65th Annual Highway Geology Symposium

(HGS 2014)

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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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65th Annual Highway Geology Symposium Abstracts & Notes

Tuesday, July 8th – morning sessions

1. 8:30 AM – 8:55 AM

Aggregate Freeze-Thaw Testing and D Cracking Field Performance 30 Years Later 1

Author(s): Heather A. K. McLeod, Joshua Welge, Robert Henthorne

2. 8:55 AM – 9:20 AM

Falling Rocks-Harnessing the Schuylkill Expressway 21

Author(s): Joseph Krupansky, Sarah McInnes

3. 9:20 AM – 9:45 AM

Mitigating Landslides in Wyoming Using Multiple Innovative Designs and Technologies 38

Author(s): Ben Arndt, Kirk Hood, James Dahill

4. 10:20 AM - 10:45 AM

Ground Anchor Selection, Design and Testing – Matching Ground Anchors to Their

Desired Function and Testing Their Serviceability 58

Author(s): Mark Telesnicki, Peter Ingraham

5. 10:45 AM – 11:10 AM

LiDAR-Based Rock Slope Assessment, State Route 8 75

Author(s): Evan T. Lonstein, Andrew R. Blaisdell, Christopher L. Snow

6. 11:10 AM – 11:35 AM

Utilizing InSAR for Landslide Asset Management in Colorado 106

Author(s): Ken Fergason, Bibhuti Panda, Danielle Williamson

7. 11:35 AM – 12:00 PM

Case Histories on Light Anchor Post System for Flexible Barriers 120

Author(s): Giorgio Giacchetti, Ghislain Brunet, Alberto Grimod

Tuesday, July 8th - afternoon split sessions

8. 1:00 PM – 1:25 PM (Salon D)

Geotech Tools – Geotechnical Solutions for Transportation Infrastructure - Implementation 134

Author(s): Vern Schaefer, Silas Nichols, Matt DeMarco, Ryan Berg

9. 1:00 PM – 1:25 PM (Salon A, B, C)

Emergency Rockfall Mitigation BNSF Railway, Yakima Subdivision, Washington 150

Author(s): William CB Gates, Glen Gaz

10. 1:25 PM – 1:45 PM (Salon D)

Assessing the capabilities and limitation of terrestrial LiDAR, terrestrial Photogrammetry, and

airborne LiDAR for mapping differential slope changes 164

Author(s): Matthew Lato

11. 1:25 PM – 1:45 PM (Salon A, B, C)

Performance of Flexible Debris Flow Barriers in a Narrow Canyon 182

Author(s): Simon Boone, William F. Kane

12. 1:45 PM – 2:10 PM (Salon D)

Using New and Old Technologies for an Economical Approach to Rock Stabilization on TN I-75 199

Author(s): Saieb Haddad, Daniel Journeaux, Frank Amend

13. 1:45 PM – 2:10 PM (Salon A, B, C)

Practical Consideration for the Design and Construction of Landslide Mitigation Using

Horizontal Drains 210

Author(s): Timothy Pfeiffer

14. 2:10 PM – 2:30 PM (Salon D)

Anchored Shear Piles for Landslide Mitigation: Design Approach and Instrumented Performance 228

Author(s): Thomas Westover

15. 2:10 PM – 2:30 PM (Salon A, B, C)

Intelligent Compaction for Roadway Construction and Quality Assurance 245

Author(s): Christopher Savan, Kam Ng, Khaled Ksaibati

16. 3:00 PM – 3:20 PM (Salon D)

Using Time-Domain Reflectometry to Monitor Subsurface Void Propagation 263

Author(s): Joseph Renner, Ed Lindgren, Mark Vessely

17. 3:00 PM – 3:20 PM (Salon A, B, C)

Review of Bridge Approach Slab Systems in the United States 278

Author(s): Seyed Yashar Yasrobi, Kam W. Ng, Thomas V. Edgar, Michael Menghini

18. 3:20 PM – 3:45 PM (Salon D)

The Anatomy of a Challenging Construction Project, Extension of the Roadway across Celery

Bog, West Lafayette, Indiana 296

Author(s): Terry West

19. 3:20 PM – 3:45 PM (Salon A, B, C)

The Full Scale Mechanics of Slope Stablization 314

Author(s): Steve Mumma

20. 3:45 PM – 4:05 PM (Salon D)

Evaluation and Stabilization of the Bret Landslide, Big Horn County, WY 330

Author(s): Brett Arpin, Kirk Hood, Ben Arndt

21. 3:45 PM – 4:05 PM (Salon A, B, C)

Friction Losses in Tieback Anchors used for Landslide Stabilization 344

Author(s): Benjamin Turner

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Change we can Count On? Evaluating the Merits of Traditional and Modern Methods in

Conduction Preliminary Assessment of Geohazards 357

Author(s): Edward Barefield

23. 7:50 AM – 8:15 AM

Double Nickel Micropile Landslide Stabilization 376

Author(s): Kirk Hood, Jamie Martens, John Szturo

24. 8:15 AM – 8:40 AM

Rock Bolting in Sensitive Environments 397

Author(s): Kyle A. Kershaw, Mark J. Vessely

25. 8:40 AM – 9:05 AM

Utilization of Displacement Monitoring to Modify Rock Slope Designs during Construction

- I-90, Washington State 408

Author(s): N.I. Norrish, T.C. Badger, E.L.Smith

26. 9:05 AM – 9:30 AM

Case Study in Using wicking geotextile to solve frost heave at the Pioneer Scenic Mountain

Byway in Dillon Montana 428

Author(s): Mark Sikkema, James B. Carpita

27. 9:30 AM – 9:55 AM

Improving Construction Safety along Highway US-34 Post September 2013 Flooding 441

Author(s): Dennis Sack, Phil Sirles, Scott Walerk

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Geologic Causation and Geotechnical Mitigation Design for the US89 Landslide Disaster,

Bitter Springs, Arizona 458

Author(s): William V. McCormick, Keith H. Dahlen

29. 10:40 AM - 11:05 AM

Advances in Design and Construction of Large Diameter Drilled Shafts in Rock N/A

Author(s): John P. Turner (paper will not be included on USB drive)

30. 11:05 AM – 11:30 AM

Rockfall source detection & volume measurement from autonomous UAV-acquired Photogrammetry: A case study from a transportation corridor in northern Ontario,

Canada 478

Author(s): Dave Gauthier, Jean Hutchinson, Matt Lato, David F. Wood, A.J. Morris

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Geotechnical Challenges in Laboratory Investigation of Bridge Abutment Scour 494

Author(s): Kam Hg, Ram Chakradhar, Robert Ettema, Edward K. Kempem

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Jim Coffin, James Dahill, Holly Daniels, Mark Falk, Julie Francis, Kirk Hood Martin Larsen, David Vanderveen, Seth Wittke