilience Measurement Science
*Therese P. McAllister, Program Leader, Community Resilience Program, Engineering Laboratory, National Institute of Standards and Technology*

Cybersecurity and Infrastructure Security Agency Capabilities for Critical Infrastructure Resilience Planning and Assessment
*Stephen Cauffman, Section Chief, Infrastructure Development and Recovery, U.S. Department of Homeland Security*

USGS Central and Eastern U.S. Earthquake Research and Mitigation Efforts
*Thomas L. Pratt, Research Geophysicist, Central & Eastern U.S. Coordinator, USGS Earthquake Hazards Program*

NSF Engineering Research Programs for Resilience
*Joy Pauschke, Program Director, Division of Civil, Mechanical & Manufacturing Innovation, National Science Foundation*

12:15 – 1:30 pm
*Please get your lunch and be seated for a lunch presentation at 12:35*

Summary of the Manual of Practice on Climate Resilient Infrastructure
*Bilal Ayyub, Professor, University of Maryland; MoP Editor*

Lunch (room setup for concurrent sessions 1:30 – 1:45)

1:45 – 3:15 pm
Break Out Sessions (2)

Session 1: Resilient and Sustainable Buildings

Chairs: *Melissa Bilec, Associate Professor and Associate Director, Mascaro Center for Sustainable Innovation, University of Pittsburgh*
*Gordon Warn, Associate Professor, Civil and Environmental Engineering, Pennsylvania State University*

Early design decision support using reliability theory for multi hazard resilient & sustainable buildings
*Madeleine Flint, Assistant Professor, The Charles E. Via, Jr. Department of Civil & Environmental Engineering, Virginia Polytechnic University*

A Decision and Design Framework for Buildings to Achieve Multi-Hazard Resilience and Sustainability
*Mehrdad Sesani, Professor, Civil and Environmental Engineering, Northeastern University*
A sequential decision process to efficiently evaluate a large set of building designs characterized by probabilistic criteria
Gordon Warn, Associate Professor, Civil and Environmental Engineering, Pennsylvania State University

A Design Procedure that Accounts for Multiple Community Resilience Objectives
Hassan Masoomi, Post-Doctoral Scholar, Civil and Environmental Engineering, UCLA
John van de Lindt, Harold H. Short Endowed Chair Professor, Civil and Environmental Engineering, Colorado State University

Session 2: Emerging Technologies in Infrastructure

Chairs: Mahmoud Taha and Kenichi Soga

Next Generation 3D printed Composites for Resilient Infrastructure
Mahmoud Reda Taha, Chair, Distinguished Professor and Regents Lecturer
Department of Civil, Construction and Environmental Engineering, University of New Mexico

Shape Memory Alloys for Resilient Smart Infrastructure
Osman Ozbulut, Associate Professor, Engineering Systems and Environment, University of Virginia

Hybridized Infrastructures: A Review of next-generation, multi-purpose and multi-functional infrastructural designs
Chris Ford, Ph.D. Candidate, Stanford University

High-throughput imaging and artificial intelligence for civil infrastructure health and damage assessment
ZhiQiang Chen, Associate Professor, Civil and Mechanical Engineering, University of Missouri-Kansas City

Human-Technology Reliability for Civil Infrastructure Security
Pingbo Tang, Associate Professor, School of Sustainable Engineering and the Built Environment, Arizona State University

3:15 – 3:30 pm
Refreshment Break

3:30 – 5:00 pm (3)
Break Out Sessions

Session 1: Disaster Resilience Study Lessons and Impacts
Session Chairs: Allison Pyrch and Kent Yu

Lessons Learned from the 2017 Mexico Earthquake
Allison Pyrch, Salus Resilience, Hart Crowser Inc.
Craig Davis, CILSC Chairperson, Formerly Water System Resilience Program Manager and the Seismic Manager for the Los Angeles Department of Water and Power, Water System.
Disrupted Access to Critical Facilities and Its Societal Impacts in Urban Flooding
Shangjia Dong and Amir Esmalian, Graduate Students, Zachry Department of Civil Engineering, Texas A&M University

Assessing Impacts to Critical Community Functions after Disasters
Judith Mitran-Reiser, Director, Disaster & Failure Studies Program, National Institute of Standards and Technology

Emergent Technical Teams: Mechanics and Social Dynamics of Volunteer Disaster Response
Janielle Smith-Colin, Assistant Professor, Civil and Environmental Engineering, Southern Methodist University

Session 2: Characterizing and Evaluating Infrastructure Systems for Improving Resilience
Session Chairs: Haizhong Wang and Craig Davis

Assessment and Modeling of Water Infrastructure Resilience
Shangjia Dong, Post-Doctoral Research Associate, Zachry Department of Civil Engineering, Texas A&M University

Investigating Power Grid Reliability Through an Analysis of Post-Earthquake Experience Data
Riccardo Cappa, SIMPSON GUMPERTZ & HEGER

Post-disaster Transportation Network Mobility and Connectivity to Critical Facilities using City of Portland, Oregon as a Case Study
Haizhong Wang, Associate Professor, School of Civil and Construction Engineering, Oregon State University

Creating a Water System Resilience Program Using Characteristics of Resilient Lifeline Systems
Craig Davis, CILSC Chairperson, Formerly Water System Resilience Program Manager and the Seismic Manager for the Los Angeles Department of Water and Power, Water System.

Session 3 – Measuring and Predicting Resilience
Chairs: Henry Burton and Brian Phillips

Resilience-Based Performance: Next Generation Guidelines for Buildings and Lifeline Standards
Madeleine Flint, Assistant Professor, The Charles E. Via, Jr. Department of Civil & Environmental Engineering, Virginia Polytechnic University

Multi-Modal Machine Learning Models for Predicting Earthquake-Induced Building Damage
Sujith Mangalathu, Post-Doctoral Scholar, Civil and Environmental Engineering, UCLA
Henry Burton, Assistant Professor, Civil and Environmental Engineering, UCLA

Blockchain and Cyber Resilience of Critical Infrastructure
Longitudinal Study of Community Tornado Resilience
Frank Lombardo, Assistant Professor, Civil and Environmental Engineering, University Illinois Urbana-Champaign
Brian Phillips, Associate Professor and Keystone Professor, Civil and Environmental Engineering, University of Maryland

5:00 pm
Adjourn
Dinner on your own (Reston Town Center nearby)

Friday, May 10, 2019
9:00 am – 3:00 pm

8:30 – 9:00 am
Breakfast

9:00 – 10:30 am
Plenary Session (Enabling Resilience)
Chair: John W. van de Lindt

Disaster Recovery Reform Act: Building Resilient Infrastructure and Communities
Eric Letvin, Deputy Associate Administrator, Mitigation Directorate, Federal Insurance & Mitigation Administration (FIMA)

Developing approaches and standards for urban resilience: Case Study – Beirut, Lebanon
Caroline Field, Thornton Tomasetti, Head of Resilience Europe

10:30 – 10:45 am
Refreshment Break

10:45 am – 12:15 pm
Break Out Sessions (3)

Session 1: Incorporating Socio-Economics in Physical Infrastructure Design and Decision-Making

Linking Housing, Business, School, and Lifeline Systems Recovery
Maria Dillard, Research Sociologist, Community Resilience Group, National Institute of Standards and Technology

Quantifying post-disaster business recovery through Bayesian methods
Maria Koliou, Assistant Professor, Zachry Department of Civil Engineering, Texas A&M University
Measuring Adaptive Capacity of UK Airports
Caroline Field, Thornton Tomasetti, Resilience Practice Leader

Assessing and Modeling of the Societal Impacts of Infrastructure Disruptions in Disasters
Amir Esmalian, Ph.D. Student, Zachary Department of Civil Engineering, Texas A&M University

Session 2: Computational Methods for Community-Scale Resilience
Chair: Nasim Uddin

Embedding Regional Hurricane Risk Management in the Life of a Community: A Computational Framework
Jamie Kruse, THCAS Distinguished Professor of Economics and Director, Center for Natural Hazards Research, East Carolina University

Transforming Smart Cities with Spatial Computing
Shashi Shekhar, Professor, University of Minnesota

Road Map to a Model City
Nasim Uddin, Professor, University of Alabama at Birmingham

Optimal Stochastic Scheduling to Address Food Security of Communities Following Hazards
Saeed Nozhati, Ph.D. Candidate, Civil and Environmental Engineering, Colorado State University
Bruce Ellingwood, Walter Scott Jr College of Engineering Eminent Scholar, Civil and Environmental Engineering, Colorado State University

Probabilistic decision-support tool for community resilience: Incorporating multi-hazards, infrastructure interdependencies, and target objectives in a Bayesian network
Dan Cox, CH2M-Hill Professor in Civil Engineering and Director, Cascadia Lifelines Program, Oregon State University

Session 3: Wildfire! Decision Making in Complex, Dynamic Events
Chair: Louise Comfort

Sensing opportunities for wildfire events
Kenichi Soga, Chancellor’s Professor at the University of California, Civil and Environmental Engineering, University of California Berkeley

Cognition to Action: Using Knowledge, Technologies, and Experience to Support Collective Action in the 2018 Camp Fire
Louise Comfort, Professor of Public and International Affairs and Director, Center for Disaster Management, University of Pittsburgh.

Field Observations and Simulations Strategies for Quantifying Community Risk to Wildland Urban Interface Fires
Hussam Mahmoud, George T. Abell Associate Professor in Infrastructure, Civil and Environmental Engineering, Colorado State University
Akshat Chulahwat, Ph.D. Student, Colorado State University
Erica Fischer, Stephanie Schulze, Sara Hamideh, Kevin Mueller, Devon Lumbard, Michael Grilliot, Sean Yeung

Governing Firesheds: Resilient Systems Design for the New Era of Wildfire
Branda Nowell, Professor, School of Public and International Affairs, North Carolina State University

12:30 – 1:30 pm
(Allow for room set between 12:15 – 12:30 change)

Lunch

1:30 – 3:00 pm
Closing Panel Discussion: Resilience to Recurring Disasters
Moderator: TBD

Panelists:
Louise Comfort, University of Pittsburgh
Sara Hamideh, Iowa State University
Eric Letvin, FEMA
Judith Mitrani-Reiser, NIST (Not confirmed)
Kenichi Soga, University of California Berkeley

3:00 pm
Adjourn