2025 USSD Kansas City Annual Conference

Fountains of Opportunity:
Create a Legacy

CONFERENCE SCHEDULE

2025 USSD Annual Conference and Exhibition

May 5-8, 2025 • Kansas City, MO

CONTENTS

MESSAGE FROM THE CONFERENCE CHAIR

My fellow dam and levee enthusiasts, the City of Fountains awaits! Join me in Kansas City for the USSD Annual Conference and Exhibition and make your mark. Let's create a legacy together!

To all my friends and colleagues, let me be the first to welcome you to the City of Fountains for the 2025 USSD Annual Conference and Exhibition. The USSD Annual Conference and Exhibition is more than just a meeting; it's a hub of innovation and collaboration. Come to Kansas City this May to be inspired, informed, and invigorated by the collective expertise of the dam and levee community. Together, we can create a legacy that inspires future generations!

Paul Eggers, P.E., PMP

McMillen

ABOUT KANSAS CITY

GETTING AROUND

The Link: The 880-foot Link provides weather-protected, lighted access between the Sheraton, Crown Center Shops, and Union Station

Kansas City Streetcar: A free streetcar service that runs along a 2.2-mile route through the heart of downtown, connecting popular destinations like River Market, Union Station, and Crown Center

THINGS TO DO

Recommendations from a Kansas City Local

Soccer:
Sporting KC
vs. LA Galaxy

Baseball:
Royals vs.
White Socks

Conference App

Check your email for an email from RD Mobile for your invitation to the mobile app! Don't see it or need assistance? Visit the registration desk!

Expo Directory

Visit the directory to see who has a booth for the 2025 Annual Conference and plan your Exhibit Hall meetings!

SAVE THE DATE: ***We hope to see you next year in Austin, TX May 4-7, 2026!***

GENERAL SCHEDULE

REGISTRATION

Sunday, May 4	4:00p – 6:00p	Terrace
Monday, May 5	7:30a – 5:00p	Terrace
Tuesday, May 6	7:15a – 5:00p	Terrace
Wednesday, May 7	7:15a – 2:00p	Terrace

GENERAL EVENTS

Sunday, May 4

USSD Board Mtg (open)	3:30p – 5:00p	Benton

Monday, May 5

Welcome Reception	6:00p – 7:30p	Exhibit Hall A
Opening Session & Legacy Lecture Lunch	12:00p – 2:00p	Exhibit Hall B
Exhibitor Welcome Meeting	5:00p – 5:30p	San Fran

Tuesday, May 6

Plenary Session	9:00a – 10:15a	Exhibit Hall A
Breakfast of Champions	7:45a – 8:45a	New York
YP Mentoring Lunch	12:00p – 1:20p	Terrace
USSD Annual Business Meeting	5:00p – 6:00p	New York

Wednesday, May 7

Awards	2:10p – 3:00p	Empire AB
Wrap Party	6:30p – 9:30p	J. Rieger

Thursday, May 8

Levee Field Tour: Pre Site Visit	8:00a – 9:30a	Empire AB
Levee Field Tour	9:30a – 1:30p	Bus Tour

FOOD & BREAKS

Monday, May 5

Continental Breakfast
7:30a – 8:30a, Terrace

Tuesday, May 6

Continental Breakfast
7:30a – 8:30a, Exhibit Hall A

Afternoon Break
2:45p – 3:00p, Exhibit Hall A

Lunch
12:00p – 1:20p, Exhibit Hall A

Wednesday, May 7

Continental Breakfast
7:00a – 8:00a, Exhibit Hall A

General Break
10:00a – 10:20a, Exhibit Hall A

Lunch
12:00p – 1:30p, Exhibit Hall A&B

Afternoon Break
3:00p – 3:15p, Exhibit Hall B

Thursday, May 8

Breakfast
7:15a – 8:00a, Terrace

Lunch
11:30a – 1:00p, Terrace
* *Thursday Afternoon Workshop and Field Tour Only*

COMMITTEE MEETINGS – MAY 5

	10:00–11:00	11:00–11:45	2:00–3:00	3:00–4:00	4:00–5:00	5:00–6:00	Room
Dam Safety							*Van Horn A/B*
Climate Resiliency							*Benton A*
Construction and Rehabilitation							*Benton B*
Dam Decommissioning							*Van Horn C*
Education and Training							*Benton B*
Environment and Sustainability							*Van Horn A/B*
Levees							*Benton A*
Foundations							*Chicago*
Monitoring of Dams and their Foundations							*Van Horn C*
Young Professionals							*Benton B*
Tailings Dams							*San Fran*
Public Safety, Security and Emergency Management for Dams							*Van Horn A/B*
Hydraulics and Hydrology					4:30		*Chicago*
Embankment Dams							*Van Horn A/B*
Concrete							*Benton A*
Awards							*Benton B*
Earthquakes							*Van Horn C*

TECHNICAL SESSIONS: TUESDAY, MAY 6

DAM SAFETY

Room: New York

10:30a – 10:55a	A Hierarchical Description of Risk Analysis Results
10:55a – 11:20a	Simplified SQRA Practicalities
11:20a – 11:45a	Critical Risk Drivers: Lessons Learned from an L3RA
11:45a – 12:10p	Integrating non-breach risk into dam and levee safety decisions
1:20p – 1:45p	Concrete Chute Spillway Incident during the 2023 Weber Dam Flood of Record
1:45p – 2:10p	Incorporating Structural Failure Mechanisms with Uncertainty in a Risk Assessment Including Earthquake-induced Loss of Reservoir Control
2:10p – 2:35p	Incorporating a Rockfill Dam Overtopping Failure Mechanism in a Risk Assessment

FOUNDATIONS

Room: Empire AB

10:30a – 10:55a	Predicting the time-rate of rock scour for spillways and overtopping dams: A practical approach based on the Erodibility Index Method and field observations
10:55a – 11:20a	Dam "Re"-commissioning – Converting an Aging Liability to a Community Asset.
3:45p – 4:10p	Find the Right Balance – Anchors vs. Mass Concrete for Uplift Resistance: Step 1 – Improve Foundation Characterization & Reduce Anchor Capacity Uncertainty

HYDRAULICS AND HYDROLOGY

Room: San Fran

10:30a – 10:55a	Fountains of Estimates: High-hazard dam spillways and their PMPs across the Mid-Atlantic Region
10:55a – 11:20a	Tiger Creek Regulator Spillway Replacement Alternative Selection and Design
11:20a – 11:45a	Modeling Transient Life Loss: A Spatial Sampling Approach for Downstream Consequences
1:20p – 1:45p	Adjusting to New Data – An Owner's Chronicle of the Effects of a PMP Study on a Portfolio of Dams
1:45p – 2:10p	Erodibility Methodology Applications for Complex Geometries using CFD

STUDENT SCHOLARSHIP INFORMATION

Room: Benton

10:30a – 12:10p	Three-Dimensional Seismic Stability of Earth Dams and Application to the Gatun Dam of the Panama Canal. ***Daniel Michael Muschett Henriquez, Purdue University*** Modeling Dam Overtopping: Remediation Using Biopolymer Mixed Soil ***Brock Huner, Auburn University*** Modeling Progression of Concentrated Leak Erosion in Dams and Levees ***Leila Rahimikhameneh, Auburn University*** Backward Erosion Piping: Evaluating Multiple Loading Effects and Head Loss Variability through Laboratory Experiments and Three-Dimensional Modeling ***Deepika Ghorasaini, Utah State University***
1:20p – 1:45p	Evaluating Failure Mechanisms of Mine Tailings Dams Under High Stress ***Ashley Woodward, Berkeley***

LEVEES

Room: Chicago

10:30a – 10:55a	Three-Dimensional Flow and Geometric Components of Backward Erosion Piping
10:55a – 11:20a	A Novel Technique for Levee Freeboard Determination in 2D HEC-RAS

CONCRETE

Room: Chicago

1:20p – 1:45p	Multi-Directional Effects in Seismic Analysis and Design of Concrete Hydraulic Structures
1:45p – 2:10p	Effect of Generalized Added Mass Matrix on Seismic Response of Concrete Dam with Inclined Surfaces
2:10p – 2:35p	Stability Analysis of an Historic Dry Stack Masonry Dam in New Hampshire

CONSTRUCTION AND REHABILITATION

Room: Empire AB

1:20p – 1:45p	Tunneling a West Virginia Dam: A Modern John Henry Story
1:45p – 2:10p	Construction of a Dam Safety Modification Project: an Oklahoma Case Study
2:10p – 2:35p	Extending Morris Sheppard Dam's Legacy with a Long-Term Testing and Repair Program
2:35p – 3:00p	Barrier Wall Construction for Moose Creek Dam Safety Modification

OTHER CONTEMPORARY ISSUES

Room: Benton

3:20p – 3:45p	Retrofitting Localized Sediment Management Systems at Dams for Maintaining Low Level Outlets
3:45p – 4:10p	Open-loop configurations for pumped-storage hydropower – saving the cost of a reservoir, but is it worth it?
4:10p – 4:35p	Uncovering Hidden Bias: The Role of Unconscious Bias in Management
4:35p – 5:00p	Understanding the Climate Change Effects on Fragility and Risk Analysis in Concrete Dams

PUBLIC SAFETY, SECURITY AND EMERGENCY MANAGEMENT FOR DAMS

Room: San Fran

3:20p – 3:45p	You Talkin' My Language??? Importance of Clear and Relatable Messaging in EAPs
3:45p – 4:10p	Public Safety in Dam Operations
4:10p – 4:35p	Enhancing Watershed Regional Resilience through Collaborative Holistic Risk Management
4:35p – 5:00p	Read The Dam Sign

SPECIAL TOPICS

Room: Chicago

3:20p – 3:45p	A Guideline for Design Progress on Dam and Hydraulic Structures Projects
3:45p – 4:10p	Multi-Generational Dams and Their Claim on Us
4:10p – 4:35p	A Programmatic Approach to Develop Recent Graduates as Dam Safety Engineers
4:35p – 5:00p	Read The Dam Sign

EARTHQUAKES

Room: New York

3:20p – 3:45p	Seismic Fragility for the Wanapum Dam Left Embankment
3:45p – 4:10p	M4.2 Earthquake Response of Oroville Dam

TECHNICAL SESSIONS: WEDNESDAY, MAY 7

CONCRETE

Room: New York

8:20a – 8:45a	Analysis of an existing headworks structure including the seismic interactions between the gate, structure, foundation, and reservoir.
8:45a – 9:10a	Sub-Modeling for Nonlinear FEM Seismic Analysis of Concrete Dams
9:10a – 9:35a	Investigation of Reservoir Modeling Approaches for the Seismic Response of Concrete Dams
10:20a – 10:45a	Designing a Labyrinth Spillway to Resist Ice Expansion and Accumulation
10:45a – 11:10a	Concepts for Managing Debris Flows at Hydro Projects in Nepal
11:10a – 11:35a	How does 3D roughness along concrete-rock interfaces affect the sliding stability of concrete gravity dams?
3:15p – 3:40p	Behavior of FRP Laminates under Flexure for Concrete Dam Retrofitting Based on Small- and Large-scale Tests
3:40p – 4:05p	Evaluation of the bond of FRP repairs in dam settings
4:05p – 4:30p	Concrete Dam Retrofitting using Carbon Fiber Reinforced Polymer Strands
4:30p – 4:55p	Bond Strength of Fiber Reinforced Polymer (FRP) Laminates Subjected to Hydraulic Conditions for Spillway Applications

CONSTRUCTION AND REHABILITATION

Room: Chicago

8:20a – 8:45a	Best Practices Using Blended Cements in Sustainable Infrastructure
8:45a – 9:10a	Steel Pipe, A Primer
9:10a – 9:35a	Soil Cement Slope Protection: What Has the Last 70 Years Taught Us?
9:35a – 10:00a	Advanced geomembranes systems for underwater rehabilitation: evolution and recent projects

HYDRAULICS AND HYDROLOGY

Room: San Fran

8:20a – 8:45a	Unveiling the Limits: Performing a SSPMP and Parameterizing a PMF Across the 73,000-Square-Mile Snake River Basin
8:45a – 9:10a	Hydrologic Model Validation in an Ungaged Arizona Basin Utilizing Streamgage Data Reconstruction
9:10a – 9:35a	An Interim Risk Reduction Spillway Inspection and Maintenance Program
9:35a – 10:00a	Potential Life-Loss Estimation with Uncertainty Using LifeSim for Mactaquac Dam Assessment

Room: New York

2:10p – 2:35p	Near and Far Field 3D CFD Modeling of the Mactaquac Upstream Fish Passage Facility
2:35p – 3:00p	Physical Modeling to Support the Design of Downstream Fish Passage at Trail Bridge Dam

Room: San Fran

3:15p – 3:40p	Model Calibration Strategies for Hydrologic Hazard Assessment of Coolidge Dam, Arizona
3:40p – 4:05p	A 2D/3D Hybrid CFD Model to Optimize Your Spillway Design
4:30p – 4:55p	Systematic Semi-Automated Breach Analysis of Long Embankment Structures

MONITORING OF DAMS AND THEIR FOUNDATIONS

Room: Empire AB

8:20a – 8:45a	No Time Like the Present – The Importance of Baselines
8:45a – 9:10a	Pressures In Karst Limestone Foundation During Tremie Concrete Placement of Secant Pile Barrier Wall
9:10a – 9:35a	West Silver Basin Dam - Five Years of Monitoring
9:35a – 10:00a	Using Technology to Map the Baseline Condition of a Slab and Buttress Dam: A Case Study at Tiger Creek Regulator Dam

EMBANKMENT DAMS

Room: Benton

10:20a – 10:45a	Gradational Effects on Residual Strength of Gravels
10:45a – 11:10a	Influence of Gravels on SPT Data for Liquefaction and Seismic Stability Assessment of Two High Hazard Embankment Dams
11:10a – 11:35a	Piezometers at Action Levels – Emergency or Not?
11:35a – 12:00p	Weak Rock: The Effect of Water Content on Strength and Deformation Properties
2:10p – 2:35p	Not Too Many, Not Too Few | The Goldilocks' Approach to 'just the right' Amount of Geotechnical Investigation for the Wild Horse Reservoir Project`
2:35p – 3:00p	Design of a Dam Crest Raise Using a Mechanically Stabilized Earth Wall

TAILINGS

Room: Chicago

10:20a – 10:45a	A Tale of Two Risk Guidelines: Applying Tailings Dam Risk Strategies to Water Dams
10:45a – 11:10a	A framework to evaluate geotechnical response to dewatering activities in CCR and tailings
11:10a – 11:35a	Performance evaluation of a tailings dam core transition from central to inclined configuration using numerical methods

Room: Empire AB

10:20a – 10:45a	North Michigan Creek Dam: Breathing Life into Aging Infrastructure Through Alternative Project Delivery
10:45a – 11:10a	A Progressive Design-Build Approach to Expedite the Replacement of Lake Conestee Dam
11:10a – 11:35a	The Flying Chute - A new concept that would eliminate hydrojacking potential failure modes in concrete spillway chutes being developed by the Bureau of Indian Affairs Safety of Dams Program.

Room: Chicago

2:10p – 2:35p	Lessons learned through the evolution of USACE Data Management Specifications applied to Dam Construction and Rehabilitation
2:35p – 3:00p	Bringing Grout Data to Life: A 3D User Interface for Improved Monitoring

DAM SAFETY	
Room: New York	
10:20a – 10:45a	Innovations in 3D Fluid-Solid Coupled Modelling of Rock Scour for Dam Safety
10:45a – 11:10a	Comparative Analysis of 2-D Stability Assessment for Concrete Gravity Dams: Insights from USACE, USBR, FERC, CDA and IS Standards
11:10a – 11:35a	Considerations for Designing an Erodibility Testing Program for Internal Erosion Risk Assessment
Room: San Fran	
2:10p – 2:35p	Novel Updates to Tropical Storm Remnant Precipitation Frequency Estimates for Enhanced Dam Safety Decision-Making in the Tennessee Valley
2:35p – 3:00p	Development of a Risk Management Plan for Mactaquac Dam
Room: New York	
3:15p – 3:40p	Dam Safety Life-Loss Estimates Based on Case Histories
3:40p – 4:05p	Key Considerations for Applying Consequences Analysis & Examples of Use
4:05p – 4:30p	21st Century Climate Challenges and Debris Disasters: How to assess debris models in the advent of record climate conditions and events
4:30p – 4:55p	Enhancing Dam Safety Instrumentation Review and Processing with Large Language Models (LLMs)

See Conference App for most up-to-date technical schedule

OTHER ACTIVITIES

MONDAY, MAY 5

WELCOME RECEPTION

6:00p – 7:30p, *Exhibit Hall A*

Kick off the conference with us in the Exhibit Hall Monday night. This Tailgate-themed party will give you a first look at the exhibit hall and a chance to catch up with friends before the technical program starts Tuesday morning.

Join the theme by wearing your favorite team's gear!

Support the Kim de Rubertis Student Scholarship Fund by making friendship bracelets- look for the USSD table.

TUESDAY, MAY 6

BREAKFAST OF CHAMPION ROUNDTABLE: EMPOWERING FUTURES TOGETHER

7:45a – 8:45a, *New York*

Join us for an inspiring morning as we come together to celebrate legacy, leadership, and the power of mentorship. The Breakfast of Champion Roundtable offers a unique opportunity to connect with changemakers, honor the contributions of past trailblazers, and support the next generation of scholars through our scholarship fund.

YOUNG PROFESSIONALS SOCIAL

5:30p – 7:00p, *Boulevard Brewing Company*

Join us for an evening designed exclusively for emerging leaders and innovators at the conference! The Young Professionals Social is your chance to connect with like-minded peers, share ideas, and build meaningful relationships in a fun and relaxed atmosphere.

This event is included with all Young Professional registrations.

Not a young professional but would like to attend to support our YPs? There are a limited number of non-YP tickets available for purchase with your conference registration.

WEDNESDAY, MAY 7

WRAP PARTY

6:30p – 9:30p, *J. Rieger*

Join us to celebrate a successful conference with food, cocktails, and a dueling piano band!

Bus transportation will be provided from the hotel, be sure to check the conference app for transportation details.

THURSDAY, MAY 8

LEVEE FIELD TOUR

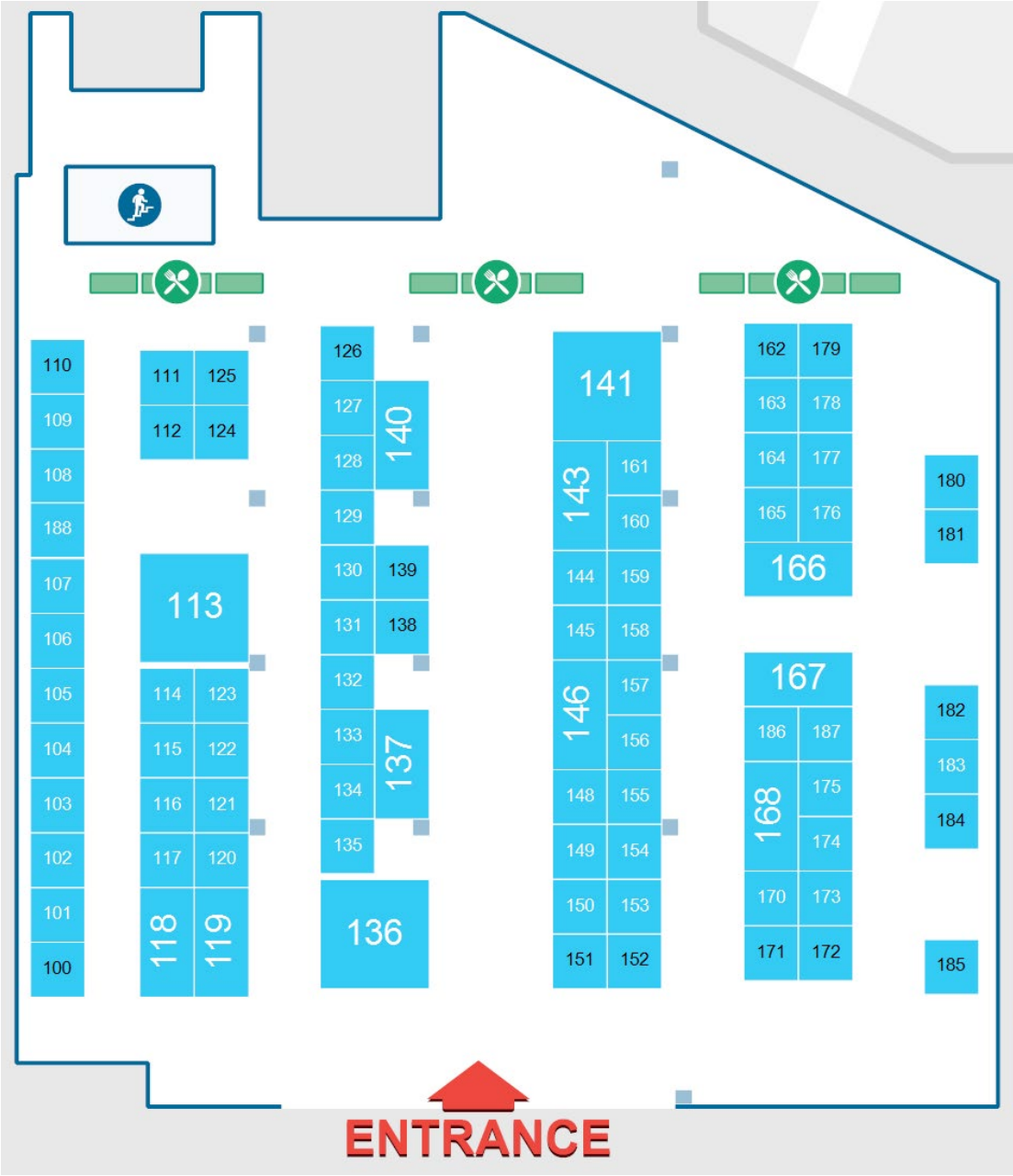
9:30a – 1:30p, *Bus Tour*

The U.S. Army Corps of Engineers (USACE) is currently constructing the $529M KC Levees mega civil works project along the Kansas River in Kansas City, KS that will significantly reduce flood risk to 30,000 people and $10B of infrastructure, including a nationally critical transportation, distribution, and rail hub.

The project includes two major aspects – structural improvements or full replacement of 13 pump stations and an average 5-foot raise to 17 miles of existing levees and floodwalls including 12 stoplog or sandbag closure structures within one of the largest rail hubs in the nation.

Tour participants will have an opportunity to visit various components of the project including pump stations, levee and floodwall improvements, and a stoplog closure structure.

EXHIBIT FLOORPLAN



Expo Directory

Expo Map

Exhibitor Move-In:

Monday, May 5 12:00p – 4:00p

Exhibitor Move-Out:

Wednesday, May 7 3:00p – 6:00p

WORKSHOPS

MONDAY, MAY 5

8:00a - 12:00p, *Chicago*

Sharpen, Speak, Succeed: The Proactive Professional's Toolbox – Part II

The workshop's interactive format will incorporate activities and group discussions to foster active engagement and promote peer learning. The workshop will include panels to provide a variety of viewpoints and activities to be completed both independently and in a group setting. Attendees will have a variety of opportunities through polling software and Q&A sessions to engage the presenters. Attendees will also be given a challenge for the conference to take what they learned with them to make their conference a success.

8:00a - 12:00p, *San Fran*

Technical Exchange Levees Workshop

Objectives of a technical exchange workshop for levees include:

1. Owner, Regulators, and private and government sector professional's role and challenges in implementing practices in the National Levee Safety Guidelines.
2. Sharing lessons learned from coastal levee design and construction.
3. Understanding and improving the implementation of key concepts within the National Levee Safety Guidelines.

THURSDAY, MAY 8

8:00a - 12:00p, *Benton*

Dam Failure Emergency Action Plan Tabletop Exercise and Scenarios Workshop

This interactive Dam Failure EAP Tabletop Exercise and Scenarios workshop will go over the three EAP levels, dam failure mechanisms, types of breach scenarios, and response actions. Participants will be broken into teams and engage in multiple simulated dam failure events each at different levels. The group will utilize initial presentation overview and incident command skills to immerse themselves into emergency situations while working as a team to understand various roles and actions. The workshops' goal is to educate participants, practice skills needed during a dam response/failure, and provide lessons learned.

1:00p - 5:00p, *Benton*

Aging Dam Infrastructure – Decommission or Rehabilitate Considering Economic, Climate Change and Sustainability Factors

The Workshop will be an open forum with activities to discuss challenges and solutions for evaluating aging dam infrastructure in a sustainable manner and considering climate change factors. Presentations will be brief to provide substantial time for Interactive breakout sessions and panel discussions. We envision panel discussions to include case studies from different regions of the US, highlighting both successful and unsuccessful practices in sustainable dam decommissioning. The Workshop will also include time for open discussions from Workshop participants which will include dam owners, regulators, and consultants.