

## Technical Program Schedule

(All final schedule changes will be in the Guidebook Mobile App)

### **MONDAY, SEPTEMBER 17 – AFTERNOON**

#### **Technical Session #1 - Dam Symposium Part I**

*(Sponsored By RJH Consultants, Inc.)*

The Dams Technical Working Group of AEG is pleased to host the General Dams Symposium at the 13<sup>th</sup> IAEG Congress and AEG Annual Meeting being held in San Francisco, September 2018. The theme of this year's symposium is "Infrastructure Improvements to Dams and Levees". Topics of keen interest include international dam infrastructure and improvements to existing structures as well as a variety of case histories from the United States and other countries. There will be two keynote lectures; the first by Professor J. David Rogers dealing with California's Experience with Dams and Disasters. The second keynote lecture delivered by Dr. Donald A. Bruce will focus on the Application of the Deep Mixing Method for Dam and Levee Remediation. The many speakers participating in the General Dams Symposium will come from a range of backgrounds including International government agencies, U.S. Federal and State agencies, hydropower companies, academia and private consultants. The focus of the General Dams Symposium will be on dams and levees and the important remediation and dam safety work being accomplished on the aging inventory of key water resource structures. Given the international flavor of the Congress, there will be many lessons learned from notable projects located around the world.

**Room:** Grand Ballroom B

**Conveners:** Brian Greene and Ed Friend

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:40	J. David Rogers	KEYNOTE - California's Experience with Dams and Disasters
2:40-3:00	Todd Loar	Failure, Emergency Response, Mitigation, and Engineering Geology of Guajataca Dam Spillway, Puerto Rico
3:00-3:20	David Simpson	25 Years of Dam Foundation Investigations in California, or What I Have Tried to Learn Along the Way
3:40-4:00	Holly Nichols	Seismic Remediation of Perris Dam – Foundation Improvement Design and Construction Geology
4:00-4:20	Visty Dalal	Rehabilitation of the Historic Devil's Backbone Dam, Washington County, Maryland
4:20-4:40	Kenneth Pattermann	Folsom Dam Auxiliary Spillway Rock Anchor Installation (Presented By Kylan Kegel)
4:40-5:00	Gary Rogers	Geologic, Construction and Technical Challenges at the Expansion of the Terror Lake Hydroelectric Facility on Kodiak Island, Alaska

#### **Technical Session #2 - Geology in the Community Symposium**

As professional geologists, we provide a valuable service to public health and safety which, in its own right, is a tremendous community service. However, there is so much more that we can offer our communities given our skills and knowledge. This symposium will spotlight multiple examples of geologists' participation internationally in projects where an understanding of geology is rarely available due to cost and/or education. Providing drinkable water resources and protecting communities against landslide hazards are among a few of the examples of how we can offer our capabilities to under-privileged communities and populations. Please join us for powerful and emotional presentations and discussion and how YOU can become involved in these rewarding opportunities!

**Room:** Marina

**Convener:** Bruce Hilton

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	Bruce Hilton	Expanding Clean Water in a Rural Town in Shisasari, Kenya
2:00-2:20	Marina Drazba	Building Coping Capacities to Landslide Risk Within a Refugee Camp, a Case Study
2:20-2:40	David LaPorte	Evaluating Landslide Risk Management in Guatemala City through a Study of Risk Perception and Behavior Changes
2:40-3:00	Ethan Faber	Guatemala City Landslide Risk Evaluation and Reduction Tool Project (CERRPED) Status: Successes and Lessons Learned
3:00-3:20	Ethan Faber	Engineers Without Borders Projects in Landslide Terrain: Engineering Geologists as "Consultants" for Non-Profit Work

#### **Technical Session #3 - Environmental Characterization of Minerals & Pipe Erosion Modeling**

**Room:** Bayview A

**Moderator:** Pedro Martins

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
3:40-4:00	Louis Wong	Modeling Grain Size Heterogeneity Influences on Mechanical Behavior of Crystalline Rocks under Compressive Loading
4:00-4:20	Hasan Arman	Degradability Characteristics of Evaporite Rocks from Al Ain City, United Arab Emirates
4:20-4:40	Yang Yang	Influence of fine Content on the Mechanical Properties of Sand Subjected to Local Particle Loss by Piping
4:40-5:00	Pedro Martins	Piping Erosion in Volcanic Soils Challenges For Infrastructure Projects in New Zealand

#### Technical Session #4 - Landslide Inventory and Susceptibility Mapping

Room: Seacliff AB

Moderator: Erica Goto

Time	Speaker	Title
1:40-2:00	Anika Braun	Landslide Susceptibility Mapping in Tegucigalpa, Honduras, with Data Mining Methods
2:00-2:20	Mohammad Feruj Alam	Weathered Rock Slope Stability Assessment and Risk Mitigation Measures – A case study from UKM Campus, Bangi, Selangor, Malaysia
2:20-2:40	Xiangrui Duan	Probabilistic Stability Analysis of Soil Slope Reinforced with Anchors
2:40-3:00	Hannah Chapella	Landslide Inventory and Susceptibility Models, Prestonsburg 7.5-Minute Quadrangle, Kentucky, USA
3:00-3:20	Paz Fernández	2D Horizontal Landslide Displacement Estimation by Multitemporal Image Correlation
3:40-4:00	William Burns	Inventory Mapping of Large Deep Landslides in Oregon
4:00-4:20	Julia Frazier	Regional Susceptibility Modeling Using Multiple Methods, with an Example from Boulder County, Colorado
4:20-4:40	Erica Goto	Modeling Slope Instability for Shallow Landslides at Sedgwick Reserve using SHALSTAB Equations in RStudio
4:40-5:00	Chyi-Tyi Lee	Comparison of Landslide Susceptibility Models Trained from Inventories of Different Triggering Events in the Same Basin

#### Technical Session #5 - Aggregates Symposium

Room: Garden Room

Convener: Atiye Tugrul

Time	Speaker	Title
1:40-2:00	Stephen Wilkinson	An Assessment of Particle Characteristics for the Analysis of Wind Turbulence Generated Gas Transport
2:00-2:20	Isabel Fernandes	Study of Hungarian Rocks Regarding Potential Reactivity to Alkalis (Presented By Ákos Török)
2:20-2:40	Kitty Chan	The Search for New Aggregate Sources in Hong Kong
2:40-3:00	Atiye Tugrul	Aggregate Mining in Megacities and Existing Problems: An Example from İstanbul, Turkey
3:00-3:20	Balázs Czinder	Long-Term Wear of Aggregates Assessed by Micro-Deval Tests (Presented By Ákos Török)
3:40-4:00	Dennis Anderson	2018 Electrical Density Gauge Model E For Compacted Base Foundation Construction Quality Control
4:00-4:20	Maria del Pilar	Petrographic Characterization of Waste Rocks: Applicability Durante Ingunza as Concrete Aggregates
4:20-4:40	Aderbal Correa	Aggregates for the Greater Sao Paulo Megacity – An Undeveloped Resource Case Study
4:40-5:00	Geoffrey Rigby	Vibration Considerations for a New Aggregate Operation Next to a RCC Dam

#### Technical Session #6 - Tunnel Symposium Part I

The 2018 Tunneling Symposium features twenty-two presentations from around the world demonstrating the importance of engineering geology as one of the key tenants of good underground construction project design and implementation

Room: Grand Ballroom C

Conveners: Paul Headland/ Ike Isaacson/Mike Piepenburg

Time	Speaker	Title
1:35-1:40	Gary Brierley	Introduction of Keynote Don Deere
1:40-2:20	Don W. Deere	Tunnel Symposia Keynote: Lessons Learned from Dr. Don U. Deere, The Consummate Engineering Geologist
2:20-2:40	Jeb Pittsinger	First Use of SEM Tunneling Methods in Vermont - Interstate 89 Culvert Replacement (Presented By Eric Prantil)
2:40-3:00	Jon Pearson	Culvert Construction under I-89 in Vermont using the Sequential Excavation Method
3:00-3:20	Richard DePew	Tunnel Boring Machine Utilization as a Viable Alternative to Designed Hand Mining Methods on the Dugway South Relief Sewer Project
3:40-4:00	Jon Y. Kaneshiro	Engineering Geological Considerations and Case Histories for Bored Tunnels in Mixed Face Rock/Soil Ground
4:00-4:20	Peter Ellecosta	Wear Phenomena in TBM Hard Rock Drilling Reasons and Consequences
4:20-4:40	Kuroschi Thuro	Prediction of Drilling Rates and Bit Wear in Hard Rock Drill and Blast Tunneling
4:40-5:00	Giulia Bossi	Four Years Monitoring Experience of Displacements induced by a Large Landslide in a Tunnel Serving a National Road

### Technical Session #7 - Seismogenic Landslide Hazards

Room: Seacliff CD

Moderator: Weiwei Zhan

Time	Speaker	Title
1:40-2:00	D. Scott Kieffer	Landslides Triggered in Sindhupalchok During the M 7.8 Nepal-Gorkha Earthquake of April 25, 2015
2:00-2:20	Zang Mingdong	Coseismic Landslide Hazard Map after the 20 April 2013 Lushan Earthquake, Sichuan Province, China
2:20-2:40	Chao Wei-An	A Comprehensive Seismic Monitoring of Active Landslides: Precursor, Sliding and Afterslide
2:40-3:00	Chandani Bhandari	Risk Understanding of People after the 2015 Gorkha Earthquake in the Pokhara Valley of Nepal
3:00-3:20	Weiwei Zhan	Size-Frequency Characteristics of Landslides Induced by Three Recent Major Earthquakes in the Longmen-shan Belt, Southwestern China
3:40-4:00	Kafle Kumud	Landslide Hazard Mapping In Melamchi Municipality: In Context of Nepal Earthquake 2015
4:00-4:20	Yang Zhihua	Predicting Landslide Scenes under Potential Earthquake Scenarios in the Xianshuihe Fault Zone, Southwest China
4:20-4:40	Cao, Chen	Landslide Susceptibility Analysis in Vertical Distribution Law of Precipitation Area: Case of Xulong Hydropower Station Reservoir, Southwestern of China
4:40-5:00		Discussion Led by Moderator

### Technical Session #8 - Quantifying Climate Change

Room: Bayview B

Moderator: Briget Doyle

Time	Speaker	Title
1:40-2:00	Maria Ferentinou	A Coastal Sensitivity Index Assessment of KwaZulu-Natal, East Coast of South Africa
2:00-2:40	Angelo Doglioni	Effects of Climatic Changes on Groundwater Availability in a Semi Arid Mediterranean Region
2:40-3:00	Flora F. Menezes	Geomechanical Behavior Changes of a Bunter Sandstone and of a Borehole Cement due to scCO <sub>2</sub> Injection Effects
3:00-3:20	Regina Pläsken	Analyzing the Sensitivity of a Distinct Element Slope Stability Model: A Case Study on the Influence of Permafrost Degradation on Infrastructure Stability
3:40-4:00	Yonggang Jia	Dominant Role of Sediment Fluidization in Determining Seabed Erosion
4:00-4:40	Jasper Cook	Engineering Geology and Climate Impact Adaptation for Rural Access Road Networks in Developing Countries
4:40-5:00		Discussion Led by Moderator

### Technical Session #9A - Mineralogy / Rock Mechanics

Room: Waterfront AB

Moderator: Tej Gautam

Time	Speaker	Title
1:40-2:00	Martin Potten	Geomechanical Investigation of High Priority Geothermal Strata in the Molasse Basin, Bavaria (Germany)
2:00-2:20	Tej Gautam	Slaking Progression of Clay-Bearing Rocks under Natural Climatic Conditions
2:20-2:40	Yilin Gui	Modeling of Soil Desiccation Cracking with a Hybrid Continuum-Discrete Element Method
2:40-3:00	Elena Mraz	Diagenesis of the Upper Jurassic Carbonate Rocks within Deep Geothermal Boreholes of the North Alpine Foreland Basin in Germany
3:00-3:20	Nicholas Vlachopoulos	The Effect of Jointing in Massive Highly Interlocked Rockmasses under High Stresses by using a FDEM Approach

### Technical Session #9B - Geochemical / Water Contamination

Room: Waterfront AB

Moderator: Christina Villeneuve

Time	Speaker	Title
3:40-4:00	Linlong Mu	Analytical Method for Monopiles under V-H-M Combined Loads in Sandy Seabed
4:00-4:20	Angelo Doglioni	Identification of Anomalous Morphological Landforms and Structures Based on Large Discrete Wavelet Analysis
4:20-4:40	Hu Zheng	On the Application of Photo-Elasticity Techniques in Geotechnical Engineering
4:40-5:00		Discussion Led by Moderator

## **TUESDAY, SEPTEMBER 18 – MORNING**

### **Technical Session #10 - Dams Symposium Part II**

**(Sponsored By RJH Consultants, Inc.)**

**Room:** Grand Ballroom B

**Conveners:** Holly Nichols & Visty Dalal

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Kevin Richards	Evaluation of Design Alternatives to Address Internal Erosion Risk: Moose Creek Dam
9:40-10:00	Christopher Goetz	Engineering Geologic Considerations for the Trampas Canyon Dam and Reservoir Project; Orange County, California
10:20-10:40	Scott Walker	Assessment of Concrete Chute and Unlined Spillways within the Tennessee Valley Authority Dam Inventory
10:40-11:00	Thomas Terry	Guajataca Dam – Risk informed Interim Risk Reduction Measures
11:00-11:20	Scott Ball	One Way to Build an Earth Fill Dam - a Case Study
11:20-11:40	Ed Friend	Rehabilitation of North Lake Dam
11:40-12:00	Carrie Randolph Loar	Chimney Hollow Reservoir Geotechnical Investigation for the Deeply Weathered Bedrock in the Left Abutment

### **Technical Session #11 - Lidar/Technology: Landslide Application of Unmanned Aerial Vehicles (UAV) Symposium Part I**

Remote sensing technology encompasses different types of sensors (e.g., Synthetic Aperture Radar (SAR), Laser imaging Detection and Ranging (LiDAR), Thermal, Optical, Multispectral, and Hyperspectral) and platforms (e.g., Satellites, Aircraft, and Unmanned Aerial Vehicles (UAV)). These sensors and platforms enable us to collect data and monitor earth surface for engineering geology applications at different spatial scales at locations where comparable physical measurements are difficult/impossible. The recent advancements in UAV deployment have extended the use of remote sensing technology and enabled to overcome some of the challenges related to temporal and spatial resolution associated with satellite platforms. This technical session would broadly cover the application of remote sensing technology for engineering geology and landslide applications.

**Room:** Bayview A

**Convener:** Rudiger Escobar Wolf

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-10:00	Wendy Zhou	InSAR Applications for Landslides
10:00-10:20	John deLaChapelle	Evaluation of InSAR Methods to Identify Historical Landslide Movement in Dense Landslide Terrain in North Dakota
10:20-10:40	El Hachemi Bouali	Landslide Monitoring at Three Orders of Magnitude: PSI, COSI-Corr, and GPS Measurements at the Portuguese Bend Landslide Complex in Southern California (Presented by Rudiger Escobar-Wolf)
10:40-11:00	Joshua Wagner	Unmanned Aerial Vehicles (UAVs) for Improved Rock Mass Structural Data Acquisition and Analysis
11:00-11:20	Qian Liu	Three-Dimensional Data Model Based on UAV Photogrammetry for Reconstructing the Geometry of Blocky Rock Mass on Natural Rock Slopes (Presented By D. Scott Kieffer)
11:20-11:40	Kong Deheng	A New Approach for Automatic Identification and Characterization of Rock Mass from 3D Point Clouds
11:40-12:00	Bryan Simpson	DRONES! Geologic Discontinuity Mapping Using UAS (Unmanned Aerial System) Technology and Photogrammetric Methods for Rock Fall Mitigation

### **Technical Session #12 - Landslides and Infrastructure**

**Room:** Seacliff CD

**Moderator:** Stephen Evans

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Robert Givler	Penitencia Creek Landslide Evaluation and Seismic Retrofit of Large Diameter Water Conveyance Pipelines in San Jose, CA
9:40-10:00	Marinos Vassilis	Landslide geohazard and risk assessment along a Natural Gas Pipeline in European Territory
10:20-10:40	Stephen Evans	The SW 10th Place Landslide Remediation
10:40-11:00	Singh Ankit	Continuous Slope Mass Rating and Kinematic Analysis for Slope Stability Along the Larji-Sainj road, Himachal Pradesh (Presented By Tarun Singh)
11:00-11:20	Stuart Millis	An Example of Landslide Scar Remediation by Soil Bioengineering from Hong Kong
11:20-11:40	Richard Gray	Colluvium in the Appalachian Plateau Physiographic Province
11:40-12:00	Nicholas Farny	Utilization of the Unstable Slope Management Program for FHWA-Western Federal Lands Projects

**Technical Session #13 - Landslides and Society: Hazards, Risks, and Communication Symposium****Room:** Seacliff AB**Convener:** Jennifer Bauer

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Stuart Millis	Assessment and Mitigation of Natural Terrain Hazards: A Case Study from Sham Wat Village in Hong Kong
9:40-10:00	Ann Williams	Should We Close the Road?
10:20-10:40	Valentina Svalova	Landslide Risk Assessment, Management and Reduction for Urbanized Territories (Presented by Ksenija Fedotova)
10:40-11:00	Lun-Wei Wei	Applying Susceptibility and Rainfall Threshold to the Establishment of Landslide Early Warning System in Western Taiwan
11:00-11:20	Jason Woodward	Decreasing Erosion Rates on Industrially Managed Timberlands
11:20-11:40	John Cripps	A Review of Some British Mixed Lithology Mudstone Sequences with Particular Emphasis on the Stability of Slopes
11:40-12:00	Joe Smith	Slope Stability in San Francisco: A Practical Approach to Managing Urban Geotechnical Risks

**Technical Session #14 - Tunnel Symposium Part II****Room:** Grand Ballroom C**Conveners:** Paul Headland/ Ike Isaacson/Mike Piepenburg

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-10:00	Gary Brierley	Engineering Geology as Applied to Tunneling Projects
10:20-10:40	Carrie Randolph Loar	Chimney Hollow Reservoir Inlet/Outlet Tunnel Geotechnical Investigation Design
10:40-11:00	Marlène Villeneuve	Using Tunnel Boring Machine Penetration Tests to Quantify Performance in Hard Rock
11:00-11:20	Kenneth Johnson	Estimating Groundwater Inflow in Tunneling: A Case History for the Lower Meramec Tunnel, St. Louis, MO
11:20-11:40	Filipe Jeremias	Engineering Geological Studies for the New Drainage Tunnels of Lisbon
11:40-12:00	Haris Saroglou	ARMR, a Classification System for Rating of Anisotropic Rock Masses

**Technical Session #15 - Engineering Geology of Mélanges, Bimrocks and Soil/Rock Mixtures Symposium Part I**

Mélanges are rock bodies composed of complex geological mixtures of strong hard blocks within weaker sheared matrices. Mélange rock masses are often the most intractable members of the family of heterogeneous rocks known as “bimrocks” (block-in-matrix rocks), which also includes sheared serpentinites, fault rocks, weathered rocks, lahars, etc. Bimsoils are analogous soil/rock mixtures such as colluvium and saprolites. Mélanges, bimrocks and bimsoils are found at all scales of engineering interest and cause engineering problems around the world. This Symposium highlights a wide range of recent international engineering geologic experience in development of rational and novel approaches to characterize the geological chaos of mélanges, bimrocks, bimsoils and other soil-rock mixtures. A one-day Field Trip complements this Symposium by introducing the Franciscan Complex in the San Francisco Peninsula where original contributions for understanding these materials were developed in the 1990s, and explores the engineering geology experience advanced by local geopractitioners and researchers.

**Room:** Garden Room**Conveners:** Ed Medley and Julien Cohen-Waeber

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Ed Medley	Keynote Lecture: Keynote Lecture: 25 Years of Characterizing Melanges, Bimrocks, and Similar Rock-Soil Mixtures
9:40-10:00	Ed Medley	Keynote Lecture: 25 Years of Progress in Characterizing Melanges, Bimrocks, and Similar Rock-Soil Mixtures (PART 2)
10:20-10:40	John Wakabayashi	Insight into Geologic Mapping of Mélanges: Implications for Engineering Geologic Investigations
10:40-11:00	George Freitag	OR 242 Burma – A Challenging Oregon Mélange Landslide, Coos County, Oregon
11:00-11:20	Exneyder Montoya-Araque	Automatic Generation of Tortuous Failure Surfaces in Bimsoils to Evaluate the Stability of 2D Slopes (Presented By Ludger Oswaldo Suarez-Burgoa)
11:20-11:40	Julien Cohen-Waeber	A Characterization of Precipitation-Modulated Complex Landslide Behavior in Franciscan Mélange from InSAR time series of the San Francisco East Bay Hills, California
11:40-12:00	Marcos Musso	Mechanical Behavior of Residual Granitic Soil as Road Raw Material

### Technical Session #16 - Naturally Occurring Asbestos Symposium Part I

This is a rare opportunity to hear how industrialized countries from around the world are dealing with NOA issues. From the Alps, to the Australian outback, to the Andes to the California Coastal Ranges and Sierra Foothills, the issue of NOA, how it occurs, how it is identified, how it is regulated and controlled will be explored on a global scale.

*Sponsored by Kleinfelder*

**Room:** Bayview B

**Convener:** Mark Bailey

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Mark Bailey	Introduction to the IAEG NOA Symposium
9:40-10:00	Martin Harper	Naturally Occurring Asbestos (NOA): Risks and Regulations
10:20-10:40	Chris Kirkham	Cal/OSHA Regulation of Work with Naturally Occurring Asbestos (Presented By Jeff Ferrell)
10:40-11:00	Bradley Erskine	Applying the OSHA Asbestos Standard for Building Materials to NOA on Excavation projects: An Example from the Calaveras Dam Replacement Project
11:00-11:20	Robert Krieger	California Air Resources Board - NOA Regulations
11:20-11:40	Bradley Erskine	The CARB Asbestos ATCM: A Challenge to the Professional Geologist
11:40-12:00	Francesco Turci	New Tools for the Evaluation of Abestos-Related Risk During Excavation in NOA-Rich Geological Setting

### Technical Session #17 - Geotechnical/Site Characterization for Infrastructure: High Speed Rail, High Rise Buildings, Bay Mud, Coastal Development - Part I

**Room:** Waterfront AB

**Moderator:** James Hamel

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Afolabi Olaniyi Adebayo	Foundation Analyses using Geotechnical Investigation for Proposed Offices and Warehouse Development along Lagos Ibadan Expressway, Ewu Osi Village Sagamu Local Government Area Ogun State, Nigeria
9:40-10:00	Luke Brouwers	Beneath the Sands: A Glimpse of Engineering Geological Conditions of Dubai, UAE
10:20-10:40	Dru Nielson	Geomorphology, Provenance, and Depositional Models: Application to Trenchless Infrastructure Design and Construction
10:40-11:00	Mario Quinta-Ferreira	Geological-Geotechnical Studies for the S11D Ore Transport Railway Line, Brazil
11:00-11:20	S. Lindsay Poluga	Rock Mass Characterization of Mount Rushmore National Memorial, Keystone, South Dakota
11:20-11:40	James Hamel	Harry Ferguson's Theory of Valley Stress Release in Flat-Lying Sedimentary Rocks
11:40-12:00	Murad Abu-Farsakh	Design and Load Testing Program on Instrumented Large Diameter Open Ended Test Piles

### TUESDAY, SEPTEMBER 18 –AFTERNOON

#### Technical Session #18 - Dam Symposium Part III

*Sponsored By Schnabel Engineering*

**Room:** Grand Ballroom B

**Conveners:** Kerry Cato and Cassandra Wagner

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:20	Donald Bruce	Keynote #2: The Application of the Deep Mixing Method to Dam and Levee Remediation
2:20-2:40	Scott Walker	Boone Dam Part 1: An Overview of the Issues at an Earth Embankment Founded on Karst
2:40-3:00	Scott Walker	Boone Dam Part 2: A Summary of the Seepage Mitigation Project
3:00-3:20	Don Hoirup	West Shore Lake Oroville Lineament Geologic Investigation, Northern California (Part 1)
3:40-4:00	Don Hoirup	West Shore Lake Oroville Lineament Geologic Investigation, Northern California (Part 2) (Presented by Ozgur Kozaci)
4:00-4:20	Scott Lewis	Spontaneous Exfoliation of Granitic Dome Damages Overlying Concrete Dam – Case History
4:20-4:40	Hawkins Gagnon	3D Geologic Modeling of Boundary Dam, Metaline Falls, WA: A Modern Approach to Understanding Foundation Geology

### Technical Session #19 - Improving Engineering Geology: Relationships among Education, Licensure, Guidelines, and Practice — A Global Perspective Symposium

This session explores the status and future of engineering geology practice, licensure and education. The session explores current and future contributions of engineering geologists to urban development, the greatest challenge to the global construction industry in the 21st century, and to geo-disaster management in southeast Asia. Additional presentations address licensure/registration in Canada and Europe, and challenges for engineering geology education.

**Room:** Marina

**Conveners:** Keith Turner, Fred Baynes, Fred, and Marlène Villeneuve

Time	Speaker	Title
1:40-2:00	Ian Jefferson	A Future Role for Engineering Geology (Presented By Martin Culshaw)
2:00-2:20	Nicholas Vlachopoulos	Improving Public Safety through Engineering Geology: Relationships among Education, Licensure, Guidelines and Practice Required by Law A Canadian Perspective
2:20-2:40	Fintan Buggy	Registration of Ground Engineering Professionals – A European Perspective (Presented By Kurosch Thuro)
2:40-3:00	Marlène Villeneuve	Engineering Geology Education in Australasia
3:00-3:20	Ranjan Kumar Dahal	South Asian Perspectives in Understanding Role of Engineering Geology for Geodisaster Management
3:40-4:00	Marcos Musso	Active Learning Teaching in Geotechnical Courses in Uruguay
4:00-4:40		Discussion: Led by Conveners

### Technical Session #20 - Lidar/Technology: Landslide Application of Unmanned Aerial Vehicles (UAV) Symposium Part II

**Room:** Bayview A

**Convener:** Rudiger Escobar Wolf

Time	Speaker	Title
1:40-2:20	Mathew Lato	Good Data, Good Decisions: Applying 3D Technology to Solve Practical Engineering Geology Problems
2:20-2:40	Richard Steckel	Current Requirements for FAA Commercial Remote Pilot Operations and Process for Obtaining Access to FAA Controlled Airspace
2:40-3:00	Georg Erharter	UAV Based Analyses of Discontinuities and Mechanics of Rockfall Events in Alpine Terrain (Pletzachkogel/Tyrol/Austria) (Presented by D. Scott Kieffer)
3:00-3:20	Efstratios Karantanellis	Multitemporal Landslide Mapping and Quantification of Mass Movement in Red Beach, Santorini Island using LiDAR and UAV Platform
3:40-4:00	Peter Bobrowsky	Using Unmanned Aerial Vehicles for Mapping and Monitoring of Landslides in British Columbia, Canada
4:00-4:20	Vitor Santini Müller	UAS Use in 3D Geotechnical Slope Stability Analysis
4:20-4:40	Joshua Wagner	Unmanned Aerial Vehicle (UAV) Datasets: A Powerful Tool for Spillway Condition Assessments

### Technical Session #21 - Landslides and Society: Hazards, Risks, and Communication Symposium Part II

**Room:** Seacliff AB

**Convener:** Jennifer Bauer

Time	Speaker	Title
1:40-2:00	Jennifer B. Bauer	Landslide Inventory and Susceptibility Mapping in Jackson County, North Carolina, USA - A Public/Private Partnership
2:00-2:20	Timothy Blackwood	Risk-Based Rockfall Mitigation Strategies in Hawaii, USA
2:20-2:40	Jordi Corominas	Landslide Hazard: What does it Mean?
2:40-3:00	Erica Goto	Spatial Distribution and Kernel Density of Landslide Risk Areas Impacted by Anthropogenic Activities in Sao Paulo City, Brazil
3:00-3:20	William Pollock	Quantitative Co-Seismic and Precipitation-Induced Landslide Risk Mapping for the Country of Lebanon
3:40-4:00	Valentina Svalova	Monitoring and Risk Management for Landslide Hazard in Taiwan (Presented by Ksenija Fedotova)
4:00-4:20	Phil Flentje	Landslide Total Susceptibility
4:20-4:40	Filipe Jeremias	Assessment Proposal for Definition of Slope Stabilization Measures in Urban Areas: the Fontainhas Scarp, Oporto (Portugal)

### Technical Session #22 - Tunnel Symposium Part III

**Room:** Grand Ballroom C

**Conveners:** Paul Headland/ Ike Isaacson/Mike Piepenburg

Time	Speaker	Title
1:40-2:00	Ashton Krajnovich	A Bayesian Approach to Adaptive and Predictive 3-D Geologic Modeling for Tunneling Projects
2:00-2:20	Nora Lewandowski	Updated PSHA for San Francisco Public Utilities Commission's Mountain Tunnel, Sierra Nevada Foothills, California
2:20-2:40	Masashi Nakaya	Fundamental Study on Three Dimensional Seismic Reflection Method using Excavation Blasting of Mountain Tunnel as Source

2:40-3:00	Chunxiao Liu	Destruction Law of Rectangular Tunnel Structure Based on the Theory of Plastic Hinge
3:00-3:20	Linde-Arias, Emilio	Development of the Ground Model and Depressurization Design for the Construction of a Cross Passage in London Tertiary Basin
3:40-4:00	Yiguo Xue	A New Risk Prediction Model of Water or Mud Inrush in a Cross-harbor Tunnel
4:00-4:20	Kazuhiro Onuma	Evaluation Method for Rock Condition by Spectrogram of Seismic Waves Generated at Tunnel Excavation Blasting
4:20-4:40	Xiaojun Li	Stochastic, Goal-oriented Rapid Impact Modeling of Uncertainty and Environmental Impacts in Poorly-Sampled Sites Using Ex-Situ Priors

### Technical Session #23A - Engineering Geology of Mélanges, Bimrocks and Soil/Rock Mixtures Symposium Part II

**Room:** Garden Room

**Conveners:** Ed Medley and Julien Cohen-Waeber

Time	Speaker	Title
1:40-2:00	Vassilis Marinos	Geotechnical Characterization of Tectonically Disturbed Heterogeneous Rock Masses with the GSI system
2:00-2:20	Haris Saroglou	Characterization of Bimrocks using a New Classification Index (BCI)
2:20-2:40	Julien Cohen-Waeber	Geological Engineering of Mass-Excavations in a Chaotic Rock at Landfill Sites in the San Francisco Bay Area
2:40-3:00	Akos Török	Engineering Geological and Geotechnical Site Characterization of Two Highway Tunnels: Hard Soil – Soft Rock Transitions
3:00-3:20		Discussion Led By Conveners

### Technical Session #23B - Miscellaneous Geological Topics

**Room:** Garden Room

**Moderator:** Greg Hempen

Time	Speaker	Title
3:40-4:00	Greg Hempen	Reducing Impacts Potentially Triggered By Blasting
4:00-4:20	Martin Culshaw	A Short History of Engineering Geology and Geophysics at the British Geological Survey Part 2: Engineering Geological Mapping
4:20-4:40	Yaoru Lu	Intelligent Ecological and Sustainable City Clusters

### Technical Session #24 - Naturally Occurring Asbestos Symposium Part II

*Sponsored by Kleinfelder*

**Room:** Bayview B

**Convener:** Mark Bailey

Time	Speaker	Title
1:00-2:00		Expert Panel Discussion on NOA Regulations Around the World (Chaired by Mark Bailey)
2:00-2:20	Stefan Pierdzig	Regulations concerning Naturally Occuring Asbestos (NOA) in Germany – Testing Procedures for Asbestos
2:20-2:40	Marc Hendrickx	NOA in Australia: History of Investigation, Regulation and Emerging Issues
2:40-3:00	Erell Leocat	Naturally Occurring Asbestos in France: a Technical and Regulatory Review
3:00-3:20	Florence Cagnard	Naturally Occurring Asbestos in France: Geological Mapping, Mineral Characterization and Regulatory Developments
3:40-4:00	Sungjun Yoon	NOA Management Status in S. Korea and NOA in Janghang Double Track Railway Project (Presented By Yul Roh)
4:00-4:20	Leticia Lescano	Naturally Occurring Asbestos in Argentina. A Compilation of Case Studies
4:20-4:40	Mark Bailey	Asbestiform Minerals of the Franciscan Assemblage in California with a Focus on the Calaveras Dam Replacement Project

### Technical Session #25 - Geotechnical/Site Characterization for Infrastructure: High Speed Rail, High Rise Buildings, Bay Mud, Coastal Development - Part II

**Room:** Waterfront AB

**Moderator:** Ann Williams

Time	Speaker	Title
1:40-2:00	Siqi Xiao	Model Test of Single Pile Installed into Clay under Vertical Dynamic Load
2:00-2:20	Takuya Urakoshi	A Flood And Slop Failure Disaster Mitigation System for Train Operation Using the Precipitation Forecast Data
2:20-2:40	Charles Wilk	Estimating Sustainability Benefits from Use of Blended Cements and Slag Cement at Geotechnical Projects (Presented By Joshua Patterson)
2:40-3:00	Afolabi Olaniyi Adebayo	Assessment of Lithological Layers for a Shallow Foundation Using Integration of Geophysical and Geotechnical Investigation at IGBONI Boys College, Yaba, Lagos, South-Western Nigeria
3:00-3:20	Afolabi Olaniyi Adebayo	Evaluation of Sub Base/Subgrade Soils Along Ikorodu-Shagamu Road, Shagamu, Southwestern, Nigeria



3:40-4:00	Lynne Yost	“Poop, Power & Plant Food” Recycling Human Waste Using Methane Digestion in a Historic Peat Marsh, Irvine, California
4:00-4:20	Ann Williams	Designing our Future Infrastructure to Clean Up the Past
4:20-4:40		Discussion Led By Moderator

#### **THURSDAY, SEPTEMBER 20 –MORNING**

##### **Technical Session #26 - Rockfall I: Case Histories and Hazard Studies**

**Room:** Garden Room

**Moderator:** Tim Mote

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Tim Mote	Site-Specific Rockfall Risk Assessments and Rockfall Protection Structure Design Following the 2010/2011 Canterbury Earthquake Sequence
9:40-10:00	Carl Jacklitch	Factors Contributing to Rockfall Occurrence and the Associated Risk in Rockville, Utah
10:00-10:20	Jordi Corominas	Effects of Rockfall Fragmentation in the Assessment of Hazard and Risk
10:20-10:40	Eric Smith	What If the Rock Only Threatens to Fall? Emergency Response to a Decoupled Cliff Face in Washington State
10:40-11:00	Louise Vick	The Influence of Inherited Bedrock Structure on the Deformation of Unstable Rock Slopes in Northern Norway
11:00-11:20	Maria Ferentinou	Rockfall Hazard Assessment at the World Heritage Site of Giants Castle Main Camp, Drakensberg, South Africa
11:20-11:40	Kristofer Marsch	Comparison of mechanically determined with profile-based Joint Roughness Coefficients
11:40-12:00	Xuefeng Mei	Study on Coefficient of Restitution and Peak Impact of Rockfall Based on Elastic-Plastic Theory (Presented By Xiewen Hu)

##### **Technical Session #27 - Landslide Case Histories and Field Methods I**

**Room:** Seaciff CD

**Moderator:** James McCalpin

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	James McCalpin	Trenching Helps Landslide Investigations in Areas of Complex Structure and/or Quaternary Deformation
9:40-10:00	Charlie Wildman	Geologically Value Engineering a Geotechnical Solution: Geological Evidence for Limiting the Extent of Remedial Ground Improvement Within a Failing Levee Along the Rio Grande in Brownsville, Texas
10:00-10:20	Ranjan Dahal	The Value of Urban Geology for Rising Cities in Nepal
10:20-10:40	Scott Burns	Aldercrest-Banyon Deep-Seated Landslide, Kelso, Washington, USA, 1998: North America's Third Largest Involving Homes
10:40-11:00	Christian Zangerl	Formation and Deformation Characteristics of Deep-Seated Compound Rock Slides in High Alpine Environment
11:00-11:20	Andrey Kazeev	New Technology for Calculation of a Slip Surface Depth of Deep Landslides
11:20-11:40	Luke Weidner	Investigating Large Landslides along the Ontonagon River, Michigan, using Combined Physical, Statistical, and Hydrologic Modeling
11:40-12:00	Margaret M. Darrow	Frozen Debris Lobes: A Look Back at a Decade of Exploring These Permafrost Slope Instabilities

##### **Technical Session #28 - Oroville Dam Symposium Part I**

The Oroville Dam Symposium will showcase a range of topics regarding the facility, spillway events of 2017, and recovery design and construction efforts. The Symposium will start with a presentation about the history of the dam and spillway complex, followed by insights from the Independent Forensic Team's geologist. The symposium will then take off with presentations describing the spillway events of February 2017, fast-tracked exploration to support fast-tracked design, forensic investigations, geologic controls on slope stability and rock erodibility, the use of drones and GIS to support real-time geologic mapping, groundwater conditions, the design and construction of a secant pile wall to resist headward erosion in the Emergency Spillway, chute anchor installation, slope monitoring using radar, and more. This great lineup will provide insight into the site geology and geologic factors considered during the emergency, and design and construction of the spillways repairs.

**Room:** Grand Ballroom B

**Conveners:** Holly Nichols and Hans Abramson Ward

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	J. David Rogers	Design and Construction History of Oroville Dam
9:40-10:00		TBD
10:20-10:40	Robert Barry	The Oroville Spillways – Setting The Stage For The Incident
10:40-11:00	Andrew Tate	Geologic Exploration for the Oroville Spillways Emergency: A Multi Agency and Multi Discipline Effort
11:00-11:20	Michael Gray	Investigations of the Oroville Spillway Chute
11:20-11:40	Jennifer Dean	Structural Controls on Rock Slope Stability, Oroville Dam Spillways, California
11:40-12:00	Jennifer Bauer	Rock Slope Stability Evaluation along the Oroville Dam Spillway, California, USA

**Technical Session #29A - Professional Development****Room:** Seacliff AB**Moderator:** Phyllis Steckel

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	James Hamel	Ten Lessons Learned in Geotechnical Practice
9:40-10:00	Phyllis Steckel	AEG Advocacy Committee Report: A Few Interesting Takeaways for the Geoscience Professional

**Technical Session #30 - Environmental: Site Characterization, Soil and Groundwater Contamination / Remediation Part I****Room:** Bayview A**Moderator:** Elinor S. Utevsky

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	James Helge	Case Study – Characterization, Risk Management, and Remediation Strategies to Shorten Timeline for Potential Site Reuse
9:40-10:00	Oyelami Charles	An Integrated Approach to Vadose Zone Characterization as it Relates to Burial Practices and its Impact on the Immediate Environment
10:20-10:40	Oyediran Ibrahim Adewuyi	Leachate Effects on some Index Properties of Clays
10:40-11:00	Shi Lei	An Assessment Method to the Functional Efficiency of Water Curtain System of an Underground Storage Facility
11:00-11:20	Charles Wilk	Soil Mixing for Remediation of Contaminated Sites (Presented By Jeff Wykoff)
11:20-11:40	Elinor S. Utevsky	Roadside Runoff and Shoulder Material Investigations: Contributing Factors to Non-Point Source Contaminant Loading
11:40-12:00	Belacem Moussai	Effect of Water Salinity and Leaching on the Behavior of a Road Embankment

**Technical Session #31 - Land Subsidence Symposium Part I****Room:** Grand Ballroom C**Convener:** Michelle Sneed

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	James Borchers	Land Subsidence in California
9:40-10:00	James Borchers	Land Subsidence from Groundwater Use in California
10:20-10:40	Bradley von Dessonneck	Sinking California's Water - Subsidence and Its Effects on the California Aqueduct
10:40-11:00	Bill Mok	Subsidence-Induced Changes to Floodplain Patterns
11:00-11:20	Zhuping Sheng	Subsidence Caused by Groundwater Withdrawal and Rebound/uplift with Mitigation Measures
11:20-11:40	Aranya Fuangswasdi	Addressing Subsidence in Bangkok, Thailand and Houston, Texas: Scientific Comparisons and Data-Driven Groundwater Policies for Coastal Land-Surface Subsidence (Presented by Sachin D. Shah and Surin Worakijthamrong)
11:40-12:00	Neil Deeds	Assessing Subsidence Risk from Brackish Groundwater Development on the Texas Gulf Coast – Houston, TX

**Technical Session #32 - Education, Professional Licensure, Practice Standards and Guidelines: The American Experience Symposium Part I**

Statutory professional licensure exists to assert and protect the public's interest in the practice of a profession that impacts the public health, safety, and wellbeing. This symposium explores the history, operation, and maturity of professional licensure for geologists and engineering geologists in the United States. How is the future of our profession linked to geologic practice performed to support client/ employer compliance with statutes, codes, and regulations that require a report by a licensed professional geologist? Join us for your choice of 15 presentations that explore and explain the history of licensure for geologists and the growing influence of licensure in undergraduate programs and early career decisions. The symposium closes with three papers on political geology: come and learn about lobbyists and how to shake hands with a legislator.

*Sponsored By California Geological Survey***Room:** Waterfront AB**Convener:** Robert Tepel

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Robert E. Tepel	The Causes, Chronology, Operation, and Future of State Licensure of Geologists in the United States
9:40-10:00	C. Dale Elifrits	Accreditation of Geology Degree Programs by the ANSAC of ABET – A Brief History and Current Status
10:20-10:40	Christopher C. Mathewson	Engineering Geology Education in the United States; a Survey of Curricula and an Assessment of Viability
10:40-11:00	Edmund D. Medley	Career Development—Encouragements to Young Geoprofessionals
11:00-11:20	Laurie Racca	50 Years of Protecting the Public: The California Professional Geologist License
11:20-11:40	John W. Williams	Development of the National Association of State Boards of Geology (ASBOG®) and the Licensure Examination
11:40-12:00 (1952-69)	J David Rogers	Origins of Excavation and Grading Statutes Requiring Engineering Geologic Input

### Technical Session #33 - Naturally Occurring Asbestos Symposium Part III

Sponsored by Kleinfelder

Room: Bayview B

Convener: Mark Bailey

Time	Speaker	Title
9:00-9:20	Bart Eklund	NOA – Applying Lessons Learned During Calaveras Dam Replacement Project to a New Site
9:20-9:40	Bradley Erskine	Asbestiform Glaucophane-Winchite in the Franciscan Complex of Northern California: Another Unrecognized Naturally Occurring Asbestos Formation with Probable World-Wide Occurrence
9:40-10:00	Dan Hernandez	Exposure to Mesotheliomagenic Naturally Occurring Asbestos (NOA) During Dam Construction?
10:20-10:40	John Wakabayashi	Clastic Sedimentary Rocks and Sedimentary Mélanges: Newly Recognized NOA Occurrences (Amphibole and Serpentine)
10:40-11:00	Rod Metcalf	Petrogenesis of Fibrous Amphiboles in Hydrothermally-Altered Granitoid Rocks: An Unusual Setting for Naturally-Occurring Asbestos
11:00-11:20	Fabrizio Piana	Overview of the Geotectonic History of the Western Alps which Special Attention to the NOA-Bearing Rocks (Meta-Ophiolites)
11:20-11:40	Elena Belluso	Naturally Occurring Asbestiform Minerals in Italian Western Alps and in Other Italian Sites
11:40-12:00	Alessandro Cavallo	Naturally Occurring Asbestos in Valmalenco (Central Alps, Northern Italy): from Quarries and Mines to Stream Sediments

### THURSDAY, SEPTEMBER 20 –AFTERNOON

#### Technical Session #34 - Rockfall II: Emerging Technology and Mitigation

Room: Seacliff CD

Moderator: Robert Huber

Time	Speaker	Title
2:00-2:20	Simon Loew	The Transition from Toppling to Sliding in Deep Rock Slope Instabilities
2:20-2:40	Nicholas Farny	Snow Avalanches, Rockfall, and Wild Game: Repairing Rockfall Attenuator Systems in Sawtooth National Recreation Area, ID
2:40-3:00	Matthias Brugger	The Scope of TLS and Photogrammetry in the Context of Geomechanical Discontinuity Analysis
3:00-3:20	Sunil Poudyal	Axial Monotonic Pullout Performance of Fully Grouted Tension Anchors in Rockfall Barrier Foundation (Presented By Ranjan Kumar Dahal)
3:40-4:00	D Jean Hutchinson	Illuminating our Understanding of Rock Slope Behavior, by Integrating Engineering Geology Concepts into Interpretation of Remotely Sensed Data
4:00-4:20	Robert Huber	Design and Construction Considerations for Innovative Rockfall Protection Systems
4:20-4:40	Greg Stock	Rapid 3-D Analysis of Rockfalls in Yosemite Valley Using Terrestrial Lidar and Structure-from-Motion Photogrammetry
4:40-5:00	Tai-Tien Wang	Risk Identification and Mitigation for Potential Rock Falls through Point Clouds Obtained by LiDAR Techniques: A Case Study in Eastern Taiwan
5:00-5:20	Ranjan Kumar Dahal	Rock Fall Mitigation Practices in Nepal

#### Technical Session #35 - Debris Flow and Steep Creek Hazards Symposium

Room: Seacliff AB

Convener: Kevin McCoy

Time	Speaker	Title
2:00-2:20	Corinna Wendeler	Flexible Ring Net Barriers for Debris Flow Protection - Learning from More than 10 Years of Experience
2:20-2:40	Arpita Mandal	Comparison between Radar Estimated and Rain Gauge Measured Precipitation in Debris Flow studies, Great Smoky Mountains National Park
2:40-3:00	Fu Sheng	Hazard Assessment of Rainfall-induced Shallow Landslides in Cili, China
3:00-3:20	Klaus-Peter Keilig	Comparison of Multi-Temporal Elevation Models of a Debris-Flow Channel
3:40-4:00	Kevin McCoy	Parameterizing GIS-Based Debris Flow Models Using High-Resolution Digital Elevation Datas
4:00-4:20	Paul Santi	Predicting Long Runout Landslides
4:20-4:40	Jianping Chen	Geological Features of Natural Dams in Suwalong Reach at the Upstream of Jinsha River
4:40-5:00	Jeremy Lancaster	The Santa Barbara and Carpenteria Debris Flows of January 9, 2018: Post-Fire Debris Flow Initiation Areas and Triggering Precipitation
5:00-5:20	Xie Wen Hu	Research Actuality and Evolution Mechanism of Post-Fire Debris Flow

### Technical Session #36 - Oroville Dam Symposium Part II

**Room:** Grand Ballroom B

**Convener:** Holly Nichols and Hans Abramson Ward

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
2:00-2:20	Stephanie Briggs	Geologic Influences on Slope Stability and Foundation Design, Oroville Dam Spillway, California
2:20-2:40	Nick Hightower	Using GIS and UAV Imagery for Geologic Mapping During the Oroville Spillway Emergency Recovery
2:40-3:00	Justin Cox	Oroville Spillway Chute – Geologic Mapping Program for Exposed Foundation Rock
3:00-3:20	Rebekah Cesmat	Determining Groundwater Conditions in Fractured Rock – Oroville Spillways Recovery
3:40-4:00	Mike George	Geologic Controls on Spillway Erodibility: Insights from Oroville
4:00-4:20	Chad Carlson	Geologic Considerations and Observations of Secant Pile Wall Construction: Oroville Dam Emergency Spillway, California
4:20-4:40	Alberto Garrido	Rock Dowel Anchor Design and Installation - Oroville Dam Spillway Chute
4:40-5:00	Stephen Fuemmeler	Slope Monitoring at Oroville Dam Spillway - Ground-based Radar, UAV Photogrammetry, and Boots on the Ground

### Technical Session #37 - Land Subsidence Symposium Part II

**Room:** Grand Ballroom C

**Convener:** Michelle Sneed

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
2:00-2:20	Ryan Smith	Improved Modeling of Land Subsidence through the Integration of InSAR and Airborne EM Data
2:20-2:40	Joseph Hughes	Simulating Aquifer-System Compaction and Land Subsidence with MODFLOW 6
2:40-3:00	Kenneth Ferguson	Earth Fissures and Infrastructure: A Case History at the Siphon Draw Detention Basin, Central Arizona
3:00-3:20	Kenneth Ferguson	Mitigation Strategies and Engineering Solutions for Infrastructure at Risk from Earth Fissures
3:40-4:00	David Wilshaw	Spring Hill, Florida: Engineering Geology of the Sinkhole Insurance Epicenter
4:00-4:20	Domenico Calcaterra	Detection of Subsidence by Radar Interferometric Data in the Seruci-Nuraxi Figus Coal Mine Area (Sardinia, Italy)
4:20-4:40	David Knott	Stabilization of Abandoned Coal Mine Workings by Grouting
4:40-5:00	Edmund Medley	The Sea Cliff Incident: A Catastrophic San Francisco “Sinkhole”

### Technical Session #38 - Education, Professional Licensure, Practice Standards and Guidelines: The American Experience Symposium Part II

*Sponsored By California Geological Survey*

**Room:** Waterfront AB

**Convener:** Robert Tepel

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
2:00-2:20	J. David Rogers	Administrative Review of Geologic Site Characterization for Development Applications
2:20-2:40	Timothy Dawson	The Alquist-Priolo Earthquake Fault Zoning Act: A Review and New Developments Regarding the Assessment of Surface Fault Rupture Hazard in California
2:40-3:00	Chase White	An Overview of the California Geological Survey School and Hospital Project Review Program with Historical Perspective
3:00-3:20	Michael Silva	California’s Seismic Hazards Mapping Act: Improving the State of the Practice in Engineering Geology (Presented By Tim Dawson)
3:40-4:00	Steven D. Bowman	Guidelines for Geologic-Hazard Investigations, Engineering-Geology Reports, and Geologic-Hazard Ordinances in Utah (Presented By Robert Tepel)
4:00-4:20	James H. Williams	Politics and Survival
4:20-4:40	Christopher Stohr	How we Saved the Illinois Professional Geologist Licensing Act (Presented By Patricia Bryan)
4:40-5:00	Kenneth Neal	The Impacts of Cooperation between West-Coast State Licensure Boards on Professional Specialty Licensure and the Corresponding Effects on the Geotechnical Professions (Presented By Laurie Racca)

### Technical Session #39 - Emergency Response to Natural Disasters

**Room:** Garden Room

**Moderator:** Priscilla Addison

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
2:00-2:20	Jia-Jyun Dong	Rapid Identification of Damming Event and Hazard Assessment of Landslide Dam - A Review
2:20-2:40	Don Lindsay	Emergency Assessment of Post-Fire Debris Flows that Impacted the Communities of Montecito and Carpinteria, Santa Barbara County, California, on January 9 <sup>th</sup> , 2018
2:40-3:00	Priscilla Addison	Integrating Synthetic Aperture Radar Data and Classifier Tree Algorithm to Analyze Post-Wildfire Debris Flow Occurrence in California
3:00-3:20	Zbigniew Bednarczyk	Emergency Warning of Landslide Natural Hazard Using Nearly Real-Time Monitoring Data
3:40-4:00	Yasuhito Sasaki	Lessons from Geological Disasters and Accidents on Civil Engineering Structures over the Last 10 Years in Japan
4:00-4:20	Chris Massey	An Earthquake-Induced Landslide Forecast Tool for New Zealand; Using the 2016 Mw7.8 Kaikoura Earthquake as an Example
4:20-5:00		Discussion Led By Moderator

### Technical Session #40 - Naturally Occurring Asbestos Symposium Part IV

*Sponsored by Kleinfelder*

**Room:** Bayview B

**Convener:** Mark Bailey

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:00-1:20	Luca Barale	Geological Model for NOA Content Prediction in the Rock Excavation of a Long Tunnel
1:20-1:40	Jasmine Petriglieri	Not-Regulated Mineral Fibers. From the Identification to the Toxicity of Fibrous Antigorite from New Caledonia
1:40-2:00	Ed Cahill	The Complexities of Soil Sampling, Analysis, Data Interpretation and Risk Assessment for Asbestos and Other Mineral Fibers
2:00-2:20	Leticia Lescano	Mineralogical Composition and Structure of Fibrous Anthophyllite: A Case Study in Argentina
2:20-2:40	Marc Hendrickx	Fibrous Temolite in Central New South Wales, Australia
2:40-3:00	David Sederquist	Update on Management and Mitigation Strategies for Naturally Occurring Asbestos in the Sierra Nevada Foothills of California
3:00-3:20	Julie Wroble	Refinement of Sampling and Analysis Techniques for Asbestos in Soil
3:40-4:00	Dave Berry	Detection of Erionite and Other Zeolite Fibers in Soil by the Fluidized Bed Preparation Methodology
4:00-4:20	Robyn Ray	Discerning Erionite from other Zeolite Minerals – What you Should Know When Seeking Analysis
4:20-4:40	Cristina Pavan	Revisiting the Paradigm of Silica Pathogenicity: Silanols, not Crystallinity, as Key Determinant
4:40-5:00	Vigliaturo Ruggero	Naturally Occurring Asbestos and Cleavage Fragments, their Localization and Transformation in Epithelial Cells

### Technical Session #41A - Environmental: Site Characterization, Soil and Groundwater Contamination / Remediation Part II

**Room:** Bayview A

**Moderator:** Willliam Godwin

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
2:00-2:20	Jacob Gallagher	Dewatering a Coal Ash Basin Using Directionally Drilled Horizontal Wells
2:20-2:40	Stephen Wilkinson	An Electron Microscope Study of Biomineralisation for Geotechnical Engineering Purposes
2:40-3:00	Tyler Gilkerson	Understanding Carbon Nanoparticle Transport in Saturated Porous Media: Influence of Dissolved Organic Matter
3:00-3:20	Shruti Lakkaraju	Impact of Environmental and Land Cover Changes on the Water Quality Characteristics of East Tennessee Watersheds

### Technical Session #41B - Loess

**Room:** Bayview A

**Moderator:** Morley Beckman

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
3:40-4:00	Katherine Yates	Preliminary Investigation of the Soil-Water Characteristics of Loess Soils in Canterbury, New Zealand (Presented By Clark Fenton)
4:00-4:20	Zelin Zhang	Seismic Performance of Loess-Mudstone Slope in Tianshui — Centrifuge Model Tests and Numerical Analysis
4:20-4:40	Yunsheng Wang	The Typical Characteristics of Large-scale Landslides in the Transition Belt between the Qinghai-Tibet Plateau and the Loess Plateau
4:40-5:00	Hong Zhang	Dynamic strength properties of loess discharged from the Yellow River into the Bohai Sea, China

## **FRIDAY, SEPTEMBER 21 –MORNING**

### **Technical Session #42 - Landslides Monitoring and Prediction**

**Room:** Seacliff CD

**Moderator:** Charles Hammond

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Paolo Allasia	Near Real Time Monitoring Systems and Periodic Surveys Using a Multi Sensors UAV: The Case of Ponzano Landslide
9:40-10:00	Brian Collins	Basal-liquefaction-induced Mobility of the 2014 SR530 (Oso) Landslide (Washington, USA)
10:20-10:40	Chih-Ping Lin	Better Practice of Implanting Geo-Nerves for Landslide Monitoring
10:40-11:00	Wen Baoping	Variation in Residual Strength of the Large-Scale Landslides' Slip Zones in the Three Gorges Reservoir of China
11:00-11:20	Charles Hammond	Predicting Failure at Rattlesnake Hills Landslide using Inverse Velocity
11:20-11:40	Hengxing Lan	Large Landslide Precursor Analysis Using Remote Sensing
11:40-12:00	Arindam Basu	Effect of Water Saturation on the Shear Behavior of Sandstone Bedding Planes

### **Technical Session #43 - California Earthquake Clearinghouse & Mini-Drill for Emergency Response**

Using Your Experience as a Professional Geologist to Help Your Community: Post-Earthquake Clearinghouse Participation by You! Have you given any thought to what you will do after the ground stops shaking when the next big earthquake happens? Consider joining your nearest earthquake clearinghouse. Every earthquake will be different, but there will always be a need for professional geologists and their subject matter expertise on local geologic hazards and conditions. The goal of this symposium is to encourage partnerships between members of local chapters of professional societies such as AEG and clearinghouse operators. The intellectual resource represented by licensed professionals such as members of AEG is invaluable, and the more closely we can coordinate response efforts of professional geologists ahead of the next big earthquake, the more efficiently we will be able to support our local communities with response, and improve resiliency. In this symposium you will hear about successful post-earthquake clearinghouse operations in different states, and around the world; how you can participate; how to put your professional experience to use collecting field observations about geologic impacts and turning that information into actionable intelligence in support of situational awareness and decision support for emergency managers and local community response.

**Room:** Seacliff AB

**Moderator:** Anne Rosinski

9:20-12:00

### **Technical Session #44 - Getting the Geology Right – the Practical Application of Engineering Geology Models Symposium Part I**

Engineering geological models are fundamental to for any engineering problem that involves an interface with the ground. In recent years there have been significant advances to the tools available for providing three dimensional ground models and to communicate the uncertainty and limitations of the ground model. This session explores practical advances in the application of engineering geological models, provides case studies and importantly explores how engineering geological models are fundamental tools for managing geotechnical risk.

**Room:** Bayview A

**Convener:** Darren Paul

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-10:00	Mark Eggers	Managing Risk when Building the Engineering Geological Model: Importance of Understanding the Regional Geological Setting
10:20-10:40	Steven Parry	Conceptual Engineering Geological Models (Presented By Fred Baynes)
10:40-11:00	Richard Hosker	A 3D Geological Model for Characterization of Geological Faults at the Proposed Site for the Wylfa Newydd Nuclear Power Plant, Wales (Presented by Matthew Free)
11:00-11:20	Brian Gray	Assessing Geologic Hazard Constraints for Hydroelectric Infrastructure through Detailed Mapping of Volcanic Stratigraphy in Northeastern California
11:20-11:40	Holger Kessler	Applications of Geological Models: Managing Sustainable Groundwater Resources and Reducing Geotechnical Risk (Presented By Keith Turner)
11:40-12:00	Aliki Kokkala	Assessment on the Engineering Geological Conditions of the Eastern Urban Area of Thessaloniki Basin, in Northern Greece, using a Geotechnical Database (Presented By Marinou Vassilis)

### **Technical Session #45 - Dam Symposium Part IV**

*Sponsored By Schnabel Engineering*

**Room:** Grand Ballroom B

**Conveners:** Kevin Mininger & Scott Walker

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-10:00	Pieter Michiel Maurenbrecher	Decrypting the Stereographical 3D Analysis of the 1959 Malpasset Dam Disaster
10:20-10:40	Junxue Ma	Sedimentary Characteristics of Outburst Deposits Induced by Diexi Paleo-Dammed Lake in the Upper Minjiang River, China and its Historical Maximum Peak Discharge
10:40-11:00	Liang Ning	Predictive Analysis on Surge Caused by a Potential Large-Scale Reservoir Landslide in SW China
11:00-11:40	Pete Nix	Portage Lakes, Ohio – East Reservoir Dam: History, Evaluation and Remediation
11:40-12:00	Zheming Shi	3D DEM Investigation on the Characteristics of Landslide Dam Formed by Dry Granular Flows (Presented by Yuanyuan Zhou)

**Technical Session #46 - Hydrogeology/Groundwater Symposium****Room:** Garden Room**Convener:** Lindsay Swain

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Kevin Hayes	Hydrostratigraphy and Hydrogeology of the Intermediate Aquifer System, Jacksonville, Duval County, Florida
9:40-10:00	Chiara Morstabilini	Innovative Approach against Debris Flow. Mini Skirt Check Dam: Design and Applications (Presented By Marco Deana)
10:20-10:40	Adela Beauty Adu Agyemang	Groundwater Nitrate Concentrations and its Relation to Landcover, Buncombe County, NC (Presented By Arpita Nandi)
10:40-11:00	Brendon Jones	On the Differing Role of Contact Obstacles on Variably Saturated Flow in Vertical and Horizontal Fractures
11:00-11:20	Malcolm Schaeffer	Carolina Piedmont Groundwater System - Existence of the Transition Zone between Regolith and Bedrock
11:20-11:40	David Schug	The "Coastal Plain of San Diego"- A New Groundwater Basin for Sustainable Management of the San Diego Formation
11:40-12:00	Matthys Dippenaar	Vadose Zone Characterization for Hydrogeological and Geotechnical Applications

**Technical Session #47 - Mining, Mine Reclamation****Room:** Bayview B**Moderator:** Clay Johnson

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Zbigniew Bednarczyk	Geotechnical Investigations of Mine Induced Ground Movements in Polish Opencast Mines
9:40-10:00	Egerton Hingston	The Petrographic and Geotechnical Properties of a Dolerite Intrusion in the Assessment of its Blasting Performance at the Magdalena Colliery, Dundee, South Africa
10:00-10:20	Marques, Jéssica	The Potential Use of Residual Soil from Ribeira Valley (Brazil) in Mitigating Metal Contamination: A Geotechnical Characterization (Presented By Orencio Vilar)
10:20-10:40	Alexey Kindler	Chemical Composition of Mine Waters in Post Exploitation Period in the Urals
10:40-11:00	Hingston, Egerton	The Use of JBlock in the Analysis of Potential Rock Falls at the Magdalena Colliery, Dundee, South Africa
11:00-11:20	Chandan Kumar	Hydrothermal Alteration Mineral Mapping using AVIRIS-NG Hyperspectral Remote Sensing Data
11:20-11:40	Terry West	Prevention of Coal Mine Subsidence Below City Streets and Highways, Southwest Indiana, A Continuing Program
11:40-12:00	Wanhua Sui	Grouting Improvement for Coalmining-Induced Subsided Caving and Fractured Rock Masses in China: a Review

**Technical Session #48 - Earthquakes/Faulting: Ground Motion/Rupture - Part I****Room:** Grand Ballroom C**Moderator:** Fernando Garcia

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-10:00	Kenneth Hudnut	Keynote: The HayWired Scenario—How Can the San Francisco Bay Region Bounce Back Better?
10:20-10:40	Fernando Garcia	High-Performance Discrete Element Modeling of Free-Field Surface Fault Rupture
10:40-11:00	Clark Fenton	Surface Rupture Hazard Zonation: Lessons from Recent New Zealand Earthquakes
11:00-11:20	Eldon Gath	Tectonic Geomorphology and Paleoseismology of the Whittier Fault in Southern California
11:20-12:00	Steven Kolthoff	Neotectonics of the Hollywood Fault, Central Hollywood District, Los Angeles, California, U.S.A.

**Technical Session #49A - Geotechnical Research****Room:** Waterfront AB**Moderator:** Julia Frazier

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
9:20-9:40	Nicola Mazzon	DEM Simulations of Punch Tests for the Mechanical Characterization of Cortical Meshes (Presented By Marco Deana)
9:40-10:00	Rolando Orense	Correlation between CPT and Screw Driving Sounding (SDS)

**Technical Session #49B - Coastal Hazards: Marine & Coastal Processes Symposium****Room:** Waterfront AB**Convener:** Xiaolei Liu

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
10:20-10:40	Yin Wang	Study on the Relationship Between Strength Characteristics and Microstructure of the Representative Deepwater Soft Clays
10:40-11:00	Fengyan Wang	Discontinuity Information Acquisition of Lithological Slope Based on Photogrammetry and Its Precision Analysis
11:00-11:20	Xiaolei Liu	In Situ Observations of Wave-Induced Fluid Mud Layers on the Yellow River Subaqueous Delta
11:20-11:40	Mingzheng Wen	Structure Characteristics and Control Factors of Near-Bed Suspended Sediment in Yellow River Subaqueous Delta, China (Presented By Jia Yonggang)
11:40-12:00		Discussion Led By Convener

**FRIDAY, SEPTEMBER 21-AFTERNOON****Technical Session #50 - Landslide Case Histories and Field Methods 2****Room:** Seacliff CD**Moderator:** David Korte

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:20	J. David Rogers	The 1998 Mission Peak Landslide in Fremont, California
2:20-2:40	Keng-Hao Kang	Geomorphological Evolution Model of a Paleo-landslide in Luchang, Taiwan
2:40-3:00	David Korte	Landslide Susceptibility and Soil Loss Estimates Impacting Streams in the Drift Creek/Siletz Watershed, Lincoln County, Oregon
3:00-3:20	Paolo Mazzanti	The 2015 Scillato Landslide (Sicily, Italy): Deformational Behavior Inferred from Satellite & Terrestrial SAR Interferometry
3:20-3:40		Discussion Led By Moderator

**Technical Session #51 - Dam Symposium Part V****Room:** Grand Ballroom B**Conveners:** Kevin Richards & Bill Roman

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	Georg Stockinger	Geomechanical Model for a Higher Certainty in Finding Fluid Bearing Regions in Non-Porous Carbonate Reservoirs
2:00-2:20	Alex Rutledge	Stabilization of a Potential Rockslide at Boundary Dam, WA
2:20-3:00	Daniel Stare	Buckeye Lake Dam – History, Evaluation and Remediation
3:00-3:20	Makoto Katozumi	Concordance Rate of Geology and Rock Mass Class between Estimated and Excavated Maps in Dam Foundation Surfaces
3:20-3:40		Discussion Led By Conveners

**Technical Session #52 - Getting the Geology Right – the Practical Application of Engineering Geology Models Symposium Part II****Room:** Bayview A**Convener:** Jeffrey Keaton

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	Darren Paul	A Simple Method of Estimating Ground Model Reliability for Linear Infrastructure Projects
2:00-2:20	Pavel Pospíšil	The Pitfalls of Creating an Engineering Geological Model of the Rock Environment on the Example of Landslide near Dobkoviky in the Czech Republic
2:20-2:40	Jeffrey Keaton	Suggested Enhancements to the Geologic Model Complexity Rating System
2:40-3:00	Alan Keith Turner	Using 3-D Models to Support the Total Geological History Approach for Site Characterization
3:00-3:20	Rosalind Munro	Review of the Geologic Model Complexity Rating System Components
3:20-3:40	David Shilston	Advanced Engineering Geological Models – Examples of an Essential Tool for Sustainable Development (Presented By Rob Hunt)

**Technical Session #54 - Earthquakes/Faulting: Ground Motion/Rupture - Part II****Room:** Grand Ballroom C**Moderator:** Nicholas Novoa

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	Nicholas Novoa	Collecting Downhole Shear Wave Velocity Measurements to Calculate Vs30 Values and Ground Accelerations at California Dam Sites
2:00-2:20	Julia Yeakley	Measuring Fault Displacements Caused by Salt Tectonics using Marine Geophysical Data
2:20-2:40	Yongshuang Zhang	Geohazard Effect of Active Fault in Eastern Margin of Qinghai-Tibetan Plateau
2:40-3:00	Issa El-Hussain	Seismic Microzoning and Design Response Spectra for an Area East of Wadi Rusayl in Muscat Region, Sultanate of Oman
3:00-3:40	Krishna Prasad Kaphle	General Geology, Tectonics and Frequent Earthquake Hazards in the Nepal Himalaya



**Technical Session #55 - Technology****Room:** Seacliff AB**Moderator:** Cole Christiansen

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	Hana Lee	GigaPan Image-Based 3D Reconstruction for Engineering Geological Investigations (Presented by D. Scott Kieffer)
2:00-2:20	Xinghong Liu	Study of the Technique for Landslide Rapid Recognition by InSAR
2:20-2:40	Kendall Wnuk	InSAR Analysis of Surface Subsidence above a Headrace Tunnel in the Sri Lankan Highlands
2:40-3:00	Dimitrios Bolkas	Discontinuity Trace Detection from Laser Scanner Point-Clouds using Space-Frequency Transforms
3:00-3:20	Chen Jianqin	Automatic Characterization of Rock Mass Discontinuities Using 3D Point Clouds (Presented By Xiaojun Li)
3:20-3:40	Cole Christiansen	Use of Mixed Reality and 3-D Visualizations to Compare Alternative Alignments for U.S. Highway 101

**Technical Session #56 - Geotechnical Investigations / Soil Amendments for Foundations & Infrastructure****Room:** Waterfront AB**Moderator:** John Cripps

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	Tim Memorran	Geotechnical Investigations at Scott Base, Ross Island, Antarctica
2:00-2:20	Mourice Czerewko	The Consequences of Pyrite Degradation During Construction (Presented by John Cripps)
2:20-2:40	So-ngo Clifford Teme	Geotechnical Characteristics of Sites For Construction of Fuel Depots in the Marginal Lands of the Nigerian Niger Delta Sub-Region
2:40-3:00	Nazli Tunar Özcan	Assessment of Compressibility and Settlement of a Peat Deposit at an Industrial Zone (Turkey) Using Laboratory Experiments and Long-Term Field Loading Test (Presented by Reşat Ulusay)
3:00-3:20	Gary Luce	Investigation of Soil Moisture and Soil Strength Conditions, 2018, Black Rock Playa, Washoe County, Nevada
3:20-3:40	Abdul Ghani-Rafek	A Low Cost Alternative Approach to Geological Discontinuity Roughness Quantification (Presented By Abd Rasid Jaapar)

**Technical Session #57 - Karst & Slope Deformation****Room:** Marina**Moderator:** Jan Louis van Rooy

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
1:40-2:00	George Brink	Developing a Dolomite Land Risk Management Strategy for a Surface Coal Mining Operation A Case Study (Presented by J Louis van Rooy)
2:00-2:20	Qi Liu	Experimental Study on Coupled Mechanical-Dissolving of Carbonate Rocks in Rocky Desertification Area of Karst Plateau, Guizhou, China
2:20-2:40	Constantin Prins	Geoelectrical Karst Reconnaissance on the Swabian Alb High Plain, new Line WendlingenUlm, Southwestern Germany
2:40-3:00	Jan Louis Van Rooy	Integrating Engineering Geological and Hydrogeological Site Investigations in Dolomite Karst Land Management
3:00-3:20	Marc Ostermann	Dating Deep-Seated Gravitational Slope Deformations in the Austrian and Italian Alps
3:20-3:40		Discussion Led By Moderator