



# Annual Meeting and Conference

April 3-7, 2017  
Anaheim, California

## Monday, April 3

7:00 am - 5:30 pm	Registration Desk Open	Marriott Hotel
7:00 am - 8:45 am	Committee Chair/Vice Chair Breakfast with the Board	Marriott Hotel
9:00 am - 4:30 pm	Committee Meetings	Marriott Hotel
5:00 pm - 6:00 pm	<p><b>Opening Session: Celebrating the Best of USSD</b></p> <p><i>Introduction of the 2017 Lifetime Achievement Award Recipient</i></p> <p><i>Nine Years, Kim DeRubertis, Consultant, 2016 USSD Lifetime Achievement Award Recipient</i></p>	ACC Room 204
6:00 pm - 8:00 pm	Kickoff Reception	Exhibit Hall, ACC

## Tuesday, April 4

7:00 am - 5:00 pm	Registration Desk Open	ACC 3rd Floor Foyer
7:00 am - 8:00 am	Continental Breakfast	Exhibit Hall, ACC 3rd Floor
8:00 am - 10:00 am	<p><b>Plenary Session: It's a Small World — Celebrating our National Relationships</b></p> <p><i>Welcome and Introductions, John Wolfhope, USSD President, Freese and Nichols, Inc.</i></p> <p><i>The Development of California's Water System and Water Management in California, David Gutierrez, GEI Consultants, Inc.; and Leslie Harder, HDR</i></p> <p><i>Post-Liquefaction Strength for Dams, Raymond B. Seed, University of California at Berkeley</i></p> <p><i>Leadership Perspectives from a Young Professional, Nicolas von Gersdoff, Southern California Edison</i></p>	ACC Room 204
9:30 am - 10:00 am	Refresh Break	Exhibit Hall, ACC
10:30 - 12 noon	<p><b>Plenary Session: It's a Small World — Celebrating our International Relationships</b></p> <p><i>International Milestone High Concrete Dam Project Award Michael F. Rogers, MWH, now a part of Stantec, and ICOLD Vice President</i></p> <p><i>Columbia River Treaty Changes in 2024, Peter Dickerson, U.S. Army Corps of Engineers (USACE)</i></p> <p><i>Large-Scale Hydropower Development in Mexico: The Dams of the Santiago River, Humberto Marengo Mogollón, Mexico, ICOLD National Committees of the Americas</i></p> <p><i>Korea's Advanced Approach to Integrated Dam Safety Management, Dong-Hoon Shin, K-Water</i></p>	ACC Room 204
12 noon - 1:15 pm	Lunch — Awards and Recognitions	ACC Ballroom A, 3rd Floor

# Tuesday, April 4

1:30 pm - 5:30 pm	Concurrent Technical Sessions	3rd Floor ACC
<b>Track A</b> Session 1A: Conference Theme ACC Room 304A	<b>Track B</b> Session 1B: Physical Modeling ACC Room 304B	<b>Track C</b> Session 1C: Risk ACC Room 304C
*Young Professional		
<p>Moderators: <b>David Gutierrez</b>, GEI Consultants, Inc.; and <b>John Osterle</b>, RIZZO Associates</p> <p><i>Reservoir Sedimentation and Sustainability</i>, <b>Timothy Randle</b>, <b>Sean Kimbrel</b> and <b>Kent L. Collins</b>, Bureau of Reclamation</p> <p><i>Dam Safety and Resilient Water Management: A Case for Dynamic Reservoir Operations</i>, <b>Michael McMahon</b>, HDR</p> <p><i>The Nebraska Department of Natural Resources Coordinated Efforts in Flood Flows</i>, <b>Kristen Obermueller*</b>, <b>Bob Beduhn</b> and <b>John Engel</b>, HDR</p>	<p>Moderators: <b>James Lindell</b>, MWH, now part of Stantec; and <b>Chandra Pathak</b>, USACE</p> <p><i>Linear Weir Size Scale Effects: A look at Flat Top Weirs</i>, <b>Blake Tullis</b>, Utah State University; and <b>Kedric Curtis*</b>, Jones and Demille Engineering</p> <p><i>Physical Model of Spillway and Reservoir Debris Interaction</i>, <b>Kent Walker</b>, <b>Jaron Hasenbalg</b> and <b>Kelly Brom</b>, Bureau of Reclamation</p> <p><i>Boundary Dam Spillway No. 1 TDG Modifications</i>, <b>John Werner*</b> and <b>James Rutherford</b>, Hatch; <b>Andrew Bearlin</b>, Seattle City Light; <b>Peter Friz</b> and <b>Jeff Johnson</b>, Hatch; <b>Daniel Kirschbaum</b>, Joe Groeneveld, Seattle City Light; and <b>Justin Arnold</b>, Alden Hydraulic Laboratories</p>	<p>Moderators: <b>Dean Durkee</b>, Gannett Fleming, Inc.; and <b>Cheri Wilson</b>, Eugene Water &amp; Electric Board</p> <p><i>Approaches to Estimating Individual Risk for Dam Safety Tolerable Risk Evaluation</i>, <b>David S. Bowles</b>, RAC Engineers and Economists, LLC; and <b>Jason Needham</b>, USACE</p> <p><i>Minimizing Bias in Geologic and Geotechnical Aspects of Risk Evaluation for Dams and Levees</i>, <b>Kerry D. Cato</b>, California State University; and <b>Derek S. Morley</b>, USACE</p> <p><i>The Common Cause Adjustment in Dam Safety Risk Analysis: Scope, Purpose, and Applicability</i>, <b>Dom Galic</b>, Bureau of Reclamation</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
<b>Session 2A: Environment</b> ACC Room 304A	<b>Session 2B: Hydrologic Modeling</b> ACC Room 304B	<b>Session 2C: Risk</b> ACC Room 304C
<p><i>Environmental Considerations in Dam Decommissioning</i>, <b>Kelly Schaeffer</b>, Kleinschmidt Associates</p> <p><i>Hydraulic Dredging of the Strontia Springs Reservoir — Lessons Learned</i>, <b>Douglas Raitt</b> and <b>Brett Cochran</b>, Denver Water</p> <p><i>Dam Decommissioning — Unique Approach by Conversion to a Levee</i>, <b>Zachary Whitten*</b>, Stantec</p> <p><i>Climate Services for Dam Management and Safety</i>, <b>Yulia Zakrevskaya</b>, SNC-Lavalin Inc; and <b>David Huard</b>, Ouranos, Inc.</p>	<p><i>A Comprehensive Approach to Probabilistic Hydrologic Hazard Assessment and its Use to Support Risk-Informed Decisions</i>, <b>Shaun Carney</b>, Riverside Technology, Inc.; <b>Keil Neff</b>, Tennessee Valley Authority; and <b>Mel Schaefer</b> and <b>Bruce Baker</b>, MGS Engineering</p> <p><i>Meteorological Data Visualization and Analysis Using HEC-MetVue</i>, <b>Fauwaz Hanbali</b>, USACE</p> <p><i>Big Dam in a Small World: Reassessment of the Spillway Design Flood of Lake Sakakewea</i>, <b>Joshua Melliger*</b>, USACE</p> <p><i>Application of Regional Hydrologic Criteria in the Rocky Mountains to Estimation of the PMF in Alberta</i>, <b>John Menninger*III</b>, <b>Seifu Guangul</b>, <b>Dan Hoffman</b> and <b>George Sabol</b>, Stantec; and <b>Syed Abbas</b>, Alberta Transportation</p>	<p><i>Failure Mode Analysis – Insights and Lessons Learned for the Foundation of a Successful Dam Safety Management Program</i>, <b>Frank L. Blackett</b> and <b>Douglas D. Boyer</b>, Federal Energy Regulatory Commission</p> <p><i>Epistemic vs Natural Uncertainty in Dam Safety Decision Making: Is it Fair Play?</i>, <b>Ignacio Escuder-Bueno</b>, Universitat Politècnica de València; and <b>Adrián Morales-Torres*</b> and <b>Jessica Castillo-Rodríguez*</b>, iPresas Risk Analysis</p> <p><i>Consequence Estimation for a Large System of Dams: Our Experiences from TVA Projects</i>, <b>Michael M. Crouch</b> and <b>Anurag Srivastava</b>, Riverside Technology, Inc; and <b>Morgan D. Ruark</b>, Tennessee Valley Authority</p> <p><i>Application of Risk Assessment to an Emergency Levee Design in an Urban Environment</i>, <b>Petros Armenis*</b> and <b>Malcolm Barker</b>, GHD Pty Ltd ; and <b>Peter Christensen</b> and <b>Graham Harrington</b>, Christchurch City Council</p>
5:30 pm - 7:30 p.m.	<i>Poster Session and Reception (see following pages for poster presentations)</i>	Exhibit Hall, ACC
7:30 pm - 10:00 p.m.	<i>Celebrating our Young Professionals</i>	Grand Plaza (outside)

# Tuesday, April 4

1:30 pm - 5:30 pm	Concurrent Technical Sessions	3rd Floor ACC
<b>Track D</b> Session 1D: Construction I ACC Room 304D	<b>Track E</b> Session 1E: Risk Informed H&H ACC Room 303A	<b>Track F</b> Session 1F: Embankment Dams I ACC Room 303B
*Young Professional		
<p>Moderators: <b>Del A. Shannon</b>, ASI Constructors; and <b>Andrew Verity</b>, Terracon Consultants</p> <p><i>Vibration Free Resonant Sheet Pile Driving in Dykes and Levees</i>, <b>Dane Reelie</b> and <b>Matthew Janes</b>, Resonance Technology International Inc.</p> <p><i>Construction of Borinquen Dam 1E for the Panama Canal Expansion</i>, <b>Lelio Mejia</b>, Geosyntec; <b>James Toose</b>, AECOM; and <b>Jorge Fernandez</b>, Panama Canal Authority</p> <p><i>Tsaile Dam — A Complete Approach Unearths a Safer Dam</i>, <b>Stephen Brown</b>, Kleinfelder</p>	<p>Moderators: <b>Randall R. Graham</b>, Water Resources Engineer; and <b>Korey Kadrmas</b>, RJH Consultants, Inc.</p> <p><i>Estimating the Reservoir Stage-Frequency Curve with Uncertainty Bounds for Cherry Creek Dam Using the Monte Carlo Reservoir Analysis Model (MCRAM)</i>, <b>Haden Smith*</b> and <b>John F. England, Jr.</b>, USACE</p> <p><i>Using Paleoflood Analyses in USACE Risk-Informed Decision Making and Dam Safety Evaluations</i>, <b>Keith I. Kelson</b>, <b>Christina M. Leonard*</b>, <b>Brian M. Hall*</b>, and <b>John F. England, Jr.</b>, USACE</p> <p><i>Risk Informed Freeboard Evaluation</i>, <b>Gregory S. Karlovits*</b> and <b>David A. Margo</b>, USACE</p>	<p>Moderators: <b>Stuart Harris</b>, Tennessee Valley Authority; and <b>Georgette Hlepas</b>, USACE</p> <p><i>A State Perspective on Tailings Dam Regulation and a Role for USSD and ASDSO</i>, <b>Charles Cobb</b>, Alaska Department of Natural Resources</p> <p><i>A Centrifuge Study of Co-Mixed Mine Tailings and Waste Rock Deposits</i>, <b>Nonika Antonaki*</b>, WSP   Parsons Brinckerhoff; <b>Tarek Abdoun</b>, <b>Rensselaer Polytechnic Institute</b>; and <b>Inthuorn Sasanakul</b>, University of South Carolina</p> <p><i>Freeboard Assessment for Long Embankment Dams</i>, <b>Mike Gerlach</b>, Stantec</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
<b>Session 2D: Construction I</b> ACC Room 304D	<b>Session 2E: Gates and Valves</b> ACC Room 303A	<b>Session 2F: Embankment Dams I</b> ACC Room 303B
<p><i>Replacement of Clear Lake Dam: Overcoming Challenges Constructing an RCC Dam on a Soil Foundation</i>, <b>Steve Jamieson</b>, W. W. Wheeler &amp; Associates, Inc.; <b>Bruce Cotic</b>, Xcel Energy; and <b>Don Lopez</b> and <b>John Treacy</b>, W. W. Wheeler &amp; Associates, Inc.</p> <p><i>Dewatering — How to Address this Potential Achilles Heel for Construction</i>, <b>John W. France</b> and <b>G. Richard Bird</b>, AECOM; <b>Gregg Batchelder Adams</b>, Corps of Engineers; and <b>Jessie Drayton Unterberg*</b>, AECOM</p> <p><i>Unique &amp; Detailed Draft Tube Slab Analysis</i>, <b>Jesse Kropelnicki</b>, <b>Kareem Bynoe</b> and <b>Kevin Finn*</b>, WSP   Parsons Brinckerhoff; and <b>David Schreck</b>, Brookfield Renewable Energy Group</p> <p><i>Core from Rock, Challenges of Core Construction for a Large High Hazard Dam</i>, <b>Michael Miller</b> and <b>Efrain Rondinel-Oviedo</b>, MWH, now part of Stantec</p>	<p><i>Fail Safe Design for Gated Structures Construction and Rehabilitation</i>, <b>Peter Davis</b> and <b>Mathew McGuire</b>, HDR</p> <p><i>Dams Inlet/Outlet Works Rehabilitation Program</i>, <b>Jack Husted*</b>, <b>Sterling Klippel</b> and <b>Keith Lilley</b>, Los Angeles County Department of Public Works</p> <p><i>Best Practices in a Tainter Gate Rehabilitation Program</i>, <b>Matt Moses</b>, <b>M. Leslie Body</b> and <b>Grady Hillhouse*</b>, Freese and Nichols, Inc.</p> <p><i>Emergency Shutoff Valves</i>, <b>Kishen Prathivadi</b>, Sewer Authority Mid-Coastside</p>	<p><i>Offstream Reservoir Earthen Dam Seepage Systems — Design and Construction Challenges</i>, <b>Randall Bushey</b>, CH2M</p> <p><i>Latest Compilation of Internal Erosion Incidents at Bureau Of Reclamation Dams</i>, <b>William O. Engemoen</b>, Bureau of Reclamation</p> <p><i>Modeling of Internal Erosion Within Foundation of Earthen Embankment Dam</i>, <b>Al Preston</b>, Geosyntec Consultants; <b>Keil Neff</b>, Bureau of Reclamation; and <b>Chunling Li</b> and <b>Lucas de Melo</b>, Geosyntec Consultants</p> <p><i>Turbid Discharge Incident at Cannonsville Dam</i>, <b>John H. Vickers</b>; NYC Environmental Protection; and <b>William H. Hover</b>, GZA GeoEnvironmental, Inc.</p>
5:30 pm - 7:30 p.m.	<i>Poster Session and Reception (see following pages for poster presentations)</i>	Exhibit Hall, ACC
7:30 pm - 10:00 p.m.	<i>Celebrating our Young Professionals</i>	Grand Plaza (outside)

# Tuesday, April 4

5:30 pm - 7:30 pm

Poster Session

\*Young Professional

## Concrete

*Freezing and Thawing Durability of Laboratory and In-Situ Roller-Compacted Concrete Test Specimens*, **Timothy Dolen**, Dolen and Associates; and **Veronica Madera**, Bureau of Reclamation

*Parametric Layout of Double-Curvature Arch Dams Using DIANA Finite Element Software*, **E. Goulas\***, **G. Schreppers** and **M. Partovi**, DIANA FEA BV; and **R.M. Gunn**, Swiss Federal Office of Energy

*Study of Uplift Pressure Effect in Roller Compacted Concrete Gravity Dam*, **Hichem Mazighi\*** and **Mustapha Kamel Mihoubi**, National School of Hydraulic Engineering, Algeria; and **Khaled Ghaedi** and **Zainah Ibrahim**, University of Malaya, Iran

*Soil-Structure Interaction Dynamic Analysis for an Existing Old Earth-Rock Fill Dam with Concrete Core*, **Mahmood Seid-Karbasi**, **Upul Atukorala**, **Herb Hawson** and **Bruce Downing**, Golder Associates Ltd.

*RCC Post Construction Core Testing and Data Analysis For San Vicente Dam Raise Project*, **James Stiadly**, Kleinfelder; **Andrew Oleksyn**, San Diego County Water Authority; **Michael Rogers** and **Glenn Tarbox**, MWH, now part of Stantec; **Thomas Reynoldson**, Kleinfelder; and **Gerard E. Reed III**, **Wade Griffis** and **Jim Zhou**, San Diego County Water Authority

## Construction

*Reconstruction of the Matala Spillway: Hydrotechnical and Safety Aspects*, **Ahmed Bouayad**, SNC-Lavalin

*Decommissioning Outdated Fish Bypass Systems and Preparation for Concrete Retrofit on Lower Granite Lock & Dam*, **Dirk deGroot\***, Global Diving & Salvage, Inc.

*Sand Secant Pile Chimney Filter Installation at Pine Creek Dam*, **Bob Faulhaber** and **Michael Arnold**, Bauer Foundations

*Partial Reconstruction of Rowallan Dam to Repair a Piping Incident*, **Gavan Hunter**, AECOM

*Execution of a Cut-Off Wall at the Dead Sea – Unique Conditions Require Unique Solution*, **Franz-Werner Gerressen**, Bauer Maschinen GmbH; **Gai Lehrer**, Y Lehrer Engineering Ltd.; and **Israel Christian Scholz**, Wayss & Freytag Spezialtiefbau GmbH

*Catawba Dam: The Long Road and Construction Update*, **Dennis Hogan**, Black & Veatch

*Water-Filled Bladders, an Innovative Bearing Interface for Arch Dam Bracing*, **Alexandre Lochu**, EDF-CIH

*Eductors – The Essential Alternative in Complex Dewatering Applications*, **Adam Richards\*** and **Harry Bagherzadeh**, Griffin Dewatering

*Application of Intelligent Compaction to Embankment Dam Construction*, **Robert V. Rinehart**, Bureau of Reclamation

*Update No. 3 of the Calaveras Dam Replacement Project*, **John Roadifer**, **Michael Forrest** and **Erik Newman**, AECOM; and **Daniel Wade**, **Susan Hou**, **Tedman Lee** and **Carman Ng**, San Francisco Public Utilities Commission

*Validated Integrated Compaction Monitoring at TVA's Kif Coal Combustion Product Stacking Facility*, **David J. White**, **Pavana Vennapusa** and **Brendan FitzPatrick**, Ingios Geotechnics, Inc.; **Jason F. Hill** and **Nicholas McClung**, TVA; and **Eric Hageman**, HDR

*To Air is Human; To Succeed, Divine – Evolutionary Research on Grout Enriched RCC Air Entrainment*, **Jeremy Young**, Schnabel Engineering; and **Eric Musselman**, Villanova University

## Embankment Dams

*Stability Analysis of a Concrete-Faced Rockfill Dam Using Parametric Evaluations*, **Christopher Conkle**, Geosyntec Consultants

*Estimating the Peak Friction Angle of Sandy Soils In Situ with State-Based Overburden Normalized SPT Blow Counts* **Robert A. Jaeger\***, GEI Consultants, Inc.; and **Ian P. Maki**, California DWR

*Comparison Analysis of the Behavior of Rock-Fill Dams with Clay Core at the Variation of the Water Level in the Reservoir*, **Ljupcho Petkovski** and **Stevcho Mitovski**, Sts Cyril and Methodius University

*Using Non-Intrusive Geophysical Techniques in Embankment Dam and Levee Risk Assessment*, **Justin Rittgers**, **Cassandra Wagner\*** and **Bryan K. Simpson**, Bureau of Reclamation

*Impact of Glacial Till Deposits – Structural Analysis of Green Mountain Dam*, **Hillery Venturini\***, Bureau of Reclamation

# Tuesday, April 4

5:30 pm - 7:30 pm

Poster Session

\*Young Professional

## Hydrology and Hydraulics

*Using HEC-RAS 2 Dimensional Capability for Simplified Rapid Dam Break Analysis*, **Wesley Crosby\***, USACE

*Hydraulic Modeling of a Complex Dam and Reservoir Project: A Case Study of Two Rivers Dam*, **Stephanie Doyal\***, USACE

*Rainfall-Runoff Modeling for the Garrison Dam Drainage with HEC-HMS*, **Jeff Harris, Kevin Denn\*** and **Melissa Larsen**, WEST Consultants, Inc.

*An Innovative Temporary Bulkhead for the Ruskin Dam and Powerhouse Upgrade Project*, **Jorge Marín**, Dragados Canada Inc.; **Saman Vazinkhoo**, British Columbia Hydro; and **Rafael Ibáñez-de-Aldecoa**, Dragados USA Inc.

*Risk and Uncertainty Features in HEC-ResSim*, **George Modini** and **Fauwaz Hanbali**, USACE

*Applied Methodology for Mapping of Potentially Flooded Areas for Induced Flow Rates and Flow Rates from Hypothetical Disruption of Lajeado Dam*, **Pedro Pupim\***, Energias de Portugal

*Leveraging Multi-Sensor Hydrologic Data for Model Validation*, **Kevin J. Ruswick** and **Gregory J. Daviero**, Schnabel Engineering

## Levees

*Design of Levee Modifications to Accommodate Long-Term River Scour*, **Justin Dominguez\*** and **James Nickerson**, GEI Consultants, Inc.

*Detection of Levee Voids at Aqueduct Crossings Using Geophysical Imaging Techniques*, **Zhihua Li** and **Atta Yiadom**, East Bay Municipal Utility District

*Risk Analysis in a Levee Safety Context: The Upper Wood River Levee Case History*, **Chris J. Redell\*** and **Jose R. Lopez**, USACE

*Effects of Compaction on Erodibility Characteristics of Levees Due to Overtopping*, **Ali Asghari Tabrizi\***, Schnabel Engineering; and **M. Hanif Chaudhry** and **Jasim Imran**, University of South Carolina

## Monitoring

*Preventing Catastrophic Failure of Underwater Infrastructure: Condition Assessments by ROV*, **Bill Sherwood** and **Bob Clarke**, ASI Group - ASI Marine

*Automated Data Acquisition System Basics for Dam Safety Instrumentation Monitoring*, **Peter Zimmerman**, **Paul Booth** and **Greg Dutson**, Canary Systems, Inc.

## Risk

*Failure of the Acude Da Nacao Earth Dam: A Probabilistic Perspective*, **Danielli de Melo Moura\***, Purdue University; **Rodrigo Borela\***, Georgia Tech; **Gabriela Alvarado\***, Purdue University; **Wilson Espinoza\***, Georgia Tech; and **Philippe L. Bourdeau**, Purdue University

# Wednesday, April 5

8:30 am - 12:30 pm

Concurrent Technical Sessions

3rd Floor ACC

## Track A

Session 3A: Monitoring  
ACC Room 304A

## Track B

Session 3B: Hydraulic Modeling  
ACC Room 304B

## Track C

Session 3C: Earthquakes I  
ACC Room 304C

\*Young Professional

Moderators: **Christopher Hill**, Consulting Engineer; and **Shaun Dustin**, GeoComp

*Operation and Maintenance of an Instrumentation Program*, **Amanda Sutter\***, USACE

*FERC Best Practices for Dam Safety Performance Monitoring*, **Will Brown**, **Eric Kennedy\***, **Justin Nettle**, **Emeruwa Anyanwu**, **Eric Gross**, **Jim McHenry** and **David Olson**, Federal Energy Regulatory Commission

*Calculation of Threshold Limits for Dam Safety Instrumentation*, **Jack Husted\***, **Travis Wylde\*** and **Sterling Klippel\***, Los Angeles County Department of Public Works

*Somerset Dam – Innovative Remote Monitoring for Time-Sensitive Breach Detection*, **Jerry Cross** and **Yogi Sookhu**, Gotham Analytics; and **Jud Donaghy**, TransCanada

Moderators: **Greg Paxson**, Schnabel Engineering, Inc.; and **Martin Teal**, WEST Consultants, Inc.

*Modeling Dam Breaches And Flood Inundation Using Hec-Ras 5.0'S New 2D Capabilities*, **D.L. Silvertooth**, USACE; and **M. Meshkat**, Amec Foster Wheeler Environment & Infrastructure, Inc.

*Estimating the Probable Maximum Flood for Whittier Narrows Dam Using a 2D Hydrodynamic Modeling Approach*, **Brian M. Hall\***, **Haden Smith\*** and **Reuben Sasaki\***, USACE

*When an Adjacent Watershed Inundates Your Offline Reservoir: Ukumehame Reservoir Dam Removal Challenges and Design*, **Andrew J. Lynch\***, **Stewart S. Vaghti** and **Dean B. Durkee**, Gannett Fleming, Inc.

*Atoka Dam And Spillway Modifications*, **Patrick Miles\***, **Brad Kirksey\*** and **John Rutledge**, Freese and Nichols, Inc., and **Sam Samandi**, **John L. Hare** and **Andrew Mishler\***, Oklahoma City Water Utilities Trust

Moderators: **Sam Abbaszadeh**, MWH, now part of Stantec; and **Robert Cannon**, Schnabel Engineering

*Use of the Conditional Mean for Improved Prediction of Ground Motion Intensity Measures for Embankment Dams*, **Richard J. Armstrong**, California State University, Sacramento

*Seismic Deformation Analysis of Blue Ridge Dam*, **Glenn J. Rix** and **Lucas de Melo**, Geosytec Consultants, Inc.; and **Christopher L. Saucier** and **Michael A. Morrison**, TVA

*A Case History Evaluation of State of Practice for Seismic Deformation Modeling of Earthen Dams*, **Khaled Chowdhury**, University of California, Berkeley; **Vlad Perlea**, AECOM; **Raymond B. Seed**, University of California, Berkeley, **Michael Beaty**, Beaty Engineering, LLC; **Ethan Dawson**, AECOM; and **George Hu**, USACE

*Comparison of Two Constitutive Models for Simulating the Effects of Liquefaction on Embankment Dams*, **Jack Montgomery\***, Auburn University; and **Sam Abbaszadeh\***, MWH, now part of Stantec

10:30 am - 11:00 am

Refresh Break

Exhibit Hall, ACC

Session 4A: Monitoring  
ACC Room 304A

Session 4B: Site Specific PMP  
Panel Discussion ACC Room 304B

Session 4C: Earthquakes I  
ACC Room 304C

*Geospatial Tools for Routine Dam Safety Monitoring and Response Applications During Emergencies*, **Yogesh Prashar**, **Atta B. Yadom**, **Elizabeth Bialek** and **Rachel Wong**, East Bay Municipal Utility District

*Special Considerations when Installing Automated Instrumentation at a Site with Access Limitations*, **William Walker\***, USACE

*Instrumentation and Information Management at Boone Dam*, **Rozh Ameen**, Tennessee Valley Authority; and **Raphael Siebenmann\***, and **Jamey Rosen**, Geosyntec Consultants

*Recent Extreme Storms and Their Relation to PMP*, **Bill Kappel**, **Doug Hultstrand** and **Geoff Muhlestein**, Applied Weather Associates

*Needs to Update Probable Maximum Precipitation for Determining Hydrologic Loading on Dams*, **Chandra Pathak**, USACE

*Site Specific Probable Maximum Precipitation Development*, **Jeff Harris**, WEST Consultants, Inc.; and **Ben Rohrbach**, USACE

*Advances in Watershed Modeling Inputs and Methods for Dam Safety Risk Analyses*, **Jason Caldwell**, **Nicole Novembre**, **Katie Laro** and **Tye Parzybok**, MetStat, Inc.; **Bruce Barker** and **Mezl Schaefer**, MGS Engineering Consultants, Inc.; and **George Taylor** and **Wayne Gibson**, Applied Climate Services

*Seismic Evaluation of Lookout Point Embankment Dam in Oregon – Cascadia Subduction Zone Implications*, **Andrew D. Kost\*** and **Kenji Yamasaki**, Cornforth Consultants, Inc.; and **David H. Scofield**, USACE

*Performance of Fena Dam During the 1993 Guam Earthquake*, **Lelio H. Mejia**, Geosyntec

*Seismic Evaluation Of The Remediated Isabella Auxiliary Dam*, **George Hu\***, **David C. Serafini** and **Henri V. Mulder**, USACE; and **Vlad Perlea**, Retired

12:30 - 1:30 p.m.

Lunch — Name that Dam slideshow

ACC Ballroom F, 3rd Floor

# Wednesday, April 5

8:30 am - 12:30 pm	Concurrent Technical Sessions	3rd Floor ACC
<b>Track D</b> Session 3D: Construction II ACC Room 304D	<b>Track E</b> Session 3E: Concrete I ACC Room 303A	<b>Track F</b> Session 3F: Embankment Dams II ACC Room 303B
*Young Professional		
<p>Moderators: <b>Stephen Whiteside</b>, CDM Smith; and <b>Scott Korab</b>, Ballard Marine Construction</p> <p><i>Seismic Remediation of Perris Dam Using CDSM</i>, <b>Wen Yan (Grace) Chen</b>, <b>Michael Driller</b> and <b>Steven Friesen</b>, California Department of Water Resources</p> <p><i>Controlled Blasting for the Red Rock Hydroelectric Project</i>, <b>Rachael V. Bisnett*</b>, MWH, now part of Stantec; <b>James Valentyn</b>, <b>Ames Construction</b>; and <b>Nicholas Johnson</b>, Hoover Construction Co.</p> <p><i>Upriver Dam Spillway Rehabilitation</i>, <b>Ray Trudgeon*</b>, <b>James H. Rutherford</b>, <b>Steve Burns</b>, <b>Val Kovalishyn</b>, <b>Ccee Chan*</b> and <b>Nikou Jalayeri*</b>, Hatch</p> <p><i>Lakeside Ranch Stormwater Treatment Area – Lessons Learned During Design and Construction</i>, <b>Danielle Neamtu*</b>, <b>Stephen Whiteside</b> and <b>Stephen Blair</b>, CDM Smith</p>	<p>Moderators: <b>George Kelley</b>, Freese and Nichols, Inc.; and <b>Guy Lund</b>, Gannett Fleming, Inc.</p> <p><i>Investigating the Structural Safety of Cracked Concrete Dams</i>, <b>Glenn S. Tarbox</b>, MWH, now part of Stantec; <b>Robin Charlwood</b>, Robin Charlwood &amp; Associates, PLLC; and <b>Chris Hayes</b>, CEATI International</p> <p><i>A New Approach for the Design of the Köroğlu RCC Arch/Gravity Dam</i>, <b>Quentin Shaw</b>, ARQ Consulting Engineers</p> <p><i>Upgrade and Spillway Modifications at Santa Anita Dam</i>, <b>Sterling E. Klippel</b>, Los Angeles County Department of Public Works; <b>Vik Iso-Ahola</b>, <b>Glenn S.Tarbox</b> and <b>Martina Gelo</b>, MWH, now part of Stantec; and <b>George Manole</b>, LACDPW</p> <p><i>Understanding the Performance of Aging Infrastructure: A 99-Year Old Multiple Arch Dam</i>, <b>Vik Iso-Ahola</b>, <b>Glenn S.Tarbox</b>, <b>Mohammadreza Mostafa</b>, <b>Sean Ellenson*</b>, <b>Munit Bector</b> and <b>Ali Rasekh</b>, MWH, now part of Stantec</p>	<p>Moderators: <b>Robert Eichinger</b>, Stantec; and <b>Bob Bowers</b>, O'Brien &amp; Gere</p> <p><i>Considerations for Establishing Seepage Thresholds in Concrete-Faced-Rockfill-Dams</i>, <b>Erik J. Malvick</b>, California Department of Water Resources</p> <p><i>Geomembranes to Waterproof Embankment Dams</i>, <b>John Wilkes</b>, <b>Alberto Scuero</b> and <b>Gabriella Vaschetti</b>, Carpi</p> <p><i>Geotechnical Investigation of South Carolina Flood-Damaged Dams after the 2015 October Rainfall Event</i>, <b>Inthuorn Sasanakul</b>, <b>Sarah L. Gassman</b>, <b>Charles E. Pierce</b>, <b>William Ovalle*</b>, <b>Ryan Starcher*</b>, <b>Emad Gheibi*</b>, and <b>Mostaqur Rahman*</b> University of South Carolina</p> <p><i>Rough River Dam Phase 1B Exploratory Drilling and Grouting Program</i>, <b>Conrad Ginther*</b>, Black &amp; Veatch; <b>Dmitri Ivanov*</b>, Advanced Construction Techniques; and <b>Rolando Benitez</b>, RIZZO Associates</p>
10:30 am - 11:00 am	Refresh Break	Exhibit Hall, ACC
<b>Session 4D: Construction II</b> ACC Room 304D	<b>Session 4E: Concrete I</b> ACC Room 303A	<b>Session 4F: Embankment Dams II</b> ACC Room 304B
<p><i>Design and Repair of a Power Intake Gate Sealing Surface Under Challenging Constraints</i>, <b>Mike Carney</b> and <b>Don Thompson</b>, Tetra Tech, Inc.; <b>Roland Lwiindi</b>, North South Power Company; and <b>Eli Lundberg</b> and <b>Joshua Phillips</b>, Tetra Tech, Inc.</p> <p><i>Post-Tensioning in an Underwater Environment: Wanapum Dam – Monolith 4 Spillway Repair</i>, <b>Paul Krumm</b>, Nicholson Construction</p> <p><i>Balancing Water Resources and Power Generation for the Metlakatla Indian Community</i>, <b>Jesse Hutton</b> and <b>Scott Korab</b>, Ballard Marine Construction</p>	<p><i>A Performance-Based Evaluation of Post-Tensioned Anchors Embedded Within a Concrete Gravity Dam</i>, <b>Tae Ha Park*</b>, <b>Samantha Hoang*</b>, <b>Jonathan Lum*</b>; and <b>Ziyad Duron</b>, Harvey Mudd College</p> <p><i>On the Use of Discrete Lumped Element Modeling for Insight into Concrete Dam Behavior</i>, <b>Jonathan Lum*</b>, <b>Samantha Hoang*</b>, <b>Tae Ha Park*</b> and <b>Ziyad Duron</b>, Harvey Mudd College; and <b>Guy Lund</b>, Gannett Fleming, Inc.</p> <p><i>Shear Strength of Concrete Lift Joints from Extensive Lab Testing Compared to Theoretical Results</i>, <b>Dan D. Curtis</b>, HATCH Ltd., <b>Husein Hasan</b>, Tennessee Valley Authority; and <b>Gurinderbir S. Sooch*</b>, HATCH Ltd.</p>	<p><i>Integrating a Multidisciplinary Field Investigation to Improve Assessment of Internal Erosion</i>, <b>Cassandra M. Wagner*</b>, <b>Justin B. Rittgers</b> and <b>Bryan K. Simpson</b>, Bureau of Reclamation</p> <p><i>Laboratory Investigation of Backward Erosion Piping Into Constricted Seepage Exits</i>, <b>John Rice</b> and <b>Ibrahim A. Ibrahim*</b>, Utah State University</p> <p><i>A Laboratory Examination of Filter Erosion Boundaries in an Embankment Dam</i>, <b>R.J. Fannin</b>, University of British Columbia; and <b>M. Li</b> and <b>C. Anderlini</b>, British Columbia Hydro</p>
12:30 - 1:30 p.m.	Lunch — Name that Dam slideshow	ACC Ballroom F, 3rd Floor

# Wednesday, April 5

1:30 pm - 5:30 pm	Concurrent Technical Sessions	3rd Floor ACC
<b>Track A</b> Session 5A: Monitoring ACC Room 304A	<b>Track B</b> Session 5B: Reservoir Sedimentation ACC Room 304B	<b>Track C</b> Session 5C: Earthquakes II ACC Room 304C
*Young Professional		
<p>Moderators: <b>Emily Schwartz</b>, Black &amp; Veatch; and <b>Amanda Sutter</b>, USACE</p> <p><i>Monitoring San Vicente Dam Raise During Initial Fill</i>, <b>Andrew Oleksyn</b>, San Diego County Water Authority; <b>Nathan Grima</b>, City of San Diego Water Department; <b>Anna Kolakowski</b>, California Department of Water Resources; <b>Larry Rodriguez</b>, City of San Diego Water Department; and <b>Jim Zhou</b>, San Diego County Water Authority</p> <p><i>First Filling Instrumentation Monitoring of the Folsom Dam Auxiliary Spillway Control Structure</i>, <b>Kenneth R. Pattermann</b> and <b>George Hu</b>, USACE</p> <p><i>Effect Of Antecedent Groundwater Level On Piezometric Response During Flood Events</i>, <b>Chun-Yi Kuo</b>, <b>Richard B. Hockett</b> and <b>Troy S. O'Neal</b>, USACE</p>	<p>Moderators: <b>Timothy Randle</b>, Bureau of Reclamation; and <b>Sean Smith</b>, USACE</p> <p><i>Numerical Sediment Transport Modeling of Operations at Paonia Reservoir, Colorado</i>, <b>Sean Kimbrel*</b>, Bureau of Reclamation</p> <p><i>Impact of Climate Change on the Sediment Accumulation in the reservoir of Embankment Dams: Case Study, Baldhill Dam, North Dakota</i>, <b>Bahareh Shoghli*</b> and <b>Yeo Howe Lim</b>, University of North Dakota</p> <p><i>Sediment Transport Through Lake Clarke and Lake Aldred</i>, <b>Jonathan M. G. Viducich*</b> and <b>Martin J. Teal</b>, WEST Consultants, Inc.</p>	<p>Moderators: <b>Mahmoudreza Mivehchi</b>, BMP Engineering &amp; Inspection Inc.; and <b>Kenwarjit Dosanjh</b>, HDR</p> <p><i>A Direct Finite Element Method for Nonlinear Analysis of Semi-Unbounded Dam-Water-Foundation Rock Systems</i>, <b>Anil K. Chopra</b> and <b>Arnkjell Lokke</b>, University of California</p> <p><i>Numerical Assessment of Hydrodynamic Loads Induced During Seismic Interaction Between Reservoir and Concrete Dam</i>, <b>Jerzy Salamon</b>, Bureau of Reclamation; and <b>Jonna Manie</b>, DIANA FEA BV</p> <p><i>Seismic Back Analysis of Monticello Arch Dam – Blind Prediction Workshop and Additional Analyses</i>, <b>Emmanuel Robbe*</b>, EDF Hydro Engineering Center</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
<b>Session 6A: Monitoring</b> ACC Room 304A	<b>Session 6B: Reservoir Operations</b> ACC Room 304B	<b>Session 6C: Earthquakes II</b> ACC Room 304C
<p><i>Leak Detection In Earth Dams and Levees Using Optical Fiber Distributed Temperature Sensors</i>, <b>Maxime Tatin*</b> and <b>Vincent Lamour</b>, Cementys; <b>Stéphane Bonelli</b>, Irstea; and <b>Aurélie Garandet</b>, Compagnie Nationale du Rhône</p> <p><i>Elephant Butte Dam UAV Data Collection and Photogrammetry</i>, <b>Matthew Klein</b>, Bureau of Reclamation</p> <p><i>Proposed Guidelines for Conducting a Performance-Based Evaluation of a Concrete Dam</i>, <b>Samantha Hoang*</b>, <b>Tae Ha Park*</b>, <b>Jonathan Lum*</b> and <b>Ziyad Duron</b>, Harvey Mudd College; and <b>Guy S. Lund</b>, Gannett Fleming, Inc.</p> <p><i>Reality Capture for Dam and Hydroelectric Facilities</i>, <b>Adam Serock</b>, HDR</p>	<p><i>To Release or Not to Release? Dam Operation Modeling Using Gridded Short-Term Forecast Rainfall</i>, <b>Maged Aboelata</b>, AECOM</p> <p><i>Blackstone River and Thames River Watershed CWMS Deployments</i>, <b>Ben Zoeller</b>, Amec Foster Wheeler</p> <p><i>Systems-Based Risk Analysis of Lake Mendocino Forecast-Informed Reservoir Operations with HEC-WAT</i>, <b>Matthew McPherson</b> and <b>Leila Ostadrahimi</b>, USACE</p> <p><i>HEC-ResSim 3.3 — New Features to Support Complex Studies</i>, <b>Joan Klipsch</b>, USACE</p>	<p><i>Non-Linear Time Domain Analysis of Ruskin Dam in LS-DYNA Including Reservoir-Foundation-Structure Interaction</i>, <b>O. Penner*</b>, <b>B. Bergman*</b>, <b>S. Razavi-Darbar</b> and <b>D. Queen</b>, BC Hydro; <b>P. Léger</b> and <b>Martin Leclerc</b>, École Polytechnique Montréal; and <b>Yannick Boivin</b>, Tetra Tech</p> <p><i>Boca Dam Spillway Nonlinear Analysis and Validation Study</i>, <b>Jennifer E. Huggins</b>, <b>Roman Koltuniuk</b> and <b>Miguel Rocha</b>, Bureau of Reclamation</p> <p><i>Nonlinear Seismic Evaluation of Perris Dam Outlet Tower</i>, <b>Yusof Ghanaat</b> and <b>Zachary Harper</b>, Quest Structures, Inc.</p> <p><i>Nonlinear Seismic Analysis of an Arch Dam Subjected to Very Intensive Earthquake Loading</i>, <b>Gurinderbir S. Sooch*</b> and <b>Dan D. Curtis</b>, HATCH Ltd.</p>
5:45 pm - 7:00 pm	USACE Townhall Meeting	ACC Room 304B
7:00 pm - 9:30 pm	Reception and Closing Banquet	Marriott Hotel



# Wednesday, April 5

1:30 pm - 5:30 pm	Concurrent Technical Sessions	3rd Floor ACC
<b>Track D</b> Session 5D: Levees ACC Room 304D	<b>Track E</b> Session 5E: Concrete II ACC Room 303A	<b>Track F</b> Session 5F: Safety & Security ACC Room 303B
*Young Professional		
<p>Moderators: <b>Elena Sossenkina</b>, HDR; and <b>Darren Mack</b>, Sage Engineers, Inc.</p> <p><i>U.S. Levee Safety Coalition and International Community of Practice, Recent Activities and Updates</i>, <b>Elena Sossenkina</b>, HDR; and <b>Michael Sharp</b> and <b>Noah Vroman</b>, USACE</p> <p><i>USACE Levee Portfolio Report</i>, <b>Noah Vroman</b>, USACE</p> <p><i>Levee Safety Guidance Comprehensive Document Review</i>, <b>Michael Sharp</b>, USACE</p> <p><i>Inventory and Review of the Nation's Levees</i>, <b>Jamie McVicker</b> and <b>Cathi Sanders</b>, USACE</p> <p><i>Levee Safety Practices in the Keystone State</i>, <b>Andrew J. Orlovsky*</b>, Pennsylvania Department of Environmental Protection</p>	<p>Moderators: <b>Vik Iso-Ahola</b>, MWH, now part of Stantec; and <b>Olga Zabawa</b>, WSP   Parsons Brinckerhoff</p> <p><i>Simplified Nonlinear Seismic Analyses of Gravity Dams</i>, <b>Elisa Messio*</b>, <b>Wenbo Duan*</b> and <b>Najib Bouaanani</b>, Polytechnique Montréal; and <b>Benjamin Miquel*</b>, Hydro-Québec</p> <p><i>Strontia Springs Dam: Methods to Better Understand Seismic Behavior</i>, <b>Aimee L. Corn*</b> and <b>Guy S. Lund</b>, Gannett Fleming, Inc.; and <b>Darren J. Brinker</b> and <b>Erin Gleason</b>, Denver Water</p> <p><i>Cracking In Thin Arch Concrete Dam – LS-DYNA Nonlinear Dynamic Structural Analysis</i>, <b>Sherry Hamedian</b> and <b>Roman Koltuniuk</b>, Bureau of Reclamation</p>	<p>Moderators: <b>William Foos</b>, Gannett Fleming, Inc.; and <b>Paul Meeks</b>, Worthington Products, Inc.</p> <p><i>Managing Threats Through Effective Security Programs</i>, <b>J. A. Gloschat*</b> and <b>A. C. Baehr</b>, Gannett Fleming</p> <p><i>Unmanned Aerial Vehicles – A Public Agency Approach to Deployment and Protection</i>, <b>Katharine Killeen</b> and <b>John Rizzardo</b>, California Department of Water Resources</p> <p><i>The Economics of Dam Security Post 9/11 and the Threat to Consumer Confidence</i>, <b>Alexander B. Shannon</b>, CH2M</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
<b>Session 6D: Levees</b> ACC Room 304D	<b>Session 6E: Concrete II</b> ACC Room 303A	<b>Session 6F: Safety &amp; Security</b> ACC Room 303B
<p><i>Seismic Vulnerability Analysis of Slag Cement-Cement-Bentonite Seepage Cutoff Walls for Levees</i>, <b>Vlad Perlea</b>, AECOM; <b>Khaled Chowdhury</b>, USACE; <b>Mary Perlea</b>, AECOM; and <b>Michael Kynett</b>, USACE</p> <p><i>Advances in Design Procedures for Relief Well Lines in Variable Urban Settings</i>, <b>Robert A. Jaeger*</b>, <b>Richard A. Keizer, Jr.*</b> and <b>Graham C. Bradner</b>, GEI Consultants, Inc.; and <b>Joseph Weber</b> and <b>Mark Stanley</b>, HDR</p> <p><i>Explaining Pore Pressure Changes Due to Piping Through Changes in Hydraulic Conductivity</i>, <b>Carolyne Bocovich*</b>, Colorado School of Mines; <b>Willem Kanning</b>, Deltares; and <b>Minal Parekh</b> and <b>Michael Mooney</b>, Colorado School of Mines</p> <p><i>Design and Construction of Feather River West Levee Improvements</i>, <b>Christopher Krivanec</b> and <b>Les Harder</b>, HDR; and <b>Michael Bessette</b>, Sutter Butte Flood Control Agency</p>	<p><i>Comparison of Nonlinear Finite Element Analysis Methods Used to Simulate Post-Tensioned Anchorage in Concrete</i>, <b>Vojislav Cvijanovic*</b>, <b>Mark Schultz</b> and <b>Blake Dolve</b>, California Department of Water Resources</p> <p><i>Structural Inflection Points, and How They Enhance the Understanding of Structural Safety</i>, <b>Guy Lund</b>, Gannett Fleming, Inc., <b>Kevin Marshall</b>, Grant County Public Utility District; and <b>Todd Barber</b>, Southern Company</p> <p><i>Pseudo-Nonlinear Finite Element Analysis of Concrete Gravity Dams</i>, <b>J. Taylor Perkins</b>, Stantec; <b>Husein A. Hasan</b>, Tennessee Valley Authority; and <b>Daniel A. Gilbert</b>, Stantec</p> <p><i>Importance of RCC Mixture Lab Studies for the Design of Large Dams</i>, <b>A. Garduno</b>, <b>M. Montero</b> and <b>F. Ballhausen</b>, Comision Federal de Electricidad</p>	<p><i>Flood Risks from Spillways: Modeling and Communicating Non-Dam-Failure Impacts to Native American Tribes</i>, <b>Rinda Tisdale</b>, <b>Matthew Young</b> and <b>Chris Clopper*</b>, Bureau of Indian Affairs</p> <p><i>City of Dubuque, Iowa: Defining Emergency Actions with a Levee Breach Evaluation</i>, <b>Andrew McCoy</b>, HDR; <b>Deron Muehring</b>, City of Dubuque; and <b>Rusty Jones</b>, HDR</p> <p><i>Public Safety and Unauthorized Extreme Activities at Dams</i>, <b>Steven Barfuss</b>, Utah State University; <b>Brian M. Crookston</b>, Schnabel Engineering; and <b>Kade Beck*</b> and <b>Ryan Weller*</b>, Utah State University</p> <p><i>Public Safety and Social Media</i>, <b>Sharon Nicole Roach*</b>, Federal Energy Regulatory Commission</p>
5:45 pm - 7:00 pm	USACE Townhall Meeting	ACC Room 304B
7:00 pm - 9:30 pm	Reception and Closing Banquet	Marriott Hotel

# Thursday, April 6

7:30 am - 5:00 pm	Workshop Registration Desk Open	Marriott Hotel
8:00 am - 5 pm	Four Concurrent Workshops: 1. CDA's Public Safety Program Development for Dams 2. Seismic Analysis of Concrete Dams 3. Levees and Dry Dams 4. Answering the Most Important Question of 2017 - What Is an Environmentally Sustainable Water Project - How Do We Communicate?	Marriott Hotel
11:30 - 1:00 pm	Buffet Lunch	Marriott Hotel
1:00 pm - 5:00 pm	Field Tour	Orange County Groundwater Recharge Program

# Friday, April 7

8:00 am - 12 noon	CDA's Public Safety Program Development for Dams (continued)	Anaheim Convention Center
8:00 am - 1:30 pm	Seismic Analysis of Concrete Dams (continued)	Anaheim Convention Center
8:00 am - 5:00 pm	Field Tour	Perris Dam and Diamond Valley Dam