



## 2010 SYMPOSIA

### Symposium #1:

#### **Charleston Earthquakes**

Moderators: David Fenster, Bechtel Power Corporation and  
Ross Hartleb, Fugro William Lettis & Associates, Inc.

Wednesday, September 22, 2010 ~ Afternoon

Technical Session #1

Room: Carolina A

Geological, seismological and geotechnical data continue to enhance our understanding of the Charleston Earthquake of 1886. These data also contribute to improving our assessment of earthquake hazards in the southeastern U.S. This symposium focuses on new information and innovative approaches to synthesizing multidisciplinary information in order to gain a better understanding of earthquakes in the greater Charleston area.

- Stevenson, D.....Re-evaluation of South Carolina Earthquake Catalog
- Heidari, T.....Liquefaction Potential of Quaternary Deposits in Mount Pleasant, South Carolina, Based on the 1886 Charleston Earthquake
- Talwani, P.....Studies Related to the Discovery of a Prehistoric Sand Blow in the Epicentral Area of the 1886 Charleston Earthquake – Trenching and Geotechnical Investigations
- Gassman, S. ....Magnitudes of Charleston Earthquakes from Geotechnical Data
- Hartleb, R.....CEUS Liquefaction Database: Revised Recurrence Estimates of Large Earthquakes from the Charleston Seismic Source
- Levine, N. ....HAZUS-Based Comparison of the 1886 Summerville (Charleston) and the 2010 Haiti Earthquakes
- Jaumé, S.....Ambient Seismic Noise Estimates of Building and Soil Resonance in Charleston, South Carolina
- Chapman, M. ....Cenozoic Faults Imaged in the Epicentral Area of the 1886 Charleston Earthquake

### Symposium #2:

#### **Engineering Geology in the Remediation and Maintenance of Dams**

Moderators: John Charleton (Wednesday), Terry Downs (Thursday)

Wednesday, September 22, 2010 ~ Afternoon

Thursday, September 23, 2010 ~ Morning

Technical Session #2, #6

Room: Carolina B (Wed.), Calhoun (Thurs.)

Dams are among the Nation's most critical aging infrastructures. The "Engineering Geology in the Remediation and Maintenance of Dams" symposium presents recent case histories of the means and methods employed to identify the need for dam remediation, design sound, economically viable remedial alternatives, and construct the remedial alternative according to best engineering practices.

- Rogers, J..... Hales Bar and the Pitfalls of Constructing Dams on Karst
- Nield, M. .... Potential Sliding Failure and Anchor Design at Dover Dam, Ohio
- Ballegeer, J..... Raising Scoggins Dam: Shallow Landslides, Large Block Slides and Fault Rupture
- Stanton, J..... Wolf Creek Dam, a 40-Year Technological Evolution, Meeting the Challenge of Reducing Seepage Through a Karst Foundation, Part 1: The First Round, Averting a Near Failure with Emergency Grouting and a Ground Breaking Combination Barrier Wall - The 1970's
- Bomar, J. .... Wolf Creek Dam, a 40-Year Technological Evolution, Meeting the Challenge of Reducing Seepage Through a Karst Foundation Part 2: The Current Remediation, Modern Grouting and New Technology for Excavation, Installation, Measurement, and Qc Verification of the Next Generation Barrier Wall – Today
- Mickiewicz, S..... Engineering Geologic Mapping of the RCC Foundation at Deep Creek Dam, Yadkin County, North Carolina
- Greene, B. .... Engineering Geology and the Construction of an Auxiliary Spillway for Folsom Dam
- Davidson, T..... The Geoforensic Investigation of Ball Mountain Dam
- Patrick, P. .... Landslide Stabilization Design Study, Pervari Dam, Pervari, Turkey

- Deputy, K.....Fish Nets Aren't Just for Dressing Up Anymore – Yale Dam Fish Netting Installation
- Friend, E. ....Field Investigations for Design of a Grout Curtain at Success Dam
- Thacker, B. ....Kingston Coal Ash Facility Failure: What Caused it and Why it Matters
- Rogers, G. ....Construction, Remediation and Monitoring at Dam Sites with Artesian Aquifers
- Cannon, R. ....Geologic Issues and Remediation of Liner at the Ludington Pumped Storage Plant

**Symposium #3:**

**Mineral Aggregates in Transportation**

Moderator: Nancy Whiting, Purdue University  
 Wednesday, September 22, 2010 ~ Afternoon  
 Technical Session #3  
 Room: Calhoun

The Mineral Aggregates in Transportation Symposium, organized in part by the National Transportation Research Board, will explore aggregate properties related to pavement performance, emerging technologies for characterization of aggregate shape and image analysis, challenges related to diminishing aggregate resources, chemical reactions that affect aggregate performance, aggregate testing, adapting aggregate specification to field conditions and more.

- Whiting, N. ....Welcome and Introduction
- Lane, D. ....The Varied Applications and Issues of Mineral Aggregates in the Transportation Infrastructure
- Stokowski, S. ....Predictive Geologic Criteria for Performance Classification of Rock for Construction Aggregate Used in Pavements
- Wang, L. ....Aggregate Characterization by LIM, Linear Laser System, X-Ray CT Scanner, and Portable Imaging System
- Rangaraju, P. ....Toughness and Soundness Behavior of South Carolina Aggregates and Correlation with Field Performance of HMA Pavements
- Powers, L. ....Implications of Diminishing Resources of High Quality Aggregate for Concrete
- Jahn, D. ....Modifying Project Specifications to Better Fit Actual Field Conditions, Part 1
- Jahn, D. .... Modifying Project Specifications to Better Fit Actual Field Conditions, Part 2

**Symposium #4:**

**Visioning the Future of Engineering Geology: New Trends in Assessing Professional Competencies across the Spectrum of Geo-Engineering Practice: A Step toward Resolving Concerns in Professional Practice and Academic Programs**

Moderators: Keith Turner and Jerry Higgins, Colorado School of Mines, and Robert Tepel, California State Mining and Geology Board  
 Wednesday, September 22, 2010 ~ Afternoon  
 Technical Session #4  
 Room: Pinckney

A growing issue in geo-engineering practice around the world is how to assess the professional competencies of practitioners who are trained in academic programs with different yet overlapping content, who practice in a world that values multiple capabilities in its specialists, and yet are licensed to practice by regulatory organizations that have narrowly defined missions. Geo-engineering includes engineering geology, environmental geology, geotechnical engineering, rock mechanics, and geological engineering. Each of these disciplines requires different, but similar, academic preparation and each requires years of experience if the professional is to be successful when engaged in practice that impacts public health, safety, and well-being.

- Tepel, R. .... What is “Geo-Engineering” and Why Do We Need this New Term?
- Turner, A. .... Defining Competencies for Geo-Engineering: Implications for Education and Training
- Schmitz, D. .... Geology Program Accreditation
- Higgins, J. .... Status of Geological Engineering Programs in North America
- Williams, J. .... Supply and Demand for New Professional Engineering Geologists
- Mathewson, C. .... Is Engineering Geology Doomed?
- Keaton, J. .... Geo-Engineering Practice in the Consulting Industry
- Matheson, G. .... Responsibilities for Developing Future Geo-Professionals
- Garsjo, M. .... The Elevator Speech, LP Version

**Symposium #5:**

**Landslides and Slope Stability**

Moderators: Jerry Higgins and Paul Santi, Colorado School of Mines

Thursday, September 23, 2010 ~ Afternoon

Friday, September 24, 2010 ~ Morning and Afternoon

Technical Sessions #8, #13 and #18

Room: Carolina A

The AEG Landslides Working Group has organized two technical sessions on slope stability that include invited and volunteered papers. Technical Session 8 will focus on rock fall characterization and mitigation. Technical Session 13 includes papers on investigation and remediation of large landslides/rock slides and landslide susceptibility mapping. Technical Session 18 includes a variety of landslide and slope stability related issues.

(in order of their presentation)

- Watts, C. ....3D Visualization of Rockfalls at Glacier Point, Yosemite National Park, CA, Using ArcGIS and Google Earth
- Wyllie, D. ....Tornado Mountain Rock Fall Events – Detailed Documentation
- Shakoor, A. ....Cut Slope Design for Mudrock Stratigraphic Sequences
- Gates, W. ....Eagle Point Bluff, Rock Slope Mitigation, Dubuque, Iowa
- Painter, P. ....ODOT’s Revision to Rock Cut Slope & Catchment Design
- Painter, P. ....ODOT’s Recent Rockfall Mitigation Projects: Design vs. Emergency
- Lovekin, J. ....Rockfall Mitigation: Methods to Determine Solutions, Case Histories and Emerging Technologies
- Amend, F. ....Innovations in Rockfall Barriers and the New European Standard ETAG 027
- Ashland, F. ....Characteristics and Movement of the Meadow Creek Landslide, Part of the Coal Hill Landslide Complex, Southwestern Utah
- Fisher, B. ....Limón Dam, Peru – Large Rock Slope Failure Evaluation
- Pippin, C. ....An Overview of the I-40 Rock Slide Hazard Mitigation, Haywood County, NC
- Kuhne, J. ....Stabilization of a Large Potential Wedge Failure Along Interstate 40 in Western North Carolina, October 2009
- Journeaux, D. ....Emergency Rock Remediation I-40
- Smerekanicz, J. ....Emergency Rockslide Mitigation in Eastern Tennessee, US 64 Through the Ocoee River Gorge, 2009 – 2010
- Bauer, J. ....“Your Country is Falling Apart,” Response to Recent Landslides by the North Carolina Geological Survey
- Duplantis, S. ....Mapping and Dating of Landslides in Clackamas County, Oregon, Using LiDAR, Spectral Analysis, and a Soil Chronosequence

- Mickelson, K. ....LiDAR-Based Landslide Inventory and Susceptibility Mapping for the Panther Creek Watershed, Coast Range, Oregon
- Johnson, S. ....The Delineation and Characterization of Active Landslides in the Greater Cincinnati Area Using LiDAR-Derived Maps
- Joyce, J. ....Geology of the Cerca de Cielo Creep and Surge Landslide, Ponce, Puerto Rico
- Pirot, R. ....Landslide Hazard Evaluation at Bingen Quarry, Bingen, Washington
- Bolz, P. ....Geology and Landslides Along the Nenana Canyon, Alaska
- Pickering, T. ....The Threat of the Dowd’s Junction Landslide to I-70, Eagle County, Colorado
- Brunkal, H. ....Debris-Flow Dewatering Brakes: Design and Applicability
- Neal, K. ....Evaluation of Slope Stability Characteristics and Alternative Stabilization Measures, Block 14 Debris Flow Site, Lake Merwin Campers Hideaway, Clark County, Washington
- Shevlin, T. ....Shallow Landslide Barriers – Flexible and Cost-Effective: A Case Study of the World’s First Shallow Landslide Barriers
- Pond, S. ....Failure of Chimborazo Hill - August 30, 2004, Richmond, Virginia
- Hamel, J. ....Forensic Investigation of a Backyard Landslide With a Sewer, Bethel Park, Pennsylvania
- Mininger, Kevin...Lifespan of Horizontal Wick Drains Used for Landslide Drainage

**Symposium #6:**

**Environmental Characterization and Remediation**

Moderators: Suman Ghosh, MISSION Geoscience, Inc.; and Syed Hasan, University of Missouri – Kansas City  
Thursday, September 23, 2010 ~ Afternoon  
Technical Session #9  
Room: Carolina B

The Environmental Site Characterization and Remediation Technical Workgroup (ESCRTW) of AEG has organized its first Environmental Characterization and Remediation symposium at AEG's Annual Meeting in Charleston, SC. The focus of the symposium will be on recent developments and advances in the field of environmental site characterization and remediation, and will present related case studies to demonstrate their effectiveness and lessons learned.

(in order of their presentation)

- Slater, L. ....Advances in Geophysical Monitoring Technologies for Characterization and Remediation Monitoring of Contaminated Sites
- Moylan, J. ....Design Site Characterization Dictated by Pertinent Site Conditions and the Selected Remedial Technology
- Bohling, G. ....Centimeter-Scale Characterization of Hydraulic Conductivity at the MADE Site Using Direct Push Techniques
- Mazzarese, M.....Use of Advanced Site Characterization Tools for High Resolution Injection Design Support
- Singh, A.....Statistical Evaluation of a Multiple Increment Sampling Design Approach for Cleanup Decisions at Superfund Sites
- Quindry, G. ....Subsurface Methane Risk Mitigation: Remedial Solutions at a New Middle School in Signal Hill, California
- Finneran, K. ....Effect of Fe(III) Reduction in the Biodegradation of Chlorinated Ethenes
- Binder, J.....Seep Control and Treatment Using Modification to Natural Stream Morphology
- Odah, M.....Accelerated Remediation Technology for Cost-Effective Remediation of Groundwater

**Symposium #7:**

**Role of State Geological Surveys in the Assessment of Geological Hazards**

Moderators: Kenneth Taylor, North Carolina Geological Survey; and Bill Clendenin, South Carolina Department of Natural Resources Geological Survey  
Friday, September 24, 2010 ~ Afternoon  
Technical Session #21  
Room: Pinckney

This symposium presents several examples of the unique position state geological surveys play in applied geological research, emergency response and technical analysis of geohazards. An extensive archive of research material has been accumulated over the 180+ years these organizations have been in existence which has direct application to mineral resource assessment and geohazard analysis. (in order of their presentation)

- Taylor, K. .... The Next Geohazard – Joint Local/State/Federal Planning for a Coordinated Scientific Response to a Geologic Disaster, Part 1
- Taylor, K. .... The Next Geohazard – Joint Local/State/Federal Planning for a Coordinated Scientific Response to a Geologic Disaster, Part 2
- Clendenin, C..... Superimposed Reactivation; Similarities Between Two Large South Carolina Earthquakes, Part 1
- Clendenin, C..... Superimposed Reactivation; Similarities Between Two Large South Carolina Earthquakes, Part 2
- Howard, S..... Observations of the 1886 Charleston Earthquake in Central South Carolina, Evidence of Fault Reactivation
- Wooten, R. .... The North Carolina Landslide Program: 3,864 km<sup>2</sup> Mapped, and 6,042 Landslide Features Later - Findings and Observations
- Cattanach, B. .... Integrated Lineament Analyses, Fracture Studies and Detailed Geologic Mapping Near Skyland, Western North Carolina
- Taylor, K. .... Sinkhole Hazard Education Campaign – Onslow County, N.C. Case Study Integrating State and Local Partnerships Technical Sessions