



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>Opening Session: Celebrating the Best of USSD</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>Plenary Session: It's a Small World — Celebrating our National Relationships</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>Plenary Session: It's a Small World — Celebrating our International Relationships</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
Track A Session 1A: Conference Theme ACC Room 304A	Track B Session 1B: Physical Modeling ACC Room 304B	Track C Session 1C: Risk ACC Room 304C
*Young Professional		
Moderators: David Gutierrez , GEI Consultants, Inc.; and John Osterle , RIZZO Associates <i>Reservoir Sedimentation and Sustainability</i> , Timothy Randle , Sean Kimbrel and Kent L. Collins , Bureau of Reclamation <i>Dam Safety and Resilient Water Management: A Case for Dynamic Reservoir Operations</i> , Michael McMahon , HDR <i>The Nebraska Department of Natural Resources Coordinated Efforts in Flood Flows</i> , Kristen Obermueller* , Bob Beduhn and John Engel , HDR	Moderators: James Lindell , MWH, now part of Stantec; and Chandra Pathak , USACE <i>Linear Weir Size Scale Effects: A look at Flat Top Weirs</i> , Blake Tullis , Utah State University; and Kedric Curtis* , Jones and Demille Engineering <i>Physical Model of Spillway and Reservoir Debris Interaction</i> , Kent Walker , Jaron Hasenbalg and Kelly Brom , Bureau of Reclamation <i>Boundary Dam Spillway No. 1 TDG Modifications</i> , John Werner* and James Rutherford , Hatch; Andrew Bearlin , Seattle City Light; Peter Friz and Jeff Johnson , Hatch; Daniel Kirschbaum , Joe Groeneveld, Seattle City Light; and Justin Arnold , Alden Hydraulic Laboratories	Moderators: Dean Durkee , Gannett Fleming, Inc.; and Cheri Wilson , Eugene Water & Electric Board <i>Approaches to Estimating Individual Risk for Dam Safety Tolerable Risk Evaluation</i> , David S. Bowles , RAC Engineers and Economists, LLC; and Jason Needham , USACE <i>Minimizing Bias in Geologic and Geotechnical Aspects of Risk Evaluation for Dams and Levees</i> , Kerry D. Cato , California State University; and Derek S. Morley , USACE <i>The Common Cause Adjustment in Dam Safety Risk Analysis: Scope, Purpose, and Applicability</i> , Dom Galic , Bureau of Reclamation
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
Session 2A: Environment ACC Room 304A	Session 2B: Hydrologic Modeling ACC Room 304B	Session 2C: Risk ACC Room 304C
<i>Environmental Considerations in Dam Decommissioning</i> , Kelly Schaeffer , Kleinschmidt Associates <i>Hydraulic Dredging of the Strontia Springs Reservoir — Lessons Learned</i> , Douglas Raitt and Brett Cochran , Denver Water <i>Dam Decommissioning — Unique Approach by Conversion to a Levee</i> , Zachary Whitten* , Stantec <i>Climate Services for Dam Management and Safety</i> , Yulia Zakrevskaya , SNC-Lavalin Inc; and David Huard , Ouranos, Inc.	<i>A Comprehensive Approach to Probabilistic Hydrologic Hazard Assessment and its Use to Support Risk-Informed Decisions</i> , Shaun Carney , Riverside Technology, Inc.; Keil Neff , Tennessee Valley Authority; and Mel Schaefer and Bruce Baker , MGS Engineering <i>Meteorological Data Visualization and Analysis Using HEC-MetVue</i> , Fauwaz Hanbali , USACE <i>Big Dam in a Small World: Reassessment of the Spillway Design Flood of Lake Sakakewea</i> , Joshua Melliger* , USACE <i>Application of Regional Hydrologic Criteria in the Rocky Mountains to Estimation of the PMF in Alberta</i> , John Menninger*III , Seifu Guangul , Dan Hoffman and George Sabol , Stantec; and Syed Abbas , Alberta Transportation	<i>Failure Mode Analysis – Insights and Lessons Learned for the Foundation of a Successful Dam Safety Management Program</i> , Frank L. Blackett and Douglas D. Boyer , Federal Energy Regulatory Commission <i>Epistemic vs Natural Uncertainty in Dam Safety Decision Making: Is it Fair Play?</i> , Ignacio Escuder-Bueno , Universitat Politècnica de València; and Adrián Morales-Torres* and Jessica Castillo-Rodríguez* , iPresas Risk Analysis <i>Consequence Estimation for a Large System of Dams: Our Experiences from TVA Projects</i> , Michael M. Crouch and Anurag Srivastava , Riverside Technology, Inc; and Morgan D. Ruark , Tennessee Valley Authority <i>Application of Risk Assessment to an Emergency Levee Design in an Urban Environment</i> , Petros Armenis* and Malcolm Barker , GHD Pty Ltd ; and Peter Christensen and Graham Harrington , Christchurch City Council
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
Track D Session 1D: Construction I ACC Room 304D	Track E Session 1E: Risk Informed H&H ACC Room 303A	Track F Session 1F: Embankment Dams I ACC Room 303B
*Young Professional		
<p>Moderators: Del A. Shannon, ASI Constructors; and Andrew Verity, Terracon Consultants</p> <p><i>Vibration Free Resonant Sheet Pile Driving in Dykes and Levees</i>, Dane Reelie and Matthew Janes, Resonance Technology International Inc.</p> <p><i>Construction of Borinquen Dam 1E for the Panama Canal Expansion</i>, Lelio Mejia, Geosyntec; James Toose, AECOM; and Jorge Fernandez, Panama Canal Authority</p> <p><i>Tsaile Dam — A Complete Approach Unearths a Safer Dam</i>, Stephen Brown, Kleinfelder</p>	<p>Moderators: Randall R. Graham, Water Resources Engineer; and Korey Kadrmas, 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>, Haden Smith* and John F. England, Jr., USACE</p> <p><i>Using Paleoflood Analyses in USACE Risk-Informed Decision Making and Dam Safety Evaluations</i>, Keith I. Kelson, Christina M. Leonard*, Brian M. Hall*, and John F. England, Jr., USACE</p> <p><i>Risk Informed Freeboard Evaluation</i>, Gregory S. Karlovits* and David A. Margo, USACE</p>	<p>Moderators: Stuart Harris, Tennessee Valley Authority; and Georgette Hlepas, USACE</p> <p><i>A State Perspective on Tailings Dam Regulation and a Role for USSD and ASDSO</i>, Charles Cobb, Alaska Department of Natural Resources</p> <p><i>A Centrifuge Study of Co-Mixed Mine Tailings and Waste Rock Deposits</i>, Nonika Antonaki*, WSP Parsons Brinckerhoff; Tarek Abdoun, Rensselaer Polytechnic Institute; and Inthuorn Sasanakul, University of South Carolina</p> <p><i>Freeboard Assessment for Long Embankment Dams</i>, Mike Gerlach, Stantec</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
Session 2D: Construction I ACC Room 304D	Session 2E: Gates and Valves ACC Room 303A	Session 2F: Embankment Dams I ACC Room 303B
<p><i>Replacement of Clear Lake Dam: Overcoming Challenges Constructing an RCC Dam on a Soil Foundation</i>, Steve Jamieson, W. W. Wheeler & Associates, Inc.; Bruce Cotic, Xcel Energy; and Don Lopez and John Treacy, W. W. Wheeler & Associates, Inc.</p> <p><i>Dewatering — How to Address this Potential Achilles Heel for Construction</i>, John W. France and G. Richard Bird, AECOM; Gregg Batchelder Adams, Corps of Engineers; and Jessie Drayton Unterberg*, AECOM</p> <p><i>Unique & Detailed Draft Tube Slab Analysis</i>, Jesse Kropelnicki, Kareem Bynoe and Kevin Finn*, WSP Parsons Brinckerhoff; and David Schreck, Brookfield Renewable Energy Group</p> <p><i>Core from Rock, Challenges of Core Construction for a Large High Hazard Dam</i>, Michael Miller and Efrain Rondinel-Oviedo, MWH, now part of Stantec</p>	<p><i>Fail Safe Design for Gated Structures Construction and Rehabilitation</i>, Peter Davis and Mathew McGuire, HDR</p> <p><i>Dams Inlet/Outlet Works Rehabilitation Program</i>, Jack Husted*, Sterling Klippel and Keith Lilley, Los Angeles County Department of Public Works</p> <p><i>Best Practices in a Tainter Gate Rehabilitation Program</i>, Matt Moses, M. Leslie Body and Grady Hillhouse*, Freese and Nichols, Inc.</p> <p><i>Emergency Shutoff Valves</i>, Kishen Prathivadi, Sewer Authority Mid-Coastside</p>	<p><i>Offstream Reservoir Earthen Dam Seepage Systems — Design and Construction Challenges</i>, Randall Bushey, CH2M</p> <p><i>Latest Compilation of Internal Erosion Incidents at Bureau Of Reclamation Dams</i>, William O. Engemoen, Bureau of Reclamation</p> <p><i>Modeling of Internal Erosion Within Foundation of Earthen Embankment Dam</i>, Al Preston, Geosyntec Consultants; Keil Neff, Bureau of Reclamation; and Chunling Li and Lucas de Melo, Geosyntec Consultants</p> <p><i>Turbid Discharge Incident at Cannonsville Dam</i>, John H. Vickers; NYC Environmental Protection; and William H. Hover, 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
Track D Session 3D: Construction II ACC Room 304D	Track E Session 3E: Concrete I ACC Room 303A	Track F Session 3F: Embankment Dams II ACC Room 303B
*Young Professional		
<p>Moderators: Stephen Whiteside, CDM Smith; and Scott Korab, Ballard Marine Construction</p> <p><i>Seismic Remediation of Perris Dam Using CDSM</i>, Wen Yan (Grace) Chen, Michael Driller and Steven Friesen, California Department of Water Resources</p> <p><i>Controlled Blasting for the Red Rock Hydroelectric Project</i>, Rachael V. Bisnett*, MWH, now part of Stantec; James Valentyn, Ames Construction; and Nicholas Johnson, Hoover Construction Co.</p> <p><i>Upriver Dam Spillway Rehabilitation</i>, Ray Trudgeon*, James H. Rutherford, Steve Burns, Val Kovalishyn, Ccee Chan* and Nikou Jalayeri*, Hatch</p> <p><i>Lakeside Ranch Stormwater Treatment Area – Lessons Learned During Design and Construction</i>, Danielle Neamtu*, Stephen Whiteside and Stephen Blair, CDM Smith</p>	<p>Moderators: George Kelley, Freese and Nichols, Inc.; and Guy Lund, Gannett Fleming, Inc.</p> <p><i>Investigating the Structural Safety of Cracked Concrete Dams</i>, Glenn S. Tarbox, MWH, now part of Stantec; Robin Charlwood, Robin Charlwood & Associates, PLLC; and Chris Hayes, CEATI International</p> <p><i>A New Approach for the Design of the Köroğlu RCC Arch/Gravity Dam</i>, Quentin Shaw, ARQ Consulting Engineers</p> <p><i>Upgrade and Spillway Modifications at Santa Anita Dam</i>, Sterling E. Klippel, Los Angeles County Department of Public Works; Vik Iso-Ahola, Glenn S.Tarbox and Martina Gelo, MWH, now part of Stantec; and George Manole, LACDPW</p> <p><i>Understanding the Performance of Aging Infrastructure: A 99-Year Old Multiple Arch Dam</i>, Vik Iso-Ahola, Glenn S.Tarbox, Mohammadreza Mostafa, Sean Ellenson*, Munit Bector and Ali Rasekh, MWH, now part of Stantec</p>	<p>Moderators: Robert Eichinger, Stantec; and Bob Bowers, O'Brien & Gere</p> <p><i>Considerations for Establishing Seepage Thresholds in Concrete-Faced-Rockfill-Dams</i>, Erik J. Malvick, California Department of Water Resources</p> <p><i>Geomembranes to Waterproof Embankment Dams</i>, John Wilkes, Alberto Scuero and Gabriella Vaschetti, Carpi</p> <p><i>Geotechnical Investigation of South Carolina Flood-Damaged Dams after the 2015 October Rainfall Event</i>, Inthuorn Sasanakul, Sarah L. Gassman, Charles E. Pierce, William Ovalle*, Ryan Starcher*, Emad Gheibi*, and Mostaqur Rahman* University of South Carolina</p> <p><i>Rough River Dam Phase 1B Exploratory Drilling and Grouting Program</i>, Conrad Ginther*, Black & Veatch; Dmitri Ivanov*, Advanced Construction Techniques; and Rolando Benitez, RIZZO Associates</p>
10:30 am - 11:00 am	Refresh Break	Exhibit Hall, ACC
Session 4D: Construction II ACC Room 304D	Session 4E: Concrete I ACC Room 303A	Session 4F: Embankment Dams II ACC Room 304B
<p><i>Design and Repair of a Power Intake Gate Sealing Surface Under Challenging Constraints</i>, Mike Carney and Don Thompson, Tetra Tech, Inc.; Roland Lwiindi, North South Power Company; and Eli Lundberg and Joshua Phillips, Tetra Tech, Inc.</p> <p><i>Post-Tensioning in an Underwater Environment: Wanapum Dam – Monolith 4 Spillway Repair</i>, Paul Krumm, Nicholson Construction</p> <p><i>Balancing Water Resources and Power Generation for the Metlakatla Indian Community</i>, Jesse Hutton and Scott Korab, Ballard Marine Construction</p>	<p><i>A Performance-Based Evaluation of Post-Tensioned Anchors Embedded Within a Concrete Gravity Dam</i>, Tae Ha Park*, Samantha Hoang*, Jonathan Lum*; and Ziyad Duron, Harvey Mudd College</p> <p><i>On the Use of Discrete Lumped Element Modeling for Insight into Concrete Dam Behavior</i>, Jonathan Lum*, Samantha Hoang*, Tae Ha Park* and Ziyad Duron, Harvey Mudd College; and Guy Lund, Gannett Fleming, Inc.</p> <p><i>Shear Strength of Concrete Lift Joints from Extensive Lab Testing Compared to Theoretical Results</i>, Dan D. Curtis, HATCH Ltd., Husein Hasan, Tennessee Valley Authority; and Gurinderbir S. Sooch*, HATCH Ltd.</p>	<p><i>Integrating a Multidisciplinary Field Investigation to Improve Assessment of Internal Erosion</i>, Cassandra M. Wagner*, Justin B. Rittgers and Bryan K. Simpson, Bureau of Reclamation</p> <p><i>Laboratory Investigation of Backward Erosion Piping Into Constricted Seepage Exits</i>, John Rice and Ibrahim A. Ibrahim*, Utah State University</p> <p><i>A Laboratory Examination of Filter Erosion Boundaries in an Embankment Dam</i>, R.J. Fannin, University of British Columbia; and M. Li and C. Anderlini, 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
Track A Session 5A: Monitoring ACC Room 304A	Track B Session 5B: Reservoir Sedimentation ACC Room 304B	Track C Session 5C: Earthquakes II ACC Room 304C
*Young Professional		
<p>Moderators: Emily Schwartz, Black & Veatch; and Amanda Sutter, USACE</p> <p><i>Monitoring San Vicente Dam Raise During Initial Fill</i>, Andrew Oleksyn, San Diego County Water Authority; Nathan Grima, City of San Diego Water Department; Anna Kolakowski, California Department of Water Resources; Larry Rodriguez, City of San Diego Water Department; and Jim Zhou, San Diego County Water Authority</p> <p><i>First Filling Instrumentation Monitoring of the Folsom Dam Auxiliary Spillway Control Structure</i>, Kenneth R. Pattermann and George Hu, USACE</p> <p><i>Effect Of Antecedent Groundwater Level On Piezometric Response During Flood Events</i>, Chun-Yi Kuo, Richard B. Hockett and Troy S. O'Neal, USACE</p>	<p>Moderators: Timothy Randle, Bureau of Reclamation; and Sean Smith, USACE</p> <p><i>Numerical Sediment Transport Modeling of Operations at Paonia Reservoir, Colorado</i>, Sean Kimbrel*, 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>, Bahareh Shoghli* and Yeo Howe Lim, University of North Dakota</p> <p><i>Sediment Transport Through Lake Clarke and Lake Aldred</i>, Jonathan M. G. Viducich* and Martin J. Teal, WEST Consultants, Inc.</p>	<p>Moderators: Mahmoudreza Mivehchi, BMP Engineering & Inspection Inc.; and Kenwarjit Dosanjh, HDR</p> <p><i>A Direct Finite Element Method for Nonlinear Analysis of Semi-Unbounded Dam-Water-Foundation Rock Systems</i>, Anil K. Chopra and Arnkjell Lokke, University of California</p> <p><i>Numerical Assessment of Hydrodynamic Loads Induced During Seismic Interaction Between Reservoir and Concrete Dam</i>, Jerzy Salamon, Bureau of Reclamation; and Jonna Manie, DIANA FEA BV</p> <p><i>Seismic Back Analysis of Monticello Arch Dam – Blind Prediction Workshop and Additional Analyses</i>, Emmanuel Robbe*, EDF Hydro Engineering Center</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
Session 6A: Monitoring ACC Room 304A	Session 6B: Reservoir Operations ACC Room 304B	Session 6C: Earthquakes II ACC Room 304C
<p><i>Leak Detection In Earth Dams and Levees Using Optical Fiber Distributed Temperature Sensors</i>, Maxime Tatin* and Vincent Lamour, Cementys; Stéphane Bonelli, Irstea; and Aurélie Garandet, Compagnie Nationale du Rhône</p> <p><i>Elephant Butte Dam UAV Data Collection and Photogrammetry</i>, Matthew Klein, Bureau of Reclamation</p> <p><i>Proposed Guidelines for Conducting a Performance-Based Evaluation of a Concrete Dam</i>, Samantha Hoang*, Tae Ha Park*, Jonathan Lum* and Ziyad Duron, Harvey Mudd College; and Guy S. Lund, Gannett Fleming, Inc.</p> <p><i>Reality Capture for Dam and Hydroelectric Facilities</i>, Adam Serock, HDR</p>	<p><i>To Release or Not to Release? Dam Operation Modeling Using Gridded Short-Term Forecast Rainfall</i>, Maged Aboelata, AECOM</p> <p><i>Blackstone River and Thames River Watershed CWMS Deployments</i>, Ben Zoeller, Amec Foster Wheeler</p> <p><i>Systems-Based Risk Analysis of Lake Mendocino Forecast-Informed Reservoir Operations with HEC-WAT</i>, Matthew McPherson and Leila Ostadrahimi, USACE</p> <p><i>HEC-ResSim 3.3 — New Features to Support Complex Studies</i>, Joan Klipsch, USACE</p>	<p><i>Non-Linear Time Domain Analysis of Ruskin Dam in LS-DYNA Including Reservoir-Foundation-Structure Interaction</i>, O. Penner*, B. Bergman*, S. Razavi-Darbar and D. Queen, BC Hydro; P. Léger and Martin Leclerc, École Polytechnique Montréal; and Yannick Boivin, Tetra Tech</p> <p><i>Boca Dam Spillway Nonlinear Analysis and Validation Study</i>, Jennifer E. Huggins, Roman Koltuniuk and Miguel Rocha, Bureau of Reclamation</p> <p><i>Nonlinear Seismic Evaluation of Perris Dam Outlet Tower</i>, Yusof Ghanaat and Zachary Harper, Quest Structures, Inc.</p> <p><i>Nonlinear Seismic Analysis of an Arch Dam Subjected to Very Intensive Earthquake Loading</i>, Gurinderbir S. Sooch* and Dan D. Curtis, 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
Track D Session 5D: Levees ACC Room 304D	Track E Session 5E: Concrete II ACC Room 303A	Track F Session 5F: Safety & Security ACC Room 303B
*Young Professional		
<p>Moderators: Elena Sossenkina, HDR; and Darren Mack, Sage Engineers, Inc.</p> <p><i>U.S. Levee Safety Coalition and International Community of Practice, Recent Activities and Updates</i>, Elena Sossenkina, HDR; and Michael Sharp and Noah Vroman, USACE</p> <p><i>USACE Levee Portfolio Report</i>, Noah Vroman, USACE</p> <p><i>Levee Safety Guidance Comprehensive Document Review</i>, Michael Sharp, USACE</p> <p><i>Inventory and Review of the Nation's Levees</i>, Jamie McVicker and Cathi Sanders, USACE</p> <p><i>Levee Safety Practices in the Keystone State</i>, Andrew J. Orlovsky*, Pennsylvania Department of Environmental Protection</p>	<p>Moderators: Vik Iso-Ahola, MWH, now part of Stantec; and Olga Zabawa, WSP Parsons Brinckerhoff</p> <p><i>Simplified Nonlinear Seismic Analyses of Gravity Dams</i>, Elisa Messio*, Wenbo Duan* and Najib Bouaanani, Polytechnique Montréal; and Benjamin Miquel*, Hydro-Québec</p> <p><i>Strontia Springs Dam: Methods to Better Understand Seismic Behavior</i>, Aimee L. Corn* and Guy S. Lund, Gannett Fleming, Inc.; and Darren J. Brinker and Erin Gleason, Denver Water</p> <p><i>Cracking In Thin Arch Concrete Dam – LS-DYNA Nonlinear Dynamic Structural Analysis</i>, Sherry Hamedian and Roman Koltuniuk, Bureau of Reclamation</p>	<p>Moderators: William Foos, Gannett Fleming, Inc.; and Paul Meeks, Worthington Products, Inc.</p> <p><i>Managing Threats Through Effective Security Programs</i>, J. A. Gloschat* and A. C. Baehr, Gannett Fleming</p> <p><i>Unmanned Aerial Vehicles – A Public Agency Approach to Deployment and Protection</i>, Katharine Killeen and John Rizzardo, California Department of Water Resources</p> <p><i>The Economics of Dam Security Post 9/11 and the Threat to Consumer Confidence</i>, Alexander B. Shannon, CH2M</p>
3:00 pm - 3:30 pm	Refresh Break	Exhibit Hall, ACC
Session 6D: Levees ACC Room 304D	Session 6E: Concrete II ACC Room 303A	Session 6F: Safety & Security ACC Room 303B
<p><i>Seismic Vulnerability Analysis of Slag Cement-Cement-Bentonite Seepage Cutoff Walls for Levees</i>, Vlad Perlea, AECOM; Khaled Chowdhury, USACE; Mary Perlea, AECOM; and Michael Kynett, USACE</p> <p><i>Advances in Design Procedures for Relief Well Lines in Variable Urban Settings</i>, Robert A. Jaeger*, Richard A. Keizer, Jr.* and Graham C. Bradner, GEI Consultants, Inc.; and Joseph Weber and Mark Stanley, HDR</p> <p><i>Explaining Pore Pressure Changes Due to Piping Through Changes in Hydraulic Conductivity</i>, Carolyne Bocovich*, Colorado School of Mines; Willem Kanning, Deltares; and Minal Parekh and Michael Mooney, Colorado School of Mines</p> <p><i>Design and Construction of Feather River West Levee Improvements</i>, Christopher Krivanec and Les Harder, HDR; and Michael Bessette, Sutter Butte Flood Control Agency</p>	<p><i>Comparison of Nonlinear Finite Element Analysis Methods Used to Simulate Post-Tensioned Anchorage in Concrete</i>, Vojislav Cvijanovic*, Mark Schultz and Blake Dolve, California Department of Water Resources</p> <p><i>Structural Inflection Points, and How They Enhance the Understanding of Structural Safety</i>, Guy Lund, Gannett Fleming, Inc., Kevin Marshall, Grant County Public Utility District; and Todd Barber, Southern Company</p> <p><i>Pseudo-Nonlinear Finite Element Analysis of Concrete Gravity Dams</i>, J. Taylor Perkins, Stantec; Husein A. Hasan, Tennessee Valley Authority; and Daniel A. Gilbert, Stantec</p> <p><i>Importance of RCC Mixture Lab Studies for the Design of Large Dams</i>, A. Garduno, M. Montero and F. Ballhausen, Comision Federal de Electricidad</p>	<p><i>Flood Risks from Spillways: Modeling and Communicating Non-Dam-Failure Impacts to Native American Tribes</i>, Rinda Tisdale, Matthew Young and Chris Clopper*, Bureau of Indian Affairs</p> <p><i>City of Dubuque, Iowa: Defining Emergency Actions with a Levee Breach Evaluation</i>, Andrew McCoy, HDR; Deron Muehring, City of Dubuque; and Rusty Jones, HDR</p> <p><i>Public Safety and Unauthorized Extreme Activities at Dams</i>, Steven Barfuss, Utah State University; Brian M. Crookston, Schnabel Engineering; and Kade Beck* and Ryan Weller*, Utah State University</p> <p><i>Public Safety and Social Media</i>, Sharon Nicole Roach*, 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