### Sunday, April 19

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 pm - 6:00 pm</td>
<td>Registration Desk Open</td>
<td>Hyatt Lobby</td>
</tr>
</tbody>
</table>

### Monday, April 20

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 7:00 pm</td>
<td>Registration Desk Open</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>8:30 am - 10:30 am</td>
<td>Conference Opening Session: Legacy Lecture Series</td>
<td>Centennial F-H</td>
</tr>
<tr>
<td>Legacy of LeRoy Francis Harza — Dean of American Hydroelectric Engineers, James Lindell, Stantec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Advancement of the Engineering Practice for Concrete Dams, Kenneth Hansen, Consultant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 am - 11:00 am</td>
<td>Break</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>11:00 am - 12:00 noon</td>
<td>Conference Opening Session: Legacy Lecture Series, continued</td>
<td>Centennial F-H</td>
</tr>
<tr>
<td>Audience Q&amp;A , facilitated by Michael Rogers, Stantec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Remarks, James Lindell and Kenneth Hansen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closing Statements, Larry Nuss, Nuss Engineering, LLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30 pm - 3:30 pm</td>
<td>Committee Meetings Session 1</td>
<td>Various</td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Break</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>4:00 pm - 6:00 pm</td>
<td>Committee Meetings Session 2</td>
<td>Various</td>
</tr>
<tr>
<td>6:00 pm - 7:30 pm</td>
<td>Welcome Reception</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Tribute to Kim DeRubertis Reception</td>
<td>Mineral Foyer</td>
</tr>
</tbody>
</table>

### Tuesday, April 21

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 6:00 pm</td>
<td>Registration Desk Open</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>7:15 am - 8:15 am</td>
<td>USSD Town Hall: Ask the Board</td>
<td>Centennial F</td>
</tr>
<tr>
<td>7:15 am - 8:15 am</td>
<td>Continental Breakfast in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>8:30 am - 10:15 am</td>
<td>Plenary Session 1</td>
<td>Capitol Ballroom</td>
</tr>
<tr>
<td>10:15 am - 10:45 am</td>
<td>Break in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>10:45 am - 12:15 pm</td>
<td>Concurrent Technical Sessions Track 1</td>
<td>Various</td>
</tr>
<tr>
<td>1A Concrete Dams I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1B Embankment Dams I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1C Hydraulics &amp; Hydrology I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1D Tailings Dams I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1E Scholarship Finalist Presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactive Presentations I: Earthquakes and Construction &amp; Rehabilitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:15 pm - 1:30 pm</td>
<td>Lunch in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>1:30 pm - 3:30 pm</td>
<td>Concurrent Technical Sessions Track 2</td>
<td>Centennial F</td>
</tr>
<tr>
<td>2A Concrete Dams II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B Embankment Dams II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2C Sustain or Decommission: The Future for a Dam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D Monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2E Dam Safety I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactive Presentations II: Hydraulics &amp; Hydrology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Break in Exhibit Hall</td>
<td>Various</td>
</tr>
<tr>
<td>4:00 pm - 6:00 pm</td>
<td>Committee Meetings Session 3</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>6:00 pm - 7:30 pm</td>
<td>Exhibitor Reception</td>
<td>Various</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Young Professional/First-Time Attendee Networking Social</td>
<td>Live @ Jack’s, Denver Pavilions, 500 16th St.</td>
</tr>
<tr>
<td>7:30 pm - 9:30 pm</td>
<td>Welcome Reception</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Tribute to Kim DeRubertis Reception</td>
<td>Mineral Foyer</td>
</tr>
<tr>
<td>8:30 pm - 9:30 pm</td>
<td>Welcome Reception</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Young Professional/First-Time Attendee Networking Social</td>
<td>Mineral Foyer</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Welcome Reception</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Young Professional/First-Time Attendee Networking Social</td>
<td>Mineral Foyer</td>
</tr>
<tr>
<td>7:30 pm - 9:00 pm</td>
<td>Welcome Reception</td>
<td>Centennial Ballroom</td>
</tr>
</tbody>
</table>
## Wednesday, April 22

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 5:00 pm</td>
<td>Registration Desk Open</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>7:15 am - 8:15 am</td>
<td>Continental Breakfast in Exhibit Hall</td>
<td>Centennial Foyer</td>
</tr>
<tr>
<td>8:30 am - 10:15 am</td>
<td>Plenary Session 2</td>
<td>Capitol Ballroom</td>
</tr>
<tr>
<td>10:15 am - 10:45 am</td>
<td>Break in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>10:45 am - 12:15 pm</td>
<td>Concurrent Technical Sessions Track 3</td>
<td>Centennial F, Centennial G, Centennial H, Mineral DE, Mineral FG, Mineral ABC</td>
</tr>
<tr>
<td>12:15 pm - 1:30 pm</td>
<td>Lunch in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>1:30 pm - 3:30 pm</td>
<td>Concurrent Technical Sessions Track 4</td>
<td>Centennial F, Centennial G, Centennial H, Mineral DE, Mineral FG, Mineral ABC</td>
</tr>
<tr>
<td>3:30 pm - 4:00 pm</td>
<td>Break in Exhibit Hall</td>
<td>Centennial Ballroom</td>
</tr>
<tr>
<td>4:00 pm - 6:00 pm</td>
<td>Concurrent Technical Sessions Track 5</td>
<td>Centennial F, Centennial G, Centennial H, Mineral DE, Mineral FG, Mineral ABC</td>
</tr>
<tr>
<td>5:30 pm - 6:30 pm</td>
<td>USACE TownHall Meeting</td>
<td>Mineral ABC</td>
</tr>
<tr>
<td>6:30 pm - 9:30 pm</td>
<td>Wrap Party (ticketed)</td>
<td>History Colorado Center</td>
</tr>
</tbody>
</table>

## Thursday, April 23

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am - 2:00 pm</td>
<td>Workshop Registration Desk Open</td>
<td>Mineral Foyer</td>
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<tr>
<td>8:00 am - 5:30 pm</td>
<td>Concurrent Workshops</td>
<td>Mineral A</td>
</tr>
<tr>
<td>8:00 am - 5:00 pm</td>
<td>1. Communication during the “Golden Hour” — Risk and Crisis Communication Strategies for Dam Safety</td>
<td>Mineral BC</td>
</tr>
<tr>
<td>8:30 am - 4:30 pm</td>
<td>2. Probabilistic Flood Hazard Analysis</td>
<td>Mineral DE</td>
</tr>
<tr>
<td>8:15 am - 4:30 pm</td>
<td>3. Earthquake Shaking and Ground Failure Hazards for Dams, including Automated Real-time Inspection Prioritization</td>
<td>Granite</td>
</tr>
<tr>
<td>8:00 am - 12 noon</td>
<td>4. Tailings Dam Safety Management and Engineer of Record</td>
<td>Mineral FG</td>
</tr>
<tr>
<td>1:00 pm - 5:00 pm</td>
<td>5. Evaluation Principles for the Monitoring of Dams and Their Foundations</td>
<td>Mineral FG</td>
</tr>
<tr>
<td>11:30 - 1:00 pm</td>
<td>Lunch (times vary for each workshop)</td>
<td>Capitol Ballroom 1-4</td>
</tr>
</tbody>
</table>

## Friday, April 24

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am - 12 noon</td>
<td>Field Tours Note: morning and afternoon field tours are identical</td>
<td></td>
</tr>
<tr>
<td>1:00 pm - 5:00 pm</td>
<td>Bureau of Reclamation Laboratories Field Tour (extra charge)</td>
<td></td>
</tr>
</tbody>
</table>
1A: Concrete Dams

**Room: Centennial F**
Moderators: Aled Hughes, Stantec; and Guy Lund, Gannett Fleming, Inc.

- Determination of a Concrete Dam's Dynamic Properties from Ambient Responses at Gross Reservoir Expansion Project
  - Michael F. Rogers, Stantec
  - Jose Felipe Garcia, Stantec
  - Jeff Martin, Denver Water

- Designing the World’s Tallest Roller-Compacted Concrete Dam Raise for the Gross Reservoir Expansion Project
  - Mohammadreza Mostafa, Michael F. Rogers, Stantec

- C-43 Reservoir-Geotechnical Engineering Design Considerations
  - Kevin Aubry, Terracon Consultants, Inc.
  - Joseph Albers, South Florida Water Management District
  - Jamie Velez, Terracon Consultants, Inc.
  - Partha Ghosh, AECOM

- Final Design of Eagle Canyon Dam and Debris Basin
  - Samalingam Balachandran, GENTERRA Consultants, Inc.
  - Joseph Kulikowski, GENTERRA Consultants, Inc.
  - Shuyu Liu, GENTERRA Consultants, Inc.
  - Robert Cullen, Riverside County Flood Control & Water Conservation District

- Characterization of Soil-Cement for Use in an Embankment Dam Seismic Stability Shear Key
  - Robert Rinehart, USBR
  - Gergo Arany, USBR
  - Richard Bearce, USBR
  - Evan Lindenbach, USBR

- System Safety Approach for Tailings Dams Management
  - Sebnem Duzgun, Colorado School of Mines

1B: Embankment Dams

**Room: Centennial G**
Moderators: Robert Bowers, Ramboll; and Justin Stoeber, AECOM

- More Flow, More Dissipation: Using a Labyrinth Weir with a Baffle Chute Spillway at Zorinsky Basin No. 2
  - Adrian Strain, HDR
  - John Engel, HDR

- 2D Dam Breach Modeling with a Subterranean River Reach
  - Ben Cary, Kleinschmidt Group
  - Dan Olmstead, Eugene Water and Electric Board

- A Novel Stilling Basin for a Steep, Stepped Spillway: the Gross Reservoir Expansion Project
  - Christopher Thornton, Colorado State University
  - Robert Ettema, Colorado State University

- Rockfill Dam Construction Challenges at the Neelum Jhelum Hydroelectric Project
  - Joseph Kovachich, Stantec
  - Melik Salman Ahsan, National Engineering Services Pakistan (Pvt) Limited
  - Haroon Rasheed, National Engineering Services Pakistan (Pvt) Limited

- Condition Assessments in Managing a Diverse Portfolio of Aging Dams
  - Brian McCormick, Colorado Springs Utilities
  - Winnie Kim, Stantec
  - Don Montgomery, Stantec

1C: Hydraulics & Hydrology

**Room: Centennial H**
Moderators: Brian Cookson, Utah State University; and Greg Paxson, Schnabel

- Earthquakes
  - Dynamic Analyses of Liquefaction at Palinus Road During the Canterbury Earthquake Sequence
    - Patrick C. Bassal, University of California, Davis
    - Ross W. Boulanger, University of California, Davis
    - Brady R. Cox, University of Texas

1D: Tailings Dams

**Room: Mineral DE**
Moderators: Carmen Bernedo, Stantec; and Jason Harvey, Barr Engineering Co.

- Earthquakes
  - Dynamic Analyses of Liquefaction at Palinus Road During the Canterbury Earthquake Sequence
    - Patrick C. Bassal, University of California, Davis
    - Ross W. Boulanger, University of California, Davis
    - Brady R. Cox, University of Texas

Interactive Presentations I

**Mineral ABC**

- Construction
  - Release Relief - Fixing 100 Year Old Dam Valves
    - Brian Hamrick, Wood

- Material Ageing – Key Criteria for Dam Waterproofing Systems
  - Stefan Lemke, Renesco Inc

- Suggestions for Selecting Methodology and Equipment for Delivery And Placing of Concrete on Concrete Dams
  - Goran Vujasinovic, CTS International

- Aging Concrete Dams - Causes of Deterioration and Methods of Rehabilitation
  - William Black, Meal & Hunt

- Guajataka Spillway Failure
  - Chad Gillan, USACE

- Lessons Learned from High Mountain Dam Construction Projects

- Rockfill Dam Construction Challenges at the Neelum Jhelum Hydroelectric Project
  - Joseph Kovachich, Stantec
  - Melik Salman Ahsan, National Engineering Services Pakistan (Pvt) Limited
  - Haroon Rasheed, National Engineering Services Pakistan (Pvt) Limited

- Condition Assessments in Managing a Diverse Portfolio of Aging Dams
  - Brian McCormick, Colorado Springs Utilities
  - Winnie Kim, Stantec
  - Don Montgomery, Stantec

- Validating Nonlinear Seismic Analysis of Dam-Foundation-Reservoir System with Foundation Cyclic Symmetry
  - Ali Rasekh, Kohn Crippen Berger Ltd.
Introducing Outcomes from ICOLD 15th International Benchmark Workshop on Numerical Analysis of Dams - Seismic Analysis of Pine Flat Concrete Dam

Moderators: Mohammad Hariri Ardebili, University of Colorado; and Stewart Voghtli, Gannett Fleming

Gannett Fleming
Colorado; and Stewart Vaghti, Moderator: Mohammad

Two-Dimensional Modeling of the Ka Loko Dam Failure

Omed Yousif III, University of Nevada, Las Vegas

Ahang Ali, University of Sulaimani

Stepped Spillways

Slopes of Steps on Flow over Hydraulics & Hydrology

Brent Bergman, BC Hydro

Osmar Penner, BC Hydro

Load Method

Dams Design with Trial-Analysis

A Half Century of Arch Dams Design with Trial-Load Method

Glen Tarbox, Stantec

Larry Nuss, Nuss Engineering, LLC

Jonah’s Perspectives

Perspective

Li Yan, BC Hydro

Maxim Li, BC Hydro

Charissa Anderlini, BC Hydro

Internal Erosion: Dam Safety, State-of-Practice, and Advancing the State-of-Art

Jonathan Fannin, University of British Columbia

Maxim Li, BC Hydro

Emergency Repairs to a 150+ Year-Old Dam in a Sensitive Environment

Grady Hillhouse, Freese and Nichols, Inc.

Doug Byrnum, Texas State University

Predicted Sediment Transport for Operations at Nolanville Dam

Filip Bressan, WEST Consultants

Martin Teal, WEST Consultants

Curtis Jawdy, TVA

New Guidelines and Processes for Development of Additional Water Storage in the U.S.

Kolly Ranney, HDR

Blaine Dwyer, HDR

A New Sediment Modeling, Monitoring and Forecasting Framework for Dam Removal Based on Lessons Learned from Elwha River Restoration Experience

Jennifer Bountray, USBR

Timothy Randle, USBR

Chris Bromley, Scottish Environment Protection Agency

Cath Lorna, Northern University

Mill Pond Dam Removal and Habitat Restoration– The Unbreakable Stream

Lloyd Dixon, Seattle City Light

Coming Full Circle: Anchoring Down and Lifting Off at Lock #27

Bryan Borkauskas, Nicholson Construction

Tony Martinez, Nicholson Construction

Fully Grouted and Vibrating Wire Piezometer Installations in Artesian and Karst Conditions at Mosul Dam

Georgette Hlepas, USACE

Vietton Panigagua, USACE

Maximo Malavolta, Trevi

Innovations in Dam Instrumentation Monitoring to Reduce Risk

Loring Crowley, Schnabel Engineering

Zachary Ostrom, Schnabel Engineering

Todd Roberts, sensorsmatics

Alex Duttridge III, Schnabel Engineering

Mark Landis, Schnabel Engineering

Practical Aspects of the use of Synthetic Aperture Radar for Dam Safety Monitoring Based on Three Years of Ground Truth

William Empson, USACE

David Cohen, Neva Ridge Technologies

Sarah Gamm, National Geospatial-Intelligence Agency

Baron Worsham, USACE

Georgette Hlepas, USACE

Wire Piezometer Installations for Operations at Lock #27

Tony Martinez, Nicholson Construction

Fully Grouted and Vibrating Wire Piezometer Installations in Artesian and Karst Conditions at Mosul Dam

Georgette Hlepas, USACE

Vietton Panigagua, USACE

Maximo Malavolta, Trevi

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David Cohen, Neva Ridge Technologies

Sarah Gamm, National Geospatial-Intelligence Agency

Baron Worsham, USACE

Sean Yarnag, Neva Ridge Technologies

Non-Destructive Evaluation (NDE) for Condition Assessment of Concrete Dams

Larry Olson, Olson Engineering, Inc.

Lyndsay Hazeldin, Olson Engineering, Inc.

Development of a Hydrologic Database to Inform Future Spillway Designs and Risk Analyses

Kevin Ruswick, Schnabel

Elizabeth Isenstein, Schnabel

Calibration through Transposition: Case Study: Cedar Rapids Iowa

Nicholas Thomas, HDR

Andy McCoy, HDR

Successful Hydrologic Dam Safety Modeling for the Largest Corps Reservoir

Katherine Werner, USACE

Are Storms Changing and What Does This Mean for PMP?

Bill Kappel, Applied Weather Associates

Doug Hultstrand, Applied Weather Associates

Geoff Muhlestein, Applied Weather Associates

Jake Rodel, Applied Weather Associates

Kristi Steinherker, Applied Weather Associates

Evaluating Dam Safety Incidents in a Risk Assessment Framework

Attica Reza Firoozfar, HDR

Hamid Reza Firoozfar, University of Tehran

Keith Moen, HDR

FEMA Dam Safety Technical Assistance Program

Molly Finster, Argonne National Laboratory

Preston Wilson, FEMA

Jose Lara, California OES

Lesley Edgemon, Argonne National Laboratory

Kyle Pfeiffer, Argonne National Laboratory

Interactive Presentations II

Hydraulics & Hydrology

Levee Certification: How Advanced Engineering Techniques Can Save $$$

Brad Bettag, Wood

Chris Ide, Wood

Thuy Patton, Colorado Water Conservation Board

CFD Modeling for Spillway Assessments

Benjamin Israel Devadason, Gannett Fleming

Paul Schweiger, Gannett Fleming

Missouri River Levee 2D HEC-RAS Breach Inundation Modeling

Dan Jones, USACE

Ben Lorenzen, USACE

After the Flood – Modeling Levee Breach Affected Areas in the Missouri River Valley

Andrew McCoy, HDR

Rusty Jones, HDR

Dave Claman, Iowa DOT

Bill Kaufman, Iowa DOT

VBA-Based Tool Keeps Dam Operators Ahead of the Curve

Jesse Potrowski, Mead & Hunt

Shawn Puzen, Mead & Hunt

Nick Hathaway, Mead & Hunt

Jen Schwartz, Mead & Hunt

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Mineral ABC

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Andy McCoy, HDR

Successful Hydrologic Dam Safety Modeling for the Largest Corps Reservoir

Katherine Werner, USACE
### Interactive Presentations III

#### Embankment Dams
- **Constant Volume Ring**
- **Strength Interpretation of Foundation Sands at Duncan Dam**
- **Seismic Stability Analysis of an Embankment Dam**

#### Levees
- **Vision-Based Inspection and Health Assessment of Levees**
- **Erosion Resistance**
- **Rehabilitation Design for Dispersive Soil in Levees**

#### Foundations
- **Evaluating Rock Foundations Beneath Aging Large Concrete Dams: Two Case Studies from British Columbia, Canada**
- **Treating Excessive Seepage at the Dam Abutment of the Neelum Jhelum Hydroelectric Project**
- **Implications of the 2011 and 2019 Flood Events**

### Mineral ABC

- **The Consequence of Over Simplification of Seepage Models**
- **Erosion Resistance Evaluation of Biopolymer Enhanced Levee by Full Scale Experiments**
- **Rehabilitation Design for Dispersive Soil in Levees**
- **An Experimental Study Using a Real-scale Model Test on the Effect of Biopolymer-mixed Soils on Levee Stability against Overflow Breach**

### Earthquake Engineering for Concrete Dams
- Anil K. Chopra, University of California, Berkeley

### Direct FE Method for Nonlinear Earthquake Analysis of Concrete Dams – Methodology
- Arne J. Løkke, Norwegian Geotechnical Institute

### Ground Motion Selection for Nonlinear Response History Analyses of Concrete Dams
- N. Simon Kwong, The Cooper Union for the Advancement of Science and Art

### Guajataca Dam:
- Construction of Intreim Risk Reduction Measures
- Michael Miller, USBR
- Jose Bermudez, PREPA
- John Kendall, USBR

### Guajataca Dam: Emergency Response and Risk Informed Design
- Gregg Batchelder Adams, USBR

### Utilizing Innovative Concrete Techniques to Construct Complex Spillway Structures
- James Murphy, Gannett Fleming, Inc.
- Timothy Weber, Gannett Fleming, Inc.

### Cheeseman Dam Upstream Control: Hydraulic System Failure Analysis
- Antonio Flori, Denver Water
- Jeff Archer, Denver Water

### Fake vs. Fact: How to Harness the Power of Social Media to Effectively Communicate with the Public and Press During a Dam Crisis
- Jes Gearing, Gannett Fleming

### EAPS for Levees, a Cost Effective Way to Reduce Life Safety Risk for Levees
- Thomas Terry, USBR
- Todd Kilpatrick, Levee District 12

### Validating HEC-LifeSim 2.0: Lessons Learned from Application on Historic Events
- Jason Needham, USBR
- Woodrow Fields, USBR

### Performance Monitoring Instrumentation for Mine Tailings Facilities
- Robert Hackus, Geosyntec Consultants
- Robert Snow, D’Appolonia Consultants

### Monitoring the Impacts of a Tailings Dam Failure Using Satellite Images
- Gurbet Gurkan, Colorado School of Mines
- Jaime Maraga, Colorado School of Mines

### An Overview of Probabilistic Methods for Stability Analysis of Tailings Dams
- Natalie Soares Rodrigues, Colorado School of Mines

### Update on the National Dam Safety Levee Initiative
- Phoebe Percell, USACE

### Little Falls in Name Only - Understanding Big Asset Risks for a Low Hazard Dam
- M. Jonathan Harris, Schnabel Engineering

### Evaluating Complex Systems as Part of a Semi-Quantitative Risk Assessment
- Eric Halpin, Halpin Consultants

### An Experimental Study Using a Real-scale Model Test on the Effect of Biopolymer-mixed Soils on Levee Stability against Overflow Breach
- Hyoseop Woo, Gwangju Institute of Science and Technology

### The Spencer Dam Failure Investigation
- Mark Baker, Dam Crest Consulting

### Little Falls in Name Only - Understanding Big Asset Risks for a Low Hazard Dam – M. Jonathan Harris, Schnabel Engineering

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**Wednesday, April 22 — 10:45 am - 12:15 pm**

**CONCURRENT SESSIONS — TRACK C**

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<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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<td>3A: Concrete Dams III</td>
<td>USBR; Hillery Vernturini, Moderators: Jerzy Salamon, Paul GeoTeck Engineering; and Justin Williams, Stantec</td>
<td>Xuan Wu, Stantec Inc.; Pu Yang, Stantec Inc.; Yixuan Sun, Stantec Inc.</td>
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<tr>
<td>3B: Construction &amp; Rehabilitation I</td>
<td>USBR; and Hillery Vernturini, Moderators: David Paul, Paul GeoTeck Engineering; and Justin Williams, Stantec</td>
<td>Sam Abbaszadeh, Stantec Inc.</td>
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<tr>
<td>3C: Emergency Preparedness</td>
<td>USBR; and Hillery Vernturini, Moderators: Sharon Krock, Schnabel; and Yulia Zakrevskaya, Stantec</td>
<td>Lucy Philip, Stantec Canada</td>
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<td>3D: Tailings Dams II</td>
<td>USBR; and Hillery Vernturini, Moderators: Benjamin Schmidt, Golder; and Sebnem Duzgun, Colorado School of Mines</td>
<td>Michael Hughes, AECOM; Mehrashk Meidani, AECOM; Robert Bachus, Geosyntec Consultants; and Emily Schwartz, Black &amp; Veatch</td>
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<td>3E: Dam Safety II</td>
<td>USBR; and Hillery Vernturini, Moderators: Kathleen Bensko, FERC; and Emily Schwartz, Black &amp; Veatch</td>
<td>Anil K. Chopra, University of California, Berkeley; and Hillery Vernturini, Moderators: Jerzy Salamon, Paul GeoTeck Engineering; and Justin Williams, Stantec</td>
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5A: Earthquakes (Concrete)

Room: Centennial F

Moderators: Najib Bouaanani, Polytechnique Montreal; and Alex Walsh, Gannett Fleming

5B: Construction & Rehabilitation III

Room: Centennial G

Moderators: Michael Miller, JWF Consulting LLC; and Nick Patch, Clark Bros. Inc.

5C: Embankment Dams III

Room: Centennial H

Moderators: John France, Gannett Fleming, Inc.; and Joels Malama, USBR

5D: Public Safety

Room: Mineral DE


5E: Foundations

Room: Mineral FG

Moderators: Bryan Simpson, USBR; and Andrew Little, HDR

Wednesday, April 22 — 4:00 pm - 6:00 pm

CONCURRENT SESSIONS — TRACK 5

Prediction of Hydrodynamic Loads on Dams and Spillway Gates - Preliminary Findings from a Physical Test Facility
Josh Mortensen, USBR
Jerzy Salamon, USBR

Evaluation of Seismic Hazard for Ghazi-Barotha Hydropower Project of Pakistan
Muhammad Usman, National University of Sciences and Technology
Muhammad Zain, National University of Sciences and Technology
Qazi Mubasher Maqsood, Water and Power Development Authority of Pakistan
Altaf Iqbal, Associated Consultants (Pvt) Ltd.
Zahid Shehzad, Water and Development Authority of Pakistan
Ashar Khan, Water and Power Development Authority of Pakistan

On the Effects of Vertical Earthquake Accelerations on Seismic Demands Within Dams and Appurtenant Structures
Najib Bouaanani, Polytechnique Montreal
Sayouba Tinta, Polytechnique Montreal
Siamak Ohadi, Polytechnique Montreal

Case Studies on the Seismic Performance of Vertical Lift Gates
Cee Chan, Hatch
James Rutherford, Hatch

Seismic Stability Assessment of Morning-Glory Structures Including Rocking and Rebar Debonding
Maximiliano Mantola, Hatch
John Werner, Hatch
James Rutherford, Hatch
Colleen Woods, Hatch

12 Lessons Learned From 12 Years of Rehabilitating Small Urban Embankment Dams
Jeff Blass, AECOM

An Innovative Soil-Cement Gravity Design
Pete Nix, Tetra Tech

Best Value Procurement Process for the Chimney Hollow Reservoir Project
Joe Donnelly, Northern Water
Jeff Drager, Northern Water
Chris Mueller, Black & Veatch
Jeff Bair, Black & Veatch
David Bentler, Black & Veatch
Don Montgomery, Stantec

QA/QC in Dam Safety Construction Projects: Check the Box and Forget it or Something Actually Worth Careful Consideration?
Frank Blackett, FERC

Construction Risk Management and Contingency Budget Allocation for Hydraulic Asphalt Core Rockfill Dam
Mark Thompson, Black & Veatch
David Bentler, Black & Veatch
Joe Donnelly, Northern Water
Don Montgomery, Stantec

West Silver Basin Dam - A Rockfill Dam with Asphaltic Concrete Central Core
Michael Zusi, AECOM
Bill Snyder, AECOM
Daniel Swanson, AECOM
Jose Martinez, Freeport-McMoRan Morenci Inc. USA

Hydro-Québec Experience in Asphalt Core Dams And Dykes: A Great Accomplishment After Five Years of Impoundment
Jean-Pierre Tournier, Hydro-Québec
Roxane Savard, Hydro-Québec
François Ferland, Hydro-Québec

Asphalt Core Embankment Dams (ACED) - Why, Where and How?
David Wilson, WALO USA
Damian Mueller, WALO International AG

An Update on the Chimney Hollow Hydraulic Asphalt Core Rockfill Dam
Donald Montgomery, Stantec
Christine Weber, Stantec
Wonnie Kim, Stantec

Public Safety Signage - Best Practices
Paul Meeks, Worthington Products Inc.

Improving Public Safety at Low Head Dams
Paul Schweiger, Gannett Fleming
Steve Davidheiser, Gannett Fleming

Creation of a Database of Low-Head Dams in the U.S.
Rolin Hotchkiss, Brigham Young University

Effective Emergency Exercise Planning Practices
Kelly Strife, Gannett Fleming
Alicia Baehr, Gannett Fleming

Moccasin Dam Flood Event, March 22, 2018 – Damage Assessment, Engineering Design and Construction of Interim Repair and Improvement
Ted Allen, San Francisco PUC
Jimmy Leong, San Francisco PUC

2017-2019 Investigations of Subsurface Conditions at Mosul Dam
Georgette Hlepas, USACE

Integrating Dam Safety Risk into the Dam Site Exploration Framework for Design Projects
Derek Morley, Geosyntec Consultants
Brandon Lanthier, Geosyntec Consultants
Holly Nichols, California DWR

Failure, Emergency Response, Mitigation, and Engineering Geology of Guajataca Dam

Spillway, Puerto Rico
Todd Loar, USACE

Dan Meier, AECOM
Erik Newman, AECOM
Doug Yadon, AECOM
Pablo Virreira, Denver Water

Charaterization and Evaluation of Potentially Movable Rock Blocks for Foundation Stability Analyses at the Gross Reservoir Expansion Project

Eric Newman, AECOM
Dan Meier, AECOM
Doug Yadon, AECOM
Pablo Virreira, Denver Water