

ASCE INSPIRE

2023
CONFERENCE

INFRASTRUCTURE INNOVATION & ADAPTATION FOR A SUSTAINABLE & RESILIENT WORLD
ARLINGTON, VIRGINIA | NOV. 16-18, 2023

Draft Technical Program as of June 14, 2023



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Dear colleagues, friends, and soon-to-be-friends:

The past three years have taught us individually and as a community that we can find our path through uncertainty and emerge on the other side even stronger. Our theme for ASCE INSPIRE 2023 is *Infrastructure Innovation & Adaptation for a Sustainable & Resilient World*.

The art of adaptivity for an uncertain future is the essence of INSPIRE. As Greek and Chinese philosophers said: we have to be like water in nature, flexible with a purpose and resilient, and to adapt to face any obstacles in our way. As the pace of change increases, the future also becomes more difficult to predict with the potential for turbulence, disruptions, deep uncertainty, and complexity. We may be able to project some developments and long-term states with some confidence, however what's to come can be highly variable and unpredictable.

ASCE INSPIRE 2023 is designed to bring together planners, engineers, researchers, technologists, infrastructure owners and operators, government agencies, financial entities, and other stakeholders to create conversations and educational opportunities to risks. These risks may include changes in the earth's temperature, increasing frequency of natural hazards, energy/water challenges, and the impact of sea level rise. ASCE INSPIRE 2023 will focus on innovative ideas for equitable, smart, hazard-resilient, people-centric infrastructure.

I am honored to be the ASCE INSPIRE 2023 Chair and to work closely with distinguished colleagues and leaders, and excited that I get to participate in shaping this event. If you also want to be part of it, please do not hesitate to reach out to me or the organizers. Whether a veteran or a new member, we need your input and collaboration. We have something special here with ASCE INSPIRE 2023—we can all feel it. So, let's define the future of our conference together and help set the course for our future world!

See you in the Washington metropolitan area in Crystal City, Virginia, November 16-18, 2023.

A handwritten signature in black ink that reads "Bilal M. Ayyub". The signature is stylized and fluid.

Bilal M. Ayyub, Ph.D., P.E., F.SEI, Dist.M.ASCE
ASCE INSPIRE 2023 Chair

Thursday, November 16

Track 1 Session 1

8:30 - 10:00 a.m.

Ecologically Engineered Solutions for Resilient Port Infrastructure, Rachel Krasna

How Maritime Construction Can Prepare Buildings for Climate Change, Wendy Fisher

Incorporating Sea Level Rise in Coastal Infrastructure Design, Scott Douglass

Miami-Dade County PROS, Matheson Hammock Park Seawall Project, Melissa Burns

Resilient Stormwater Pump Stations and Tide Protection Systems in Virginia Beach, Glenn Bottomley

Designing Salt Marsh Landscapes for Flood Protection, Matthew Bilsie

Track 2 Session 1

8:30 - 10:00 a.m.

Resilience assessment of interdependent transportation and power distribution systems subjected to ice storms, Sherief Elsibaie

Performance evaluation of strategic infrastructure via surrogate models, Yan Shi

Network Resilience-based Design under Imprecise Probability with Machine Learning Techniques, Ao Du

Weighted Rail Network Topological Analysis: Efficiency and Eccentricity, Guangyang Hou

Impact of Earthquake Events on Regional 5G Telecommunication Infrastructure, Astha Poudel

Systemic Seismic Risk Assessment of Urban Emergency Response Systems, Juan Manuel Mayoral Villa

Track 3 Session 1

8:30 - 10:00 a.m.

Functional Recovery: A Catalyst for Community Resilience, Dustin Cook

Resilient Nonstructural Systems for Fully Resilient Buildings, Keri Ryan

Track 4 Session 1**8:30 - 10:00 a.m.**

Best Practices for Measuring & Reporting Sustainability, Resiliency, and Equity Outcomes of Bilateral Infrastructure Law and Inflation Reduction Act Infrastructure Investments, Lisa Woods

Working with Federal agencies to Advance Climate Resilience through Natural Infrastructure: What the Practitioner Needs to Know, Dan Walker

Track 5 Session 1**8:30 - 10:00 a.m.**

Compound Flooding in a Non-stationary World: A primer for practice, Gerarda Shields

A network lens on the resilience of installations to climate and compound extremes, Auroop Ganguly

Track 6 Session 1**8:30 - 10:00 a.m.**

State-funded programs can reduce socioeconomic disparities in seismic risk mitigation efforts, Henry Burton

The Importance of using the Envision framework during the early planning phase to successfully develop and implement a Sustainability Management Plan, Nikole Meade

Lessons from the First Envision Verified Project in the Houston Region, Michael Bloom

Arlington County's Flood Risk Assessment Management Plan – Integrating Climate Resilience into Infrastructure Planning, Laurens van der Tak

Effectiveness risk mitigation actions on reductions in business interruption and long-term recovery: Lumberton, NC case study, Jennifer Helgeson

A Framework to Engineer Infrastructure Resilience Through Assessment, Management and Governance, Craig Davis

Track 7 – Stand-up session in the Hall of Inspiration (details below)**9:00 a.m. - 12:00 p.m.**

Track 1 Session 2**10:15 - 11:45 a.m.**

Life cycle considerations for Swan Island, Chesapeake Bay, Maryland, Emily Russ

Trails as Resilient Infrastructure, Emily Lauderdale

Assessing nature-based coastal flood risk management measures in back bay environments, Candice Piercy

A Resilient Texas Coastline – Aligning Our Natural and Built Infrastructure for the Future, Chris Levitz

A Web Application for Assessing Ecological Functions of Riparian Zones, Samantha Wiest

St. Johns County, FL Hurricanes Matthew and Irma Fema Emergency Berm Restoration Project, Tom Gillespie

Washington State Ferries Sea-level Rise Vulnerability, Abigail Gertz

Track 2 Session 2

10:15 - 11:45 a.m.

A Socio-Physical Comprehensive Post-Hazard Functionality Model for Buildings, Omar Nofal

Digital Twin Applications for Resilient and sustainable Rail Infrastructure Management, Nosayaba Evbuomwan

Validation of Indicators for Community Resilience Assessment Methodology, Donghwan Gu

Title: Flood Risk and Recovery Modeling for Improving Climate Resilience of the City of Dijon, France, Nisrine Makhoul

Coupled agent-based and hazard consequence model for evaluating policies to increase community resilience, Dylan Sanderson

Resilience capacity of civil structures and infrastructure systems, Cao Wang

Track 3 Session 2

10:15 - 11:45 a.m.

Applying functional recovery approaches for climate resilient infrastructure, Rebecca Laberenne

Innovations for Improving the Functional Recovery of Buildings after Severe Earthquakes, Paul Richards

Weighted Freight Rail Network Topological Analysis by Hazardous Commodity Volumes and Population at Risk, Yujie Mao

How a medium-sized wastewater utility aims to be the 'Greenest Plant', Emily Corwin

Track 4 Session 2

10:15 - 11:45 a.m.

Simulation and Optimization of resources needed for high rise structures as an example for linear infrastructures' projects, Mohamed Sherif

Ranking the challenges for implementing circular economy into the construction industry: Perception of the U.S. AEC industry practitioners, Fatemeh Pariafsai

Multi-Phase and Multi-Objective Optimization of Embodied and Operational Energy and Carbon Emission of Buildings, Maryam Abbasi Kamazani

Building back greener: Residential building decarbonization opportunities following floods and other disasters, Linda Waters

The Many Faces of Embodied Carbon – The Changing Role of Embodied Carbon Calculations Through the Design Stages of Bridge Projects, Dan Bergsagel

Novel Approaches to Decarbonization in the Built Environment, Emily Kunkel

Track 5 Session 2

10:15 - 11:45 a.m.

Determination of Climatic Design Loads in a Nonstationary Future Climate, Sihan Li

Possible Inclusion of Climate Impacts for Non-Hurricane Wind Speeds in ASCE 7, Frank Lombardo

Climate Change Scenario Trajectories, Temperature Outcomes, Emission Targets... What Should Engineers Design For? Michele Barbato

Addressing Extreme Weather Events in Building Codes: Global Building Resilience Guidelines, Joseph Sollod

Opportunities and Challenges for Deriving Design Loads For Infrastructure Planning Based on Downscaled Climate Models, Marie Buhl

Track 6 Session 2

10:15 - 11:45 a.m.

Thought Leadership: The Human in the Engineer, Justin Waples

Resilience of School Systems Subjected to Mainshock-Aftershock Earthquake Event, Emad Hassan

Sustainability in the Architectural Engineering Industry: Lessons Learned from the AEI Build Sustain Community, Kristen Parrish

Resilient Design in Undergraduate Education: Current Practice in US Universities and Recommendations for Improvement, Kyle Kershaw

Track 7 – Stand-up session in the Hall of Inspiration (details below)

9:00 a.m. -12:00 p.m.

Luncheon & Keynote Speaker 12:00 - 1:30 p.m.

Track 1 Session 3**1:45 - 2:45 p.m.**

Appraisal of the Climate Resilience Dividend: A Catalyst for Supporting Investments in Infrastructure, Rallis Kourkoulis

Track 2 Session 3**1:45 - 2:45 p.m.**

Designing Infrastructure for Resilience, Terri McAllister

Design of Conventional Buildings for Tornadoes: New Requirements in ASCE 7-22 and the 2024 IBC, Marc Levitan

Track 3 Session 3**1:45 - 2:45 p.m.**

Integrating BIM and GIS for Disaster Management in Smart Cities: Key Benefits and Challenges, Chengyi Zhang

Track 4 Session 3**1:45 - 2:45 p.m.**

Future World Vision's Innovative Approach to Adaptive Future Planning, Gerald Buckwalter

Greenhouse Gas Emissions, Inventories, and Goals – Transportation Agencies Travelling to a Carbon-Free Future, David Nowak

Track 5 Session 3**1:45 - 2:45 p.m.**

The Engineering Consultant: Responsible Practice – Incorporating SLR in Engineering Design within the Coastal Environments, Paul Carroll

Track 6 Session 3**1:45 - 2:45 p.m.**

U.S.DOT in Action – Policies, Programs, and Practical Strategies for Sustainable and Resilient Transportation Infrastructure, Antoinette Quagliata

Federal Leadership Advancing Climate Resilient Infrastructure, Terry Neimeyer

Track 7 – Stand-up session in the Hall of Inspiration (details below)**2:45 - 5:45 p.m.**

Track 1 Session 4**3:00 - 4:30 p.m.**

REEFS: Reef Engineering to Enhance Future Structures, Borja Reguero

Implementing a Nature-Based Shoreline Resilience Design at Heron's Head Park, Erica Petersen

A Sustainable and Resilient Approach for Beach Restoration and Coastal Planning – Challenges and Opportunities for Caribbean Beach Tourism, Felix Juzgado

Nature-based design for resiliency purposes – Case Study: using bivalves to decrease scour in place of traditional means, Joanna Quiah

Large-Scale Physical Model to Quantify Overtopping Performance of Hybrid Green-Gray Coastal Infrastructure, Margaret Libby

Track 2 Session 4

3:00 - 4:30 p.m.

Model-data validation and uncertainty quantification of the IN- CORE and HAZUS-MH damage models for buildings impacted by Hurricane Ian (2022) at Fort Myers Beach, Florida, Mehrshad Amini

Tool to Model Water Supply Outage and Restoration, Sina Naeimi

Equity Considered Infrastructure Retrofitting for the Electric Distribution Network, Abigail Beck

A Practical Framework for Infrastructure Resilience, Ahmet Ozman

Track 3 Session 4

3:00 - 4:30 p.m.

Tools Facilitating Climate Change Risk Assessment for Infrastructure, Sarah-Claude Bourdeau-Goulet

Hurricane Wind Performance and Vulnerability Mitigation Strategies for Informally Constructed Houses in Puerto Rico, Diego Valdivieso

Longitudinal Study of The December 2021 Tornado Outbreak to Validate Recovery Models, Blythe Johnston

Probabilistic Modeling of Hurricane-Induced Debris Impacts for Coastal Community Resilience Analysis, Kooshan Amini

Post-Earthquake Functionality Recovery Models for Highway Bridges in China: A Nationwide Survey Study on Expert Opinions, Xiaowei Wang

Track 4 Session 4

3:00 - 4:30 p.m.

Embodied Carbon Education: Scaling Climate Action Across the Structural Engineering Profession, Michael Cropper

A Guide to Navigate Environmental Product Declarations of Construction Materials, Laura Micheli

Calculating the Embodied and Operational Carbon Footprint in Concrete Buildings: A Case Study Simulation to Mitigate Carbon Footprint, Mahtab Kouhirostamkolaei

Open wins - How an Open Approach Is Critical to Efficiently Manage Carbon In Large Infrastructure Projects. Rodrigo Fernandes

Translating Organizational Sustainability Commitments Into Infrastructure Project Performance Objectives, Actions, and Metrics, Sara Tomashitis

Climate Change-Adapted Design for Durable And Sustainable Masonry Cavity-Wall Construction: Overview of A Transformative Research Project At McGill University, Lindsay Saad

Track 5 Session 4

3:00 - 4:30 p.m.

Projecting Lower Colorado River Basin Water Deliveries under Future Climate Change, Yuchuan Lai

Modeling Heat Diffusion in Urban Environment using Physics- informed Deep Learning, Tong Liu

Effect of Climate Change on Annual Failure Probability of Rainfall- Induced Landslides at a Specific Slope, Liu Xin

Quantifying Flood Risks to MnDOT Bridges and Culverts under Climate Change – Dodge County Case Study, Christopher Dorney

Track 6 Session 4

3:00 - 4:30 p.m.

Climate Action for Engineers: A Primer on Climate Change Policy and Governance, Adam Eaton

Role of Post-Disaster Federal Payouts on Flood Insurance in the U.S., Arkaprabha Bhattacharyya

Barriers to Social Media Use for Disasters within Transportation, Christine Wittich

A Risk-Averse Mitigation Planning Framework for Resilient Communities, Tasnim Faiz

Dynamic Regulation in the Sustainability Environment, Vincent Brannigan

Wholistic Approaches to Sustainable and Resilient Interdependent Infrastructures: Social and Behavioral Measures to Identify and Manage Abrupt Physical System Changes, Rae Zimmerman

Filling Gaps in The Measurement of Community Resilience: Indicators For Physical Systems, Jarrod Loerzel

Climate adaptation heroes: How Digital Solutions Can Help Cities and Communities Adapt to Climate Change, Rodrigo Fernandes

Track 7 – Stand-up session in the Hall of Inspiration (details below)

2:45 -5:45 p.m.

Track 1 Session 5**4:45 - 5:45 p.m.***MAAPnext-Let's MAP A Path Forward for Resilience*, Ataul Hannan**Track 2 Session 5****4:45 - 5:45 p.m.***Hurricane policy support through integration of disciplinary contributions*, Rachel Davidson**Track 3 Session 5****4:45 - 5:45 p.m.***From Climate Data to Implementation in Design*, Terri McAllister*Findings of the Special Project on the Effect of Climate Change on the Built Environment*,
Paolo Bocchini**Track 4 Session 5****4:45 - 5:45 p.m.***Structural Engineers commit to net-zero embodied carbon by 2050*, Michael Gryniuk*Infrastructure 2050*, Lauren Alger**Track 5 Session 5****4:45 - 5:45 p.m.***ASCE-EWRI Actions to Support Safe and Resilient Infrastructure in the Face of a Changing Climate*, Shirley Clark**Track 6 Session 6****4:45 - 5:45 p.m.****ESG: Panels***Implementing Organizational Change to Embed ESG in Water Systems*, Emily Corwin*ESG Considerations in Infrastructure Funding*, Michael Bloom**Track 7 – Stand-up session in the Hall of Inspiration (details below)****2:45 -5:45 p.m.**

Friday, November 17

Keynote Speaker and Plenary Panel 8:15 - 9:45 a.m.

Track 1 Session 7

10:00 - 11:15 a.m.

Towards Performance-Based Design Standards for Engineering With Nature: Emergent Vegetation and Hybrid Systems, Tori Tomiczek

Life-cycle Cost Analysis of Urban Stream Restoration, Liya Abera

Nature-inspired Infrastructure for Climate Resilience Planning: Strategies for Sea Level Rise Adaption in the Nile Delta Costal Urban Centers, Ibrahim Abdou

Performance-Based Design Methodology for Emergent Vegetation Systems, Kayla Ostrow

Nature-based Infrastructure, Rowan Palmer

Track 2 Session 7

10:00 - 11:15 a.m.

Planning for Future Conditions: Emerging methods for Decision Making Under Deep Uncertainty and Implementation of Dynamic Adaptive Pathways, Jayantha Obeysekera

Multi-hazard risk assessment of critical infrastructure at the global scale, S Nirandjan

Track 3 Session 7

10:00 - 11:15 a.m.

3D Printed Pseudo-Ductile FRP Composites for Resilient Infrastructure, Mahmoud Taha

Physical-Socio-Economic Systems Integration for Community Resilience-Informed Decision-Making and Policy Selection, Lisa Wang

Accelerating Digital Transformation with Open Standards for Infrastructure, Johnny Fortune

Advancing Flood-Resilient Standards, Design and Construction, Gina Filippone

Military Installation Resilience in the San Diego Region, Laura Wagner-Bartz

Track 4 Session 7**10:00 - 11:15 a.m.*****Predicting Energy Use Intensity of US Hotel Buildings Using CBECS Microdata***, Hevar Palani***Clean, Resilient AND Sustainable Energy - Is This Achievable and By When?*** Chuck Hookham***Impacts of energy transformation on coal rail transportation: estimates and projections for the period 2005-2050***, Yating Zhang***US Department of Energy (DOE) Strategic Planning, Coordination, and RD&D Priorities for National-Scale CO2 Transport Infrastructure***, Sarah Leung***Lithium: The Race for North American EV Dominance But at What Cost to the Industry?***
Nicholas Albergo***Analytics and Quantification of Risk Tolerance and Attitude in the Economics of Electric Power and Gas Utilities***, Bilal Ayyub**Track 5 Session 7****10:00 - 11:15 a.m.*****Equitable resilience and climate change adaption***, Guirong Yan***Using time-dependent community recovery data from Hurricane Matthew to inform equitable resilience planning***, Elaina Sutley**Track 6 Session 7****10:00 - 11:15 a.m.*****Environmental Justice and Community Impact Assessment Practitioner Experiences at State DOTs in the United States***, Collin Yarbrough***Water Utility Perspectives on Equitable Emergency Planning and Response***, Joseph Toland***Environmental Justice: Considerations for Future Infrastructure Developments***, Eric Sokol***Measuring Resilience in Low-Income and Vulnerable Communities: Case Studies Evaluating the Effectiveness of Resilience Hubs***, Denise Smith***Green Gentrification: The Unintended Consequence of Urban Greening***, Danielle Espinosa**Track 7 – Stand-up session in the Hall of Inspiration (details below)****10:00 a.m. - 1:00 p.m.**

Lunch in Hall of Inspiration 11:30 a.m. - 1:00 p.m.**Technical Tours 1:00 - 5:00 p.m. (optional, additional fee)**

Track 1 Session 8**1:00 - 2:00 p.m.*****Adaptive Reuse***, Radhi Majmudar**Track 2 Session 8****1:00 - 2:00 p.m.*****Open-Source Platforms for Resilience Assessment of Communities and Regions to Natural Hazards***, John van de Lindt***Pyrecodes: an open-source software for regional recovery simulation and resilience assessment of the built environment***, Nikola Blagojevic**Track 3 Session 8****1:00 - 2:00 p.m.*****Emerging Technologies' Contributions to Civil Infrastructure System Resilience***, Kenichi Soga**Track 4 Session 8****1:00 - 2:00 p.m.*****Industry Perspectives:******A Discussion on Decarbonization in the Utility Sector***, Laura Drescher***Carbon Reduction related to goods movement and different transportation modes***, Joel Farrier**Track 5 Session 8****1:00 - 2:00 p.m.*****Partnering for Military Installation Resilience***, Andrea Sweigart***Adapting US Research Infrastructure to Reverse the Mounting Toll of Climatological Hazards***, Tracy Kijewski-Correa**Track 6 Session 8****1:00 - 2:00 p.m.*****Envision:******Using Envision to Advance Sustainable Transportation: A Case Study of 495Next Express Lanes***, Erin Gehan***ISI-10 Years Progress Advancing Sustainability***, Terry Neimeyer**Track 7 – Stand-up session in the Hall of Inspiration (details below)****2:45 - 5:45 p.m.**

Track 1 Session 9**2:15 - 3:45 p.m.**

Advances in Optical Remote Sensing for Global Flood Disaster Mapping Towards Operational Readiness, ZhiQiang Chen

Present and Future Flooding in Annapolis, MD: Monitoring And Numerical Modeling, Liliana Velasquez-Montoya

Sensitivity and Uncertainty Analysis in Resilience Modeling of Costal Freight Networks, Anibal Tafur

Water Conservation vs. Climate Change? The Future of Sanitary Sewers, Michael Lehrburger

Risk Assessment for Infrastructure Vulnerable to Flood Hazard in the Great Lake Region, Chengcheng Tao

A Hybrid Bayesian Approach to Augment External Flooding Probabilistic Risk Assessments of Nuclear Power Plants, Joy Shen

Rapid Flood Inundation Mapping and Consequence Estimation along Rivers and Coasts using the Life Safety Risk Index (LSRI) Web Tool, Garrett Menichino

Assurance of Resilient Coastal Communities in a Changing Climate, Mohamed Abdelhafez

Jean Lafitte Shoreline Protection Project For SAV Habitat Restoration: Numerical Modeling, Rebecca Aiken

Track 2 Session 9**2:15 - 3:45 p.m.**

Walking the Talk: Practical Tips for Climate Resilient Design, Aditya Bhagath

Projecting Tropical Cyclones Change Trend under Future Climate Scenarios, Guirong Yan

Creating Sustainable Urban Mass Transit Systems in Developing Economies, Diana Diaz

Estimating the Indirect Impacts of Infrastructure Disruptions, Beatrice Cassottana

Track 3 Session 9**2:15 - 3:45 p.m.**

Advances and Future Needs for Collaborative Networks for Natural Hazards and Disasters Research, Jennifer Bridge

Interdependent Physical Infrastructure and Social Systems Modeling for Seismic Resilience Assessment of Salt Lake County, Omar Sediek

Minimal Sensing and Data Fusion for Structural Seismic Risk and Resilience Modeling, Milad Roohi

Investigation Of Resiliency in Modular Construction, Maryam Kouhirostami

Predicting the Spatial Distribution of Damage to the Built Environment in Wildfires, Hussam Mahmoud

Track 4 Session 9

2:15 - 3:45 p.m.

Automated Mobility Platforms (AMPs) Systems for Passenger Movement in Airport, Campus, and Large Facilities Locations, Andrew Duvall

Bio-inspiration for subsurface exploration, Douglas Cortes

Two Modeling Methods Applied to an Extensive Green Roof in Syracuse, New York, Cliff Davidson

India – Sustainable Energy Transition & Net Zero, Anak Sharma

Investigating the Impact of EPA Emergency Fuel Waivers on the Air Quality and Retail Fuel Prices after Hurricane Sandy, Sooin Kim

Greenhouse Gas Emissions, Inventories, and Goals – Transportation Agencies Travelling to a Carbon-Free Future, David Nowak

Track 5 Session 9

2:15 - 3:45 p.m.

Climate Risk Trends in Commercial Real Estate Finance and Property Insurance - Implications for Enhancing Resilience in Commercial Real Estate as Part of Community Infrastructure, Holly Neber

Assessment of Residential Construction due to Sea Level Rise and Saltwater Intrusion, Monique Head

Enabling Next Generation of Infrastructure Professionals through a Global Academic Network, Wasi Alam

Track 6 Session 9

2:15 - 3:45 p.m.

Creating Equitable Access with The Lily Pad Neighborhood Mobility Hub, Gerarda Shields

Climate Equity: Building Social Sustainability through Sustainability Frameworks, Catherine T. Sheane

Measuring Inequities in Post-Disaster Accessibility to Schools, Seyyed Amin Enderami

Flood Interventions for Socially Equitable Community Resilience, Catie Hood

Identifying Performance Metrics to Support the Integration of Social Equity in Asset Management, Fawzi Khalife

Public Policies for Construction and Professional Services Contracting to Advance Diversity, Equity, and Inclusion, Rod Iwashita

Exploration of biasedness and inequities in infrastructure resilience modeling, Raul Rincon

Track 7 – Stand-up session in the Hall of Inspiration (details below)

2:45 - 5:45 p.m.

Track 1 Session 10

4:00 - 5:30 p.m.

Natural Infrastructure and Engineering with Nature Training and Education, Brian Bledsoe

Track 2 Session 10

4:00 - 5:30 p.m.

A Network Modelling-Based Approach for Quantifying Flood Resilience of Urban Rail Transit Systems, Wei Bi

Development of Tsunami Frequency-Fatality Numbers (F-N) Curve for Coastal Communities Subjected to Cascadia Subduction Earthquakes, Katsuichiro Goda

The Diagonal Approximated Signature as New Surrogate Modeling Approach for Continuous-State Systems in the Context of Resilience Optimization, Niklas R. Winnewisser

A deep Learning-Based Interpretation of Seismic Demand Models Using Mechanistic Representations, Mohsen Zaker Esteghamati

Improving Geostationary-Satellite-based Prediction of Wildfire Spread by Directional Rate of Spread Adjustment Factor, Seungmin Yoo

Subset Simulation for Efficient Seismic Reliability Analysis of Lifeline Networks, Dongkyu Lee

Enhancing Bridge Infrastructure Flood Resilience Through Fluid- Structure Interaction Modeling, Chengcheng Tao

Track 3 Session 10

4:00 - 5:30 p.m.

Application of Artificial Intelligence, Remote Sensing, and 3D Printing for the Sustainability of Civil Infrastructure, Ainalem Nega

Rapid Post Disaster Redundancy Evaluation of Bridges; Towards the Infrastructure Rapid Recovery, Mahdy Taeby

Utility Infrastructure Data Exchange for Project Development and Emergency Response, Philip Meis

Track 4 Session 10**4:00 - 5:30 p.m.*****Building a Climate Resilient Electrical Grid for Northern Illinois*, Tom Wall*****A Probabilistic Method to Assess the Risk of Contamination- Induced Insulator Flashover*,
Gitanjali Bhattacharjee*****An Optimized Target Reliability Index for Solar PV Structures Considering Excess Mortality due
to Structural Failure Related Power Outage*, Brian Skourup*****The Convergence of Vehicle Electrification and Automation – Impacts on Urban District
Transportation Infrastructure*, Sam Lott*****Managing RNG: Achieving the Highest Return*, John Willis*****Developing Renewable Energy Applications for Water Treatment Technologies and
Transmission*, Scott Struck****Track 5 Session 10****4:00 - 5:30 p.m.*****Climate Change is Changing Everything: Introduction to Probable Futures*, Michael Bloom*****Design, Selection and Prioritization of Climate Resilient Infrastructure*, D.J. Rasmussen*****Optimal Design and Life-Long Adaptation of Civil Infrastructure Under Climate Change and
Uncertain Demands*, Gordon Warn****Track 6 Session 10****4:00 - 5:30 p.m.*****Assessing the Feasibility of Light Rail Transit amidst failed BRT projects in Accra, Ghana*, Alfred
Oboubi*****An Evolutionary, System-of-Systems Approach to Societal Challenges of the Anthropocene*,
John Little*****Designing for Resilience: Pedagogical Models for Engaging Infrastructural Design Problems
with a User-Centric Mindset*, Chris Ford*****Achieving Optimized Financing Through Innovative Costing - The Case of Addis Ababa's
Water Distribution Network*, Nasser Tuqan*****Making Beira Resilient? Rethinking Infrastructural Development for Addressing Social
Inclusion*, Shahnoor Hasan****Track 7 – Stand-up session in the Hall of Inspiration (details below)****2:45 - 5:45 p.m.**

Saturday, November 18

Track 1 Session 11

8:00 - 9:30 a.m.

Engineering With Nature to Enhance Environmental Resilience to Coastal Erosion and Flooding at Point Hope, AK, Lauren Bosche

Quantifying the Benefits of Nature-Based Design in Federal Flood Management Infrastructure, Matt Chambers

Mayor of Hope Point AK
EA Colleague (Taber to confirm)
Rising Voices speaker (Mari to confirm)

Track 2 Session 11

8:00 - 9:30 a.m.

A Digital Twin of The I-90 Homer Hadley Memorial Floating Bridge: Evaluating Emerging Technology for Asset Management and Operations on One of the Most Complex Bridges in the World, Barton Treece

Merging FMEA and Digital Twins to Evaluate The Trustfulness of an ICT Infrastructure, Fabrizio Baiardi

An Efficient Adaptive Importance Sampling Method for Probabilistic Seismic Hazard Analysis, Zeinab Farahmandfar

Track 3 Session 11

8:00 - 9:30 a.m.

Innovation Avenues for Large Infrastructure Programs, John Kuprenas

Floodplain Analysis for Military Preparedness in the face of Climate Change and Extreme Weather Events – Need, Limitations, Benefits and Methodology, Asma Hanif

Case Study - Repurposing 1940's Navy Wharf Infrastructure into Public Urban Waterfront Space, Samuel Cortes

A New, Damage-Resistant Slab-Column Connection for Flat-Plate Construction, Dawn Lehman

3D Printed Concrete Structures: Design Principles and Experimental Validations, Petros Sideris

Track 4 Session 11**8:00 - 9:30 a.m.*****South Bend, Indiana: Carbon Neutral 2050***, Theresa Harrison***Food Waste & Organics: Evolving Resource Recovery Practices***, Laura Drescher***Climate Change as Related to Site Remediation and Remedy Resilience***, Rick Wice***EV Charge Point Utilisation Modelling: Its Critical Importance in The Future of The Transition to EV***, Zunaid Vawda**Track 5 Session 11****8:00 - 9:30 a.m.*****You Cannot Unknow This: Climate Wishing***, Ann Kosmal**Track 5 Session 11****8:00 - 9:30 a.m.*****ASCE Global Sustainability Fostering Education and Implementing UN Sustainable Development Goals***, Stephen Fisher***Engineering Education for Sustainable Development***, Tom Siller***Prepare to Engineer Tomorrow, Starting Today with Responsible Innovation***, Tony Kulesa***Sustainability Collaboration - COS Education and Technical Committees Discussion***, Joel Farrier**Track 1 Session 12****9:45 - 11:15 a.m.*****Resilient Housing and Sustainable Infrastructure Systems Development In Coastal Communities In The Americas***, Daniel Campbell ***Spatial Transformation Tactics for Makeable Adaptation Futures In The Netherlands***, Jeroen Rijke***Resilience Implications Where Land and Water Meet***, Paul Tschirky***Equitable Adaptation Framework Toward Climate-Resilient Levees***, Mohammed Azhar Mohammed Mowjood***Building Long-Term Sustainability and Resiliency into Water Quality Driven Projects: Project Example: Los Penasquitos Lagoon Restoration and Water Quality Project***, David Pohl

Track 2 Session 12**9:45 - 11:15 a.m.**

Large-scale Modeling to Inform Investments in Climate Resilience Across Infrastructure Systems and Building Portfolios, Juan Carlos Lam

Seismic Multi-hazard Multi-Disciplinary Resilience Modeling for Community-Level Structural Retrofit Decision Making, Milad Roohi

Risk-informing the Prediction of The Probability of Extended Loss of Power to Major Infrastructure and Facilities, Stefano Marchetti

Track 3 Session 12**9:45 - 11:15 a.m.**

Interacting Sociotechnical Impact of Natural Hazards, Nasim Uddin

Examining FEMA's Building Resilient Infrastructure and Communities Grant Program, Andrea Becker

Track 4 Session 12**9:45 - 11:15 a.m.**

What the Carbon? Building a Sustainable Materials Future with Embodied Carbon Data, Tiffany Reed-Villarreal

Envision is a Journey, Not a Destination: Progression through an Envision Scope, Jennifer Ninete

Track 5 Session 12**9:45 - 11:15 a.m.**

The Emerging ASCE NOAA Partnership and Its Implications for Engineering Practice, Dan Walker

Track 6 Session 12**9:45 - 11:15 a.m.**

COP28 Themes and Priorities: Reflections and Insights from the Engineering Community, Billie Donovan

Convergent Engineering Systems: A System-of-Systems Approach for Implementing UN Sustainable Development Goals, Amro Farid

Building Equity into Infrastructure through Transformational Social Change, Ana Tijerina Esquino

Awards Lunch and Closing Plenary 11:30 a.m. - 1:00 p.m.

Stand-up Sessions in the Hall of Inspiration

Session themes

Emerging Technologies

Thursday, November 16
9:00am-12:00pm ET

Environmental Performance

Thursday, November 16
2:45pm-5:45pm ET

Materials & Systems

Friday, November 17
10:00am-1:00pm ET

Finance & Policy

Friday, November 17
2:45pm-5:45pm ET

Emerging Technologies

Thursday, November 16

9:00am-12:00pm ET

Emerging Technologies Innovations

Infrastructure Digitalization

Technical Assessment

Energy Efficiency & Power Production

Emerging Technologies Innovations

3D Bridge Damage Detection and Updating by UAV, SfM and Deep Learning, *Ji Dang*

3D Displacement Observation Monitoring Of A Truss Bridge Damaged In A Tanker Crash Using Multi-GNSS Measurements, *GAKUHO WATANABE*

3D Printed Hempcrete Structures - Combining Automation, Sustainability and Resilience, *Petros Sideris*

A new Post-Installed Reinforcement System to Extend Life Time of Existing Structures as Contribution to Sustainability, *Johannes Lechner*

A Stochastic Decision-making Framework for the Operational Resilience of Smart Power Grids under Hurricanes, *Jaeyeong Lim*

Auto-design-based optimizations of prestressed frames using an ANN-based Hong-Lagrange algorithm, *Won-Kee Hong*

Clean and Green in Staten Island: Design of the Department of Sanitation Garage, *Hasan Pekoz*

Computer Vision Applications in Building Energy Modeling and Management, *Yang Shen*

Deep Learning-Based Automated Pavement Layer Thickness Detection Using GPR Data, *Da Hu*

Designing a Lower Salt Future, *Mackenzie O'Reilly*

Digital Twin of Large Steel Frame Structures Condition Assessment, *Gbandi Nikabou*

Drivers in the Adoption of Augmented Reality and Virtual Reality in Construction Education of Pakistan, *Usman Ali*

Earth Observation and Artificial Intelligence for Objective Risk and Resilience Monitoring and Measurement (EO-R2M2), *Bandana Kar*

Geospatial Interpolation Of SPT-N Values Using Machine Learning Algorithms For Jolshiri Abashon: A Case Study, *Nafisa Amin Chowdhury*

Hazard Mapping and Modeling of Wildfires: An Oklahoma Case Study, *Richard Campos*

Impact of Project Selection Criteria on Organizational Performance: A Machine Learning Approach, *Mubeen Ul Basharat*

Improving Earthquake Resilience Using 3D Printed Viscoelastic Dampers, *Mahmoud*

Taha

Incorporating Advanced Imaging Techniques for Climate-Resilient Geotechnical Asset Management, *Rakesh Salunke*

More Affordable, Quickly Constructable, Climate Change Resilient, Reliable, And Greener Public Transit System - Ultra-Light On/Off Rail Transit System, *Ragu Satgunanathan*

Multiple-Drones-Multiple-Trucks Routing Problem for Disruption Assessment, *Alireza Ermagun*

Potential of Platform Business Strategy for Creating Innovation Ecosystem for Climate and Disaster Resilient Infrastructure, *Ratnesh Kumar*

Probabilistic Restoration Modeling of Wide Area Power Outage, *Bandana Kar*

Recent Innovation for Strengthening Substructure in Historic Buildings, *Asmaul Husna Chara*

SafeSwim: Integrating real-time monitoring and modeling for near-term predictions of water quality, *Nancy Wohlleb*

Segmenting, Characterizing, and Geo-registering Bridge Cracks via Drone-acquired Images, *Da Hu*

Solar Array Pile Optimization, *Yingbor Liao*

Technological Improvement on Earthquake Resilient Wrap faced embankment on soft soil, *Ripon Hore*

The Effects Of Virtual Reality On Student Learning In Civil Engineering Program: Case Of Developing Country, *Dr. Ahsen Maqsoom*

Use of Nuclear Magnetic Resonance (NMR) and Gravimetric Scanning Platforms to Perform Underground Location of Any Element in the Periodic Table, *Michael Edgerly*

Infrastructure Digitalization

A Novel Approach For Metro Tunnel Leakage Inspection Using Mobile Laser Scanning, *Mingliang Zhou*

An Integrated Physics-Inspired Data-Driven Model In Support Of Carbon Emission Reduction In Built Environments, *Navid Goudarzi*

Assessing the Risk Of Healthcare Facilities To Industrial Control System Cyber Vulnerabilities., *Lt Col Josh Aldred*

Building Information Modelling Integrated Decision Support System For Optimising Labour Acquisition In Construction Using NSGA II, *Sarang Jaiswal*

Computational Modeling Of Cured-In-Place Structural Liner For Aged Pipeline Rehabilitation, *Chengcheng Tao*

Data Lake Usage Benefits And Challenges For Delay Forecasting In Indian Highway Projects

Multi-robot Teaming To Make Digital Twin Models For Infrastructure Health Monitoring Applications, *Kiyarash Aminfar*

Ontology for an End-To-End Digital Twin Model for Infrastructure Asset Management, *Mehrdad Ghyabi*

Protecting Critical Infrastructure Assets Through Resilient Cybersecurity Design and Sustainment Practices, *Daniel Shepard*

Technical Assessment

Application of Natural Rubber Latex for Improving Dynamic Response of Sand, *Veena U*

Delivering Decarbonization And Sustainability Gains During Construction Through Non-Intrusive Subsurface Imaging, *Caroline Ang Wright*

Flood Hazard Assessment of Transportation Infrastructure Using Remote Sensing and Machine Learning, *Amir Javid*

Forecast Informed Reservoir Operations (FIRO), *Duncan Axisa*

Numerical Analysis of Soldier Pile Tieback Walls for Generalized Load Types, *Ruipeng Li*

Preparing for the Unexpected: Building Community Resilience through Benchmarking, *Joseph Sollod*

Reassessing the Adequacy Of Code-Based Site Classification Techniques For Seismic Design Of Buildings: A case study of the Kashmir Valley, Jammu and Kashmir, *Falak Zahoor*

Tensile Failure in CO₂-Circulated Enhanced Geothermal Systems Due to Coupled CO₂ Storage and Geothermal Extraction, *Oladoyin Kolawole*

Energy Efficiency & Power Production

A Cost-Effective Strategy to Improve Industrial and Office Buildings' Energy Efficiency: Using On-Site Electricity Generation, *Navid Goudarzi*

Intelligent 3D-Printed Prefabricated Plastic Roadway Panels (IPPP), *Jumana Almushcab*

Pump Optimization: An Application of the AVEVA PI System, *Ethan Smith*

Sustainable Water Management in the Unconventional Oil and Gas Industry, *Huishu Li*

Environmental Performance

Thursday, November 16

2:45pm-5:45pm ET

Climate-readiness

Nature-based Design

Sustainability

Water

Emerging Technologies Innovations

A Non-Stationary, Risk-Based Approach For Determining Facility Design Specifications Under Sea-Level Rise And Other Climate Hazards, *D.J. Rasmussen*

Calibration of Concrete Bridge Condition Deterioration for Climate Change Impact Evaluation, *Ao Du*

Climate Adaptive Solution Using Vetiver for Highway Slope Repair, *Avipriyo Chakraborty*

Climate Change Adaptation Planning For Residential Buildings Under Hurricane Threat In A Life-Cycle Context, *Babak Salarieh*

Climate Change Readiness, “How do we get started?”, *Alan Falk*

Climate Readiness – Sea Level Rise Preparedness, *Balkis Hassane*

Extreme wind and snow loads for Alaska in projected future climates, *Sihan Li*

Legacy Soil Compaction and Its Impacts on Stormwater Modeling and Predictions of Flooding, *Shirley Clark*

Probabilistic Coastal Compound Flood Hazard Analysis Based on Multi-tier Bayesian Network, *Ziyue Liu*

Spillway Width and Stream Power: Predicting Erodible Embankments Using Machine Learning Technique, *Sanjeeta Ghimire*

State of Climate Projections and Next Steps for Stormwater Wastewater Resilience Planning, *Michael Mak*

The Impact Of Sea-Level Rise And Roadway Flooding On Workforce Accessibility For US Coastal Military Installations, *Behnam Tahmasbi*

The Resilience Performance Assessment (RPA), An Innovative Solution To Measure The Benefits Of Adaptation Investments For Infrastructures, Buildings, And Territories, *Nina Jirouskova*

Too Salty? – Potential for Standardization of Saltwater Intrusion Testing in Building Materials, *Tiana Thorp*

Understanding Compound Drought-Heatwaves by Analysis of Multivariate Non-Stationary Time Series Data using Greedy Copula Segmentation, *Taemin Heo*

Winter De-icing Operations of Permeable Interlocking Concrete Pavements Compared

to Asphalt Pavements, *William Horr*

Infrastructure Digitalization

A Transformative Approach to Repair Highway Slope using Vetiver Grass, *Fariha Rahman*

Evaluating The Impact Of Long-Term Sea Level Rise And Coastal Development On The Effectiveness Of Coastal Wetlands In Protecting Coastal Communities From Storm Surge Hazards In Galveston Bay, Texas, *Zaid Al-Attabi*

Exploring Limitations Of Marsh Restoration For Flood Reduction In Legacy Salt Ponds, *Rae Taylor-Burns*

Green-Gray Solutions for a Resilient North Brazil Shelf, *Emily Corwin*

Nature-based Design Standards: Past, Present, and Future, *Emily Corwin*

Perennial Grass Improvement to Geotextile Applications, *Olivia Lesnick*

Re-imagining Infrastructure for a Biodiverse Future, *Charles van Rees*

Towards A Quantification Of The Benefits Of Nature-Based Engineering Solutions In A Context Of Climate-Change – Focus On Cold Deserts Industrial Infrastructures, *Nina Jirouskova*

Wave Attenuation Performance Of Emergent Reef Type Breakwaters And Oyster Shell Bags, *Georgette Tso*

Technical Assessment

A Life Cycle Analysis (LCA) Framework for Creating Circularity in Infrastructure Projects, *Shantanu Kumar*

An Investigation Into The Sustainable Material Management Practices In The Indian Construction Industry, *Santu Kar*

Comparative Life Cycle Assessment of Different Anaerobic Bio-Digesters in Developing Countries, *Md Azijul Islam*

Considerations For Low-Income And Underserved Communities When Developing Guidance For Extreme Hazard Event Preparedness, *JAZALYN DUKES*

Embodied Carbon: Better Understanding of the Problem to Better Implement the Solution, *Sydney Hope*

Evaluating the Environmental Performance of Manufactured Housing Through a Comprehensive Life Cycle Assessment, *Maryam Kouhirostami*

Evaluating The Impact Of Contracting And Procurement Methods On Energy And Carbon Emission Reduction In The Public Construction Sector, *Chengyi Zhang*

Evaluating Thermal Load And Pollutants Dispersion For Buildings In A Small Commercial-Industrial Area To Achieve An Optimal Design, *Navid Goudarzi*

Family Firm Ownership and Carbon Emissions, *Marcin Borsuk*

Fluor's Net Zero 2023: Challenges and Opportunities, *Lyudmyla Brady*

Guidelines For Measuring, Monitoring, And Verifying Soil Carbon And Greenhouse Gas Emissions In Estates With Different Land Uses, *Caio Zani*

Life Cycle Assessment of Sustainable Landfill Liner Systems, *Raviteja K*

Materials Testing Technicians Intern Program for Jamaica and the Caribbean, *Michael Edgerly*

Socioeconomic Value Of Salt Marsh Ecosystems For People And Property In Georgia, *Matthew Bilskie*

Sustainability and Energy-Efficiency in Buildings: A review, *Medya Fathi*

Sustainable Infrastructure Virtual Learning Network: A Model For Exchanging Knowledge Among Experts And Practitioners, *Emily Corwin*

Sustainable Strategies, *Akram Saad*

Teaching Young Dogs New Tricks – Embedding Resilience and Decarbonization Learning Into Structures Courses for Architects, *Dan Bergsagel*

The Multi-functionality of Permeable Pavers: Increasing Rate of Return on Infrastructure Investment, *Paul Cureton*

Energy Efficiency & Power Production

A Case Study of Re-Analyzing Three Condominiums Facing Condemnation or the fury of the Gulf of Mexico, *Mark E Haas*

Deep Learning-Based Data-Driven Modeling Of Compound Urban Flooding, *Shima Kasaei*

Non-Invasive 3D Imaging and Sensor Data-based Diagnosis of Water Treatment Plant Filter Integrity, *Pengkun Liu*

Proactive Seismic Rehabilitation Decision-Making For Water Pipe Networks Considering Transient Strains And Earthquake-Induced Geotechnical Instability, *Abhijit Roy*

Tire Derived Aggregate (TDA) is a New Sustainable Aggregate and is One Part of the Best Management Practices (BMPs) for Stormwater Infiltration Galleries., *Monte Niemi*

Tire Derived Aggregate (TDA) is a New Sustainable Aggregate and is one part of the Best Management Practices (BMPs) for Stormwater Infiltration Galleries., *Monte Niemi*

Materials & Systems

Friday, November 17

10:00am-1:00pm ET

Materials

Measurement & Maintenance

Resilient Infrastructure Systems 1

Resilient Infrastructure Systems 2

Materials

100% Recycled Asphalt Mixtures as Base Course for Parking Lots, *Fabricio Leiva*

A Data-Driven Approach To Evaluate The Mechanical Properties Of Recycled Aggregate Concrete, *Srishti Banerji*

A Step Towards Upcycling Keratinous Feather Waste Into Economically Sustainable Flame-Retardant Adjuvants For Polymeric Composites, *Avishek Mishra*

Asphalt Rejuvenation Potential of Tire Pyrolysis Oil Evaluated by NMR Relaxometry and DSR Testing, *Rebecca Herndon*

Driving Building Decarbonization through a Whole Lifecycle Approach, *Joseph Sollod*

Incorporating Lignin Biomass into Polypropylene for Sustainable, Durable, and Recyclable Structural Materials, *Jonathon Tanks*

Recyclable Natural Fiber-Based Prepregs For Thermoforming Composite Laminates, *Avishek Chanda*

Reusing Elements and Assemblies – Case studies in Applying Circular Economy Principles to Stairs and Bridges, *Dan Bergsagel*

Review on Utilising Pondered Coal Ash, *Ellen Zhao*

Utilization of Waste Plastic Bags to Improve Bitumen Properties: A Sustainable Solution, *Muhammad Faheem Afzal*

Measurement & Maintenance

A Comparative Study Of Envision Achievement On APD Transportation Projects, *Catherine T. Sheane*

A Design Optimization Model For Utilizing Vacant Buildings As The Infrastructure Of Temporary Housing, *SeogJae Choi*

A Flexible Approach To Manage Evolving Infrastructure Systems, *Mauricio Sanchez-Silva*

Cleaning Equipment to Restore Surface Infiltration Rates of Permeable Interlocking Concrete Pavements, *William Horr*

Climate Change: A Method For Assessing The Resilience Of A Sustainable Road Network, *Mariarosaria De Blasiis*

Deep Learning-based Metrics for Measuring Sustainability of County-Owned Bridges in

the U.S., *Mi Geum Chorzepa*

Evaluating The Flooding Level Impacts On Urban Metro Networks And Travel Demand: Behavioral Analyses, Agent-Based Simulation, And Large-Scale Case Study, *Bingyu Zhao*

Existing Structure - A Regulatory Antagonism?, *Robert Hertle*

Investigation of the Behavior of Split-Level Structures with Semi-Rigid Connections, *Abbas Khodayari*

Planning Your Sustainability Trip, a Transit Agency Perspective, *Jennifer Ninete*

Supra- and Sub-Resilience of Smart Infrastructure Systems: New Paradigm of Gains and Losses, *Sviatoslav Timashev*

The Effects of the Envision Process on a Large-Scale Northeast Coastal Resiliency Capital Infrastructure Project, *Matthew Nayer*

The Evolution of Resilience and Sustainability as Key Concepts in Research, Policy, and Engineering Discourse, *Yinglin Ye*

Urban Infrastructure Resource Taxonomy and Automated Geographic Information Retrieval for Community Livability Assessment, *Yi Wei*

Resilient Infrastructure Systems 1

Assessment and Prediction of Water Supply Network Reliability Under Information Shortage Using Artificial Neural Networks, *Sviatoslav Timashev*

Bayesian Network Framework to Model Seismic Failure Modes for an Embankment Dam System, *Emily Gibson*

Building the Foundations for Climate Resilient Infrastructure - Multi-Modal Perspectives, *Mathew Mampara*

Case Studies of Thrust Restraint Analysis of Buried Pipelines Considering Effects of Temperature, Earthquake, and the Poisson's Effect of Internal Pressure, *Tianye Yang*

Consideration of Equity and Climate Change in Infrastructure Design and Community Resilience, *Christine Wittich*

Examination Of Statistical Downscaling Methods For Pavement Climate Modelling Applications, *Austin Jarrell*

Hurricane-Induced Surge And Inland Flooding Effects On Localized Near-Surface Wind Flows In Suburban Coastal Communities, *Chengcheng Tao*

Implementation of Green Infrastructure in Prague for Smart Cities, *Luisa Castrejon*

Self-Learning Graph Neural Networks for Modeling and Predicting Disaster-Induced Flow Redistributions in Civil Infrastructure Systems, *Yang Liu*

Shear-wave Phase Velocity Identification In High-Rise Buildings Considering Dispersion Due To Bending Deformation: Application To A Shake-Table Test And Existing Buildings, *Xin Wang*

The Resilience Of Transmission Lines In The Wind Storm In May 2022 Passing South Ontario, *Sihan Li*

Tunnel Performance Under Extreme Environmental Effects, *Juan Manuel Mayoral Villa*

Uncertainty in Vulnerability of Transportation Networks with Variable Demand, *Alireza Ermagun*

Resilient Infrastructure Systems 2

Application of Adaptive Time-Stepping in the Resilience Analysis of Interdependent Infrastructure Systems Using an Iterative Optimization-based Simulation Framework, *Hamed Hafeznia*

Characterization of Stormwater Runoff in the Powai Region of Mumbai City, India, *Jyoti Mishra*

Damage-Spread and Condition-Rating Predictions of Bridge Deck with Material Degradation Models, *Hyunjin Jung*

Developing Pathways for Resilience Enhancement in Interdependent Infrastructure Networks: A Simulation-based Integrated Approach, *Srijith Balakrishnan*

Evaluation of Factors on the Concrete Breakout Strength of Bridge System Considering the Constant Dead Load, *Ju-Hyun Park*

Fuzzy Logic-Based Prioritization Model For Pipes And Valves Rehabilitation In The Water Distribution System, *Bahar Beker*

Household Adaptations To And Impacts Of Infrastructure System Service Interruptions: A Los Angeles, California case study, *Rithika Dulam*

Impact of Extreme Rainstorm on Metro System Resilience: Shanghai Metro as an Example, *Qianke Feng*

Investigation of a Flood Vulnerability Index for Southern New Jersey, *Jeong Eun Ahn*

Lock-in: Origination and Significance within Infrastructure Systems, *Alysha Helmrigh*

Seismic Risk Assessment Of Water Transmission Infrastructure Crossing Earthquake Faults, *Yi Peng*

Structural Chokepoints of Agri-Food Supply Chains in the United States, *Deniz Berfin Karakoc*

Quantifying causal impacts of transmission line failures on disaster resilience of power grids, *Youngjun Kwon*

Finance & Policy

Friday, November 17

2:45pm-5:45pm ET

Infrastructure Risk Assessment 1

Infrastructure Risk Assessment 2

Public Policies & Government Action

Social Justice, Ethics, Equity & Health

Infrastructure Risk Assessment

Appraising situation awareness in social media data for wildfire response, *zihui ma*

Detecting Social and Spatial Inequalities in Power System Critical Failures, *Natalie Coleman*

Emergency Communication Strategies During Tropical Cyclones "Back To Back" Eta And Iota And Potential Insights For Refining Communication Practices In Guatemala, *Sergio Garcia*

Feasibility Study of a Fully Compliant Nonlinear Energy Sink for Vibration Mitigation, *Zeeshan Qaiser*

Features and Limitations Study Of Transportation Resilience Planning Tools, *Xinyue Wang*

Forecasting Heat Risks In Jobsites: Towards Proactive Safety Management, *Youngjib Ham*

Integration of Geospatial Correlation for Rapid Highway Inundation Identification Following Flooding, *Yitong Li*

Lifetime Fragility Modeling Of Bridge Foundations Exposed To Climate Change-Related Hazards: Corrosion, Sour And Earthquake, *Bo Xu*

Machine Learning-Based Risk Assessment For Bridge Infrastructure, *Chengcheng Tao*

Quantification Of Infrastructure Systems Failure Risk Using Coupled Bayesian Network-System Dynamics Model, *Ahmed Badr*

Rapid Loss Estimation Of Multi-Hazard Earthquake-Tsunami Impacts For Improved Disaster Response And Recovery, *Yao Li*

Reliability Assessment Of Pile-Founded T-Walls Considering Soil Spatial Variability In The Face Of Flooding Hazards, *Lei Wang*

Reliability-based Assessment of Buried Steel Pipelines Subjected to Lateral Landslides, *Sylvester Agbo*

Residential Flood-Resistant Construction Appraisal Addendum: Framework, Case Study Findings and Path Forward, *Stuart Adams*

Risk assessment models for pipeline infrastructure failure, *Chengcheng Tao*

What can WE do to truly enable resilience of infrastructure through a shared action plan and well-informed investment?, *Nina Jirouskova*

Infrastructure Risk Assessment 2

Risk Analysis Of Natural Hazards To Power Grids In Southeast And East Asia, *Mengqi Ye*

A Novel Approach For Infrastructural Disaster Damage Assessment Using High Spatial Resolution Satellite and UAV Imageries Using Deep Learning Algorithms, *Saurabh Gupta*

An International Examination of Risk Communication Protocol and Best Practices Across Communication Modes and Hazard Types, *Emina Herovic*

Improving Infrastructure Investments Through The Integration Of Climate Risk Using System-Level Approaches, *Juan Carlos Lam*

Adopting Sustainability Concepts In Resolving Construction Disputes Using BIM Managerial Authority, *Mukund Srinivas R*

Quantitative Assessment of Post-disaster Transportation Network Recovery Plans and Resilience Tactics, *Fang Wei*

Validation of Compounding Hazards: Pathway Towards Enhancing Disaster Resilience Models, *Pegah Farshadmanesh*

Small-Scale Testing of Passive Fire Protection Systems for Structures on the Wildland-Urban Interface, *Taylor Sorensen*

Seismic Assessment of Non-Engineering Defects in Reinforced Concrete Structures with Scaled-Down Shake Table Test, *Ali Javed*

Satellite Imagery Reveals Long-Term Socioeconomic Recovery After Hurricane, *Tong Liu*

Semantic and Quantitative Framework for Characterization and Probabilistic Assessment of Multiple and Compound Hazard Assessments, *Constantinos Frantzis*

Analysis of Natural Disasters and COVID-19 Pandemic Complex Impacts on Distribution of PPP Loans, *Azin Al Kajbaf*

Uncertainty Analysis of Hurricane Forecasts to Support Probabilistic Risk Assessments of Critical Infrastructure, *Kaveh Faraji Najarkolaie*

Application of the Black-Scholes Financial Options Model to Adaptable Buildings: A Hypothetical Case Study of a Campus Parking Garage, *Miranda Grice*

Seismic failure analysis of circular tunnels based on probability density evolution method, *Zhongkai Huang*

A Machine Learning Approach for Regional Seismic Risk Assessment with Limited Exposure Data Availability, *AMIRHOSSEIN TAJIK*

Consideration of Pitting Corrosion for the Seismic Fragility Assessment of Bridges with Short Lap-spliced Columns, *Hyojoon An*

Public Policies & Government Action

Designing Resilient Infrastructure Systems to Support Socioeconomic Functions, *Jennifer Helgeson*

Entropy Analysis of Social Unrest After Large Urban Infrastructure Accidents, *Sviatoslav Timashev*

The Role of Autonomous Vehicles (AV) Policy, Governance and Implementation in Disaster Planning, *David Capelli*

How Engineers And Engineering Approaches Can Support Sustainable And Resilient Thinking In Policy And Finance, *Billie Donovan*

Social Justice, Ethics, Equity & Health

How the UNSDGs Can Be Employed To Promote Social Justice, Equity, And Health On A Local Scale, *Theresa Harrison*

Employers' Satisfaction Level Towards Graduates With Oil and Gas University Qualifications, *Yerkezhan Ybyrayeva*

Ranking Paths In A Road Network Considering Social Equity Hazard Vulnerability And Topological Importance, *Naqib Mashrur*

Interactions Between Housing Vulnerability and Isolation Risk due to Sea Level Rise in the United States, *Kelsea Best*

Assessing Community Resilience Through Dynamic Sociotechnical System Modeling, *Shangjia Dong*

Bringing Clean Mobility Options To Populations Most Affected By Inequitable Infrastructure Investment: A Case Study In St. Louis, Missouri And The "Delmar Divide", *Rick Grahn*

Fire Station Accessibility Assessment And Improvement Considering Probabilistic Road Failure In Facing Flooding, *Shangjia Dong*

Coining Neoclassical Realist Emotional Political Ecology for the Transboundary Helmand River Basin: Four Propositions, *Najibullah Loodin*

The Impacts of Power Outages on an Electricity Dependent Society: A Systematic Review, *Adam Andresen*

Bridging the gap? A Proposed Study Of The Effect Of Gateway And Reconnection Infrastructure On Gentrification And Displacement Indicators, *Collin Yarbrough*

Community-Based Risk Mapping Against Vector-Borne Disease Outbreak using Mobile phone Microscope and Geospatial Technology, *Ali Javed*

Establishing a Moral and Ethical Framework to Achieve Sustainable and Resilient Infrastructure, *Dennis Randolph*

Doing Bad Things for Good Reasons: An Examination of Unethical Pro-Organizational Behavior Among Professional Workers, *Kyle Payne*

Portrait of a Globally Conscious Engineer, *Dave Adams*

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