



## At a Glance Schedule of Events

**70<sup>th</sup> Highway Geology Symposium**  
**Portland, Oregon**  
**October 21-24, 2019**

### ***Monday, October 21***

11:00 AM – 5:00 PM

**Highway Geology Symposium Registration Open in Portland Room**

1:00 PM – 5:00 PM

**Transportation Research Board Technical Session: “Looking Ahead at Informed Decision-Making for Engineering Geologists”**

Location: Salon C - D

5:00 PM – 8:30 PM

**Highway Geology Symposium Exhibitor Area Open**

Location: Salon E

5:00 PM – 6:15 PM

**HGS National Steering Committee Meeting**

Location: Salon A - B

6:30 PM – 8:30 PM

**Ice Breaker Social - Sponsored by Landslide Technology**

Location: Salon E (Exhibitor Area)

### ***Tuesday, October 22***

6:30 AM – 8:30 AM

**Continental Breakfast - Sponsored by Acker Drill Company.**

Location: Salon E (Exhibitor Area)

6:30 AM – 5:00 PM

**Highway Geology Symposium Registration Open in Portland Room**

8:00 AM – 5:00 PM

**Highway Geology Symposium Exhibitor Area Open**

Location: Salon E

## ***Tuesday, October 22 (continued)***

8:00 AM – 8:30 AM

### **Welcome and Opening Remarks**

*Tim Shevlin, HGS Organizing Committee Chair*

*Curran Mohney, C.E.G., Engineering Geology Program Leader, Oregon DOT*

Location: Salon A - D

### **HGS Guest Field Trip “Tour of Portland Landmarks”**

8:30 AM – 2:00 PM

**Guest Field trip Lunch sponsored by Apex Rockfall Mitigation LLC**

Pick-up Location: Hotel Front Lobby

## **Technical Session 1**

### **Location: Salon A - D**

*Chris Ruppen, GeoStabilization International, Moderator*

8:30 AM – 8:50 AM

### **Young Author Presentation: Geographic Information Systems (GIS) and Landslide Stabilization**

Author: Andrew Ferguson

8:50 AM – 9:10 AM

### **Young Author Presentation: Geohazard Mitigation Alternative Foundation Backfill for Emergency Construction**

Author: Joseph McElhany

9:10 AM – 9:30 AM

### **Young Author Presentation: Rock Mechanics and its Effects on Spillway Modification Design**

Authors: Coralie Wilhite, K. Pattermann, J. Hilmar, and Vanessa Bateman

9:30 AM – 9:50 AM

### **Young Author Presentation: Case History and Remediation Of A Troublesome Rock Cut In Georgia, Vermont**

Authors: Ethan Thomas, P.C. Ingraham, J.R. Smerekanicz, and T.D. Eliassen

9:50 AM – 10:20 AM

**Morning Coffee Break—Sponsored by AMS Inc.**

Location: Salon E

## **Technical Session 2**

### **Location: Salon A - D**

*Krystle Pelham, NHDOT, Moderator*

10:20 AM – 10:40 AM

### **Young Author Presentation: The Assessment and Remediation of the Wabasha Street Rock Fall**

Authors: Anya Brose, Lee Peterson, Ryan Peterson

## ***Tuesday, October 22 (continued)***

10:40 AM – 11:00 AM

**Young Author Presentation: Glaciolacustrine Earthflow Slides on US95**

Author: Collin McCormick

11:00 AM – 11:20 AM

**Young Author Presentation: Flexible Ring Nets as a Solution for Debris Flow Protection in Environmentally Sensitive Areas**

Authors: Saleh Feidi, Mallory Jones, Bill Kane

11:20 AM – 11:40 AM

**Young Author Presentation: Verification of Tabulated Design Grout-Ground Bond Strength**

Author: Brian J. Forsthoff

11:40 AM – 12:00 PM

**Young Author Presentation: Replacing Deteriorating Retaining Walls Along the Million Dollar Highway**

Authors: Brett Arpin and Todd Schlittenhart

12:00 PM – 1:30 PM

**Lunch—Sponsored by Ameritech Slope Constructors**

Location: Salon E (Exhibitor Area)

## **Technical Session 3**

**Location: Salon A - D**

*Stephen Hay, Oregon DOT, Moderator*

1:30 PM – 1:50 PM

**Young Author Presentation: Implementation and Application of Geotechnical Asset Management in Colorado**

Author: Nicole Oester

1:50 PM – 2:10 PM

**Young Author Presentation: Preliminary Rockfall Evaluation for the Historic Columbia River Highway State Trail, Segment E**

Author: Noah Kimmes

2:10PM – 2:30 PM

**Oneonta Tunnel – Restoration, Fire, Restoration**

Author: George Freitag

2:30PM – 3:00 PM

**Field Trip Preview & Lessons learned about slope stability and erosion after the forest fire in the Columbia Gorge, Oregon of 1991: implications for the fire of 2017 & Field Trip Preview**

Dr. Scott Burns

3:00 PM – 3:30 PM

**Afternoon Break—Sponsored by Durham Geo Slope Indicator**

Location: Salon E (Exhibitor Area)

***Tuesday, October 22 (continued)***

**Technical Session 4**

**Location: Salon A – B**

*Evan Garich, WFL-HD, Moderator*

3:30 PM – 3:50 PM

**The Characteristic Friction Angle, Its Determination and Use**

Author: G. Norris

3:50 PM – 4:10 PM

**Road re-opening after landslides the contribution of Remote Sensing**

Authors: A Brunetti, P. Mazzanti, S. Moretto, A. Rocca, S. Romeo

4:10 PM - 4:30 PM

**Poisson's Ratio Assessed from Ultrasonic versus Load Test**

Authors: S. Elfass, E. Saint-Pierre, R. Watters. And G. Norris

4:30 PM – 4:50 PM

**Settlement Monitoring of a Trial Embankment in Philadelphia Determining Site Specific Parameters for Large Embankment Construction**

Author: Sarah McInnes

4:50 PM – 5:10 PM

**Precision Presplitting – Changes to Design Methodology Based on Young's Modulus**

Authors: Anthony Konya, Dr. Calvin J. Konya

**Technical Session 5**

**Location: Salon C – D**

*Nicole Oester, CDOT, Moderator*

3:30 PM – 3:50 PM

**Blasting 2M+ Yards in Gneiss for a New Phoenix, AZ Freeway**

Author: Robert Cummings

3:50 PM – 4:10 PM

**Case Study Of A Failed Tied-Back Retaining Wall In A Colluvium Slope Under Landslide Conditions**

Author: Craig S. Lee

4:10 PM - 4:30 PM

**Helicopter Sluicing for Rockfall Risk Mitigation in Response to the 2016 Kaikōura Earthquake**

Authors: Rori Green

4:30 PM – 4:50 PM

**Triggering Mechanisms Of The Landslide And Rockfall Events Of The Historic February 2019 Rainfall Event In The Tennessee Valley**

Authors: David Freistaedter and Michael Laney

4:50 PM – 5:10 PM

**Rockfall Hazard Assessment for the I-90 Snoqualmie Pass Corridor Snowbridges Project, Washington State**

Authors: Kyle Obermiller, Reda Mikhail, David Findley

***Free evening to explore and dine in Portland***

## ***Wednesday, October 23***

6:00 AM – 7:00 AM

**To-Go Continental Breakfast Sponsored by McMillen Jacobs Associates & Cascade Drilling**

Location: Highway Geology Symposium Registration Area

### **Highway Geology Symposium Field Trip**

7:00 AM – 7:30 AM

**Load buses for Field Trip**

Pick-up Location: Meet in Hotel Front Lobby

7:30 AM – 5:30 PM

**Field Trip**

**Lunch—Sponsored by Geobrugg**

**Beverages - Sponsored by Golder Associates, Snacks – Sponsored by IDS Georadar**

**(NO GLASS ALLOWED INSIDE BUSES)**

### **Highway Geology Symposium Banquet Dinner**

6:30 PM – 7:30 PM

**Highway Geology Symposium Social Hour – Sponsored by: Access Limited Construction**

**Location: Salon E**

**Everyone Welcome!**

7:30 PM – 8:30 PM **Highway Geology Symposium Banquet**

Location: Salon A -D

**Ticketed Event**

8:30 PM – 9:30 PM

**Highway Geology Symposium**

**Keynote Speaker - Sponsored by Jensen Drilling Company**

**Catastrophic Missoula Floods, by Dr. Scott Burns**

**Everyone Welcome!**

## ***Thursday, October 24***

6:30 AM – 9:00 AM

**Continental Breakfast—Sponsored by GeoStabilization International**

Location: Salon E

8:00 AM – 10:30 AM

**Highway Geology Symposium Exhibitor Area Open**

*Exhibitors can break down after morning coffee break*

## *Thursday, October 24 (Cont.)*

### **Technical Session 6**

8:00 AM – 8:20 AM

#### **Estimating Rockfall Kinetic Energy as a Function of Rock Mass**

Author: John Duffy

8:20 AM – 8:40 AM

#### **An Innovative Solution for Debris Flow Barriers: Better Performance with Less Maintenance**

Authors: Chiara Morstabilini, Luca Gobbin, Marco Luigi Deana, Daniele Lepore

8:40 AM - 9:00 AM

#### **Advances in Rockfall: Protection: A Preliminary Design Tool for Attenuators Estimating Rockfall Kinetic Energy as a Function of Rock Mass**

Authors: Helene Hofmann and Tim Shevlin

9:00 AM – 9:20 AM

#### **Application of Rockfall Simulation to Risk Analysis**

Author: Timothy J. Pfeiffer

9:20 AM – 9:40 AM

#### **Assessment of Unstable Rock Columns at the Tieton Royal Columns, SR-12, Oak Creek Wildlife Area, Naches, WA**

Author: William C. B. Gates

9:40 AM – 10:00 AM

#### **A Review of Scaling as Rock Slope Remediation Method**

Authors: Gabrielle Mellies, John Nichols Maureen Matthew

10:00 AM – 10:30 AM

#### **Morning Coffee Break—Sponsored by Williams Form Engineering**

Location: Salon E

### **Technical Session 8**

**Location: Salon A – B**

*Mike Marshall, GRI, Moderator*

### **Technical Session 7**

8:00 AM – 8:20 AM

#### **The Meandering Mundo Mud Pot, or How Salton Sea Tectonics Affects International Trade**

Author: Dean G. Francuch and Carolina

Zamora 8:20 AM – 8:40 AM

#### **Mitigation of Chronic Bluff Retreat with an Engineered Riprap Revetment BNSF Bellingham Subdivision, Whatcom County, Washington**

Authors: Matthew Grizzell, Stephens

8:40 AM - 9:00 AM

#### **TDOT's Response to Landslides due to February 2019 Floods**

Author: Robert Jowers

9:00 AM – 9:20 AM

#### **Large-Scale Earthquake-Induced Landslide Repair Following New Zealand's Kaikoura Earthquakes**

Author: Colby Barrett

9:20 AM – 9:40 AM

#### **OR213 MP 10 Spangler Hill Emergency Slide Mitigation & Monitoring**

Author: Max Gummer

9:40 AM – 10:00 AM

#### **Disseminating Geological and Geotechnical Information to End-users**

Authors: Marc Fish, Tracy Trople, and Jim Struthers

### **Technical Session 9**

**Location: Salon C – D**

*Marc Fish, Washington Department of Transportation, Moderator*

***Thursday, September 13 (continued)***

**Technical Session 8 (cont.)**

10:30 AM – 10:50 AM

**Investigation, Design and Construction of Rock Slopes and Foundations for the New Genesee Arch Bridge Letchworth State Park, New York**

Authors: Jay R. Smerekanicz, Mark F. McNeilly, Jeffrey D. Lloyd

10:50 AM – 11:10 AM

**Pfeiffer Canyon Bridge Failure in Context of Risk**

Author: Gresham D. Eckrich

11:10 AM - 11:30 AM

**Rockfall and Risk: A Perspective from Managing Risks for Dams and Levees**

Author: Vanessa C. Bateman

11:30 AM - 11:50 AM

**Evidence for the Value of Risk-Based Life-Cycle Management for Geohazards and Geotechnical Assets**

Author: Mark Vessely

11:50 AM – 12:10 PM

**Extended Q&A for session presenters**

12:10 PM - 12:30 PM

**Closing Remarks and Adjournment**

Location: Salon A - D

**Technical Session 9 (cont.)**

10:30 AM – 10:40 AM

**Route T Landslide Study and Repair, Ray County, MO**

Authors: John Szturo and Wayne Duryee

10:50 AM – 11:10 AM

**The Emergency Repair for Federally Owned Roads Program**

Author: James Arthurs

11:10 AM - 11:30 AM

**US 60 Pinto Creek Bridge Foundation Optimization with Emphasis On Cost And Constructability In A Challenging Geologic Environment**

Authors: Daniel N. Fréchette and Patrice P. Brun

11:30 AM - 11:50 AM

**Slide Ridge Culvert Replacement**

Author: Robert E. Kimmerling

11:50 AM – 12:10 PM

**Ground Anchor Testing – Matching Test Elements to Ensure Critical Anchor Attributes are Verified, or “Why We Don’t Push Ropes”**

Author: Martin Woodard, David Scarpato, David Wood and Peter Ingraham



## ENGINEERING GEOLOGY COMMITTEE

### AFP00

2019 TRB Midyear Meeting at the 70<sup>th</sup> Highway Geology Symposium (HGS), Portland, Oregon

*Date: Monday, October 21, 2019, 1:00 PM – 5:00 PM*

*Location: Salon C - D*

*Session Theme: Looking Ahead at Informed Decision-Making for Engineering Geologists*

Time	Topic	Discussion Lead/Presenter
1:00 pm - 1:10 pm	Introduction	Ty Ortiz <i>Colorado DOT</i>
1:10 pm - 1:35 pm	Laser scanning of highway aggregates – Results of a transportation pooled fund study	Warren Chesner <i>Chesner Engineering, P.C.</i>
1:35 pm – 2:00 pm	Glaringly obvious things we need to consider with data management, but all too often do not	Vanessa Bateman <i>US Army Corps of Engineers</i>
2:00 pm – 2:25 pm	Developing a corridor health index to allocate budgets – Chiniak highway project – Kodiak, Alaska	Benjamin George & Trevor Strait <i>Landslide Technology and HDL Engineering</i>
2:25 pm – 2:40 pm	BREAK	
2:40 pm – 3:05 pm	Numerical solutions for problematic photogrammetrically derived digital elevation models and the consequence for slope stability analysis	Justin Lindeman, <i>Cal Engineering &amp; Geology</i>
3:05 pm – 3:30 pm	Slope deformation and change detection using ground-based LIDAR and remote-monitored instrumentation, OSU project on remote sensing and modeling of coastal bluff and rock slope deterioration	Curran Mahoney <i>Oregon DOT</i>
3:30 pm – 4:10 pm	Simple decisions from complex data: How we can leverage emerging tools to manage rock slope risk with better information	Dave Gauthier <i>BGC Engineering</i> Jean Hutchinson <i>Queen's University</i>
4:10 pm – 5:00 pm	Open Discussion	All