

# **63rd Annual Highway Geology Symposium 2012 (HGS 2012)**

## **Better Highways Through Applied Geology**

**Redding, California, USA  
7-10 May 2012**

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For permission requests, please contact the Highway Geology Symposium  
at the address below.

Highway Geology Symposium  
C/O FR Glass  
100 Wolfe Cove Rd  
Asheville, NC 28804

Phone: (828) 252-2260  
Fax: (828) 299-1273

frgeol@aol.com

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Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: curran@proceedings.com  
Web: www.proceedings.com

# 63<sup>rd</sup> ANNUAL HIGHWAY GEOLOGY SYMPOSIUM

## Agenda

### Monday, May 7<sup>th</sup>

12:00 PM - 5:00 PM

**Highway Geology Symposium: Registration - OPEN**

12:00 PM - 5:00 PM

**Transportation Research Board: Poster Board - OPEN**  
**“Design and Construction of Rockfall Mitigation Systems”**

12:30 PM - 4:15 PM

**Transportation Research Board: Technical Session**  
**“Design and Construction of Rockfall Mitigation Systems”**

*Location: Sierra Room*

6:30 PM to 8:30 PM

**Reception/Ice Breaker Social**

Bar Sponsored by Zonge Geophysics

Food Sponsored by Hi-Tech Rockfall

*Location: Siskiyou, Trinity & Cascade Rooms*

### Tuesday, May 8<sup>th</sup>

6:30 AM to 9:00 AM

**Breakfast**

*Location: Coffee Shop*

7:00 AM to 5:00 PM

**Highway Geology Symposium: Registration - OPEN**

7:00 AM to 5:00 PM

**Transportation Research Board: Poster Board - OPEN**  
**“Design and Construction of Rockfall Mitigation Systems”**

*Location: Sierra Room*

8:00 AM to 5:00 PM

**Highway Geology Symposium: Exhibitor Hall – OPEN**

*Location: Siskiyou, Trinity & Cascade Rooms*

7:30 AM to 8:30 AM

**Welcome & Opening Remarks**

John Bulinski PE, Caltrans District 2 Director

John Parrish PG, California Geologic Survey, State Geologist

Jim Davis PE, Caltrans Acting Division Chief Department of Engineering Services

Phil Stolarski PE, Caltrans Chief METS/Geotechnical Services

*Location: Sierra Room*

**Tuesday, May 8<sup>th</sup> (continued)**

**Technical Session I - Rockfall**

8:30 AM to 8:50 AM

**Rock Slope Protection Utilizing a New Washington State Department of Transportation (WSDOT) Designed Hybrid Drapery System in Conjunction with Traditional Stabilization Techniques0008**

Author(s): Fish, Dobrey, Johnston, & Badger

*Location: Sierra Room*

8:50 AM to 9:10 AM

**Rockfall and Debris Flow Barrier Post Foundation Design00088**

Author(s): Kane & Shevlin

*Location: Sierra Room*

9:10 AM to 9:30 AM

**Cable Anchors versus Solid Bar Anchors in Rockfall Protection Systems0004:**

Author(s): Ingram & Wagner

*Location: Sierra Room*

9:30 AM to 9:50 AM

**Case Histories on Mitigating Geologic Hazards in Mountainous Areas of California's Intrastate Highway System0005;**

Author(s): Badeker

*Location: Sierra Room*

**Break**

9:50 AM to 10:10 AM

**Morning Coffee Break**

Co-sponsored by: Maccaferri & Michael Baker Corp.

*Location: Siskiyou, Trinity & Cascade Rooms*

**Technical Session I - Rockfall (continued)**

10:10 AM to 10:30 AM

**Design Software for Secured Drapery00076**

Author(s): Brunet & Giacchetti

*Location: Sierra Room*

10:30 AM to 10:50 AM

**The Hyampom Road Project: Managing Geotechnical Risk in Difficult Mountainous Terrain00096**

Author(s): Andrew & Haramy

*Location: Sierra Room*

**Tuesday, May 8<sup>th</sup> (continued)**

**Technical Session I - Rockfall (continued)**

10:50 AM to 11:10 AM

**Rockfall and Rockslide Mitigation Options with Rocksheds and Real-time Slope Monitoring along Interstate 70 in Glenwood Canyon, Colorado**0007

Author(s): Arndt & Ortiz

*Location: Sierra Room*

11:10 AM to 11:30 AM

**Using LIDAR in Highway Rock Cuts**000:

Author(s): Maerz, Otoo, Kassebaum, & Boyko

*Location: Sierra Room*

11:30 AM to 11:50 AM

**Rockfall Mitigation for Conversion of a Contractor's Access Road to a Permanent Low-Volume Roadway**000B33

Author(s): Ruppen, Garced, Zuo, & Gaffney

*Location: Sierra Room*

**Lunch**

11:50PM to 1:00PM

**Lunch**

Co-sponsored by: Bentley Systems and Hi-Tech Rockfall Construction, Inc.

*Location: Sundial Room*

**Technical Session I - Rockfall (continued)**

1:00 PM to 1:20 PM

**Rock Slope Catchment Ditch Effectiveness: An Assessment of Methods used for Rockfall Hazard Rating System (RHRS) Scoring**000B46

Author(s): Thomas & Eliassen

*Location: Sierra Room*

1:20 PM to 1:40 PM

**Case Study: West Virginia US Highway 19 'The Narrows' Rockfall Mitigation**000B66

Author(s): Kane & Amend

*Location: Sierra Room*

1:40 PM to 2:00 PM

**Geotechnical Design of Supplemental Rock Anchors, Wurts Street Suspension Bridge, Kingston, NY**000B79

Author(s): Duskin & Charles

*Location: Sierra Room*

**Tuesday, May 8<sup>th</sup> (continued)**

**Technical Session I - Rockfall (continued)**

2:00 PM to 2:20 PM

**Research into and Application of Attenuator Rockfall Protection Systems000888**

Author(s): Mumma

*Location: Sierra Room*

2:20 PM to 2:40 PM

**Cascade Subdivision Mile 010.20: Rockfall Analysis and Protection of Railway with Ring Net Attenuator and Rockfall Barrier00089:**

Author(s): Morris, Wyllie, Shevlin, & Harrison

*Location: Sierra Room*

**Break**

2:40 PM to 3:00 PM

**Afternoon Refreshment Break**

Sponsored by: Michael Baker Corp. & Gannet Flemming Inc.

*Location: Siskiyou, Trinity and Cascade Rooms*

**Technical Session II - Site Investigations**

3:00 PM to 3:20 PM

**Geotechnical Investigation for the K-7 and I-70 Interchange in Bonner Springs, Kansas0008; 5**

Author(s): Halverson

*Location: Sierra Room*

3:20 PM to 3:40 PM

**Practical Estimation of Mohr-Coulomb Shear Strength for Cemented Conglomeratic Deposits in the Arid Western United States000426**

Author(s): Gates

*Location: Sierra Room*

3:40 PM to 4:00 PM

**Measurement of Ground Movement during Seismic Events000436**

Author(s): Hipley & Huang

*Location: Sierra Room*

4:00 PM to 4:20 PM

**Field Methods of Measuring Discontinuities for Rock Slope Stability Analysis on Price Mountain, VA000448**

Author(s): Farny & West

*Location: Sierra Room*

**Tuesday, May 8<sup>th</sup> (continued)**

**Technical Session III - Roadway**

4:20 PM to 4:40 PM

**Presidio Parkway Project Phase 1000463**

Author(s): Pokrywka, Salimi, Momenzadeh, Greguras, Sojourner, & Nguyen

*Location: Sierra Room*

4:40 PM to 5:00 PM

**Multifaceted Approach for Evaluating and Treating Sinkhole Activity beneath Highways – Case Study: SR 0422 in Southeastern Pennsylvania000482**

Author(s): McInnes & Krupansky

*Location: Sierra Room*

**Field Trip Preview**

5:00 PM to 5:15 PM

**Field Trip Preview Presentation**

Scott Lewis CEG Caltrans Engineering Geologist

*Location: Sierra Room*

5:30 PM to 6:30 PM

**HGS National Steering Committee Meeting**

*Location: Sacramento Room*

**Wednesday, May 9<sup>th</sup>**

6:30 AM to 9:00 AM

**Breakfast**

*Location: Coffee Shop*

8:00 AM to 4:00 PM

**Highway Geology Symposium: Field Trip**

Lunch Sponsored by Geobrugg

Afternoon Beverages Sponsored by Golder and Associates

*Location(s): State Route 299*

5:30 PM to 6:30 PM

**Highway Geology Symposium: Social Hour**

Sponsored by Zonge Geophysics

*Location: Siskiyou, Trinity and Cascade Rooms*

6:30 PM to 9:30 PM

**Highway Geology Symposium: Banquet Dinner**

Keynote Speaker: Stephen Most

Topic: “River of Renewal, Myth and History in the Klamath Basin”

*Location: Sierra Room*

**Thursday, May 10<sup>th</sup>**

6:30 AM to 9:00 AM

**Breakfast**

*Location: Coffee Shop*

8:00 AM to 12:00 PM

**Highway Geology Symposium: Exhibitor Hall – OPEN**

*Location: Siskiyou, Trinity & Cascade Rooms*

**Technical Session IV - Landslides**

8:00 AM to 8:20 AM

**Dani Creek Landslide: Anchored Soldier Pile Wall in Franciscan Mélange00049:**

Author(s): Turner-Ryan

*Location: Sierra Room*

8:20 AM to 8:40 AM

**Estimating Landslide Losses to State Highways: A General Approach for a Winter Storm Scenario0004; 9**

Author(s): Wills, Perez, & Branum

*Location: Sierra Room*

8:40 AM to 9:00 AM

**Effects of Postfire Debris Flows on California State Route 395, Geologic Factors and Assessment Tools000529**

Author(s): Lancaster

*Location: Sierra Room*

9:00 AM to 9:20 AM

**Impacts of the Double Draw Landslide (Debris Flow) in Wyoming's Snake River Canyon Lincoln County, Wyoming000543**

Author(s): Hood & Falk

*Location: Sierra Room*

9:20 AM to 9:40 AM

**Challenges Faced during the Emergency Response to the Bear River Canal Failure000563**

Author(s): Mack, Kennedy, Leung, & McManus.

*Location: Sierra Room*

9:40 AM to 10:00 AM

**Case Studies in Innovative Roadway Landslide Repair and Rock Slope Stabilization in California00057:**

Author(s): Chincholo, Barrett, & Beard

*Location: Sierra Room*



**Thursday, May 10<sup>th</sup> (continued)**

**Break**

10:00 AM to 10:20 AM

**Morning Coffee Break**

Sponsored by: Landslide Solutions

*Location: Siskiyou, Trinity and Cascade Rooms*

**Technical Session IV - Landslides (continued)**

10:20 AM to 10:40 AM

**I-40 along the Cumberland Escarpment Highway Instability, Historic Reviews, and Remedial Concepts00059:**

Author(s): Sneyd, Sak, Moore, Barker, & Oliver

*Location: Sierra Room*

10:40 AM to 11:00 AM

**Distribution of Weathered Geologic Bedrock Controls on Slope Movement, Green Point Sink, State Route 299, Humboldt County, California0005; 6**

Author(s): McGuire

*Location: Sierra Room*

**Technical Session V - Structures**

11:00 AM to 11:20 AM

**Rock-Socketed Shafts for the Bridge at Pitkins Curve000635**

Author(s): Turner-John, Duffy, Buell, & Zheng

*Location: Sierra Room*

**Potential Presentations**

11:20 AM to 11:40 AM

**Numerical Analysis of Rockfall Sheltering Structures000649**

Author(s): Calvetti, Frenez, & Tondini

*Location: Sierra Room*

11:40 AM to 12:00 PM

**WSNs for Rockfall Protection Assets, Tracking, and Maintenance000655**

Author(s): Danzi

*Location: Sierra Room*

**Symposium Adjournment**

12:00 PM to 12:10 PM

**Closing Remarks/Adjournment**

Bill Webster

*Location: Sierra Room*

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**Hgjf 'Vt lr 'I wlf gdqqn000669**

Eqo r kgrf 'D{ <J ki i kpu. 'Tcuo wuugp. 'Def gngt. 'Ngy ku. 'Ur ggt. 'O qttku. 'Twupcm 'Vtwlkmq. 'I tcxgu