



The Official

OREGON SECTION AEG NEWSLETTER

<http://www.aegoregon.org>

February Meeting Details

Tuesday, February 18th

Location: Old Market Pub

6959 SW Multnomah

Portland, Oregon

6:00 pm Social

6:45 pm Dinner

7:30 pm Presentation

Dinner: Pizza & Salad

\$20 Dinner (\$5 Students)

Reservations:

mwegner@cornforthconsultants.com
with "AEG Reservation" in
the subject line or 971-222-
2047 by 4 pm Thur. Feb. 13

There is a \$2 surcharge for
those who do not reserve by
the deadline

Upcoming Meetings:

Mar 18th Laura Maffei
Apr 15th Jeff Coe
May 20th Student Poster Night



"Liquefaction: Peels and Practice" a program intended to put local liquefaction assessment in national context

Guest Speakers: Brian Atwater, Yumei Wang, Mike Beaty, Dan Gillins, and Wesley Spang

An unusual two-part program will focus on liquefaction. First, sediment peels will provide subterranean insights into liquefaction triggering and consequences along the Columbia River. Second, a panel-led discussion will consider the state of practice in liquefaction assessment in Oregon and beyond.

The sediment peels reveal liquefaction plumbing beneath a river bank 40 kilometers east of Astoria. The bank exposes dozens of sand dikes from the 1700 Cascadia earthquake. Sediment slices were collected in sheetpile driven beneath the bank, and peels 25 feet long were made from the slices. The peels, to be presented by Brian Atwater of the U.S. Geological Survey, raise questions about which sand liquefied and which did not. Such questions extend to case-history data on liquefaction triggering.

The panel discussion will consider further issues in liquefaction assessment now under study by a committee convened under the National Research Council. The committee of the National Research Council will solicit input from the technical community and critically examine the technical issues regarding liquefaction hazard evaluation and consequence assessment. The study will assess and evaluate the:

- Sufficiency, quality, and uncertainties associated with laboratory and in situ field tests, case histories, and physical model tests to develop and assess methods for determining liquefaction triggering, and the resulting loss of soil strength and its consequences;
- Methods to conduct and analyze laboratory and physical model testing and to collect and analyze field case history data to determine the triggering of liquefaction, and post-liquefaction soil behavior (e.g. strength loss, dilation, and hardening);
- Adequacy and accuracy of empirical and mechanistic methods to evaluate liquefaction triggering and post-liquefaction deformations of earth structures and structures founded on or in the earth, such as large embankment dams, levees, dikes, pipelines, highway embankments, bridges, pile-supported decks, and other structural foundations. Effects at large depths and high static shear stresses on liquefaction triggering and post-earthquake shear strength will be among those addressed.

The study will focus on developments since the 1996 National Center for Earthquake Engineering Research (NCEER) and the 1998 National Science Foundation/NCEER workshops on liquefaction issues and consider data including those related to soil properties, site characterization, ground motions, and observations and measurements of soil response (e.g., post liquefaction deformations). Inherent characteristics associated with the data (e.g., uneven distribution, scarcity, uncertainty) will be investigated. The study will include a workshop on data gathering, vetting of field and laboratory data, and new developments in the assessment of earthquake induced soil liquefaction. The final report will assess the state-of-the-art and practice for liquefaction analyses and will address future directions for research and practice related to (i) collecting, reporting, and assessing the sufficiency and quality of field case history observations as well as in situ field, laboratory, and model test data; (ii) addressing the spatial variability and uncertainty of these data; and (iii) and developing more accurate tools for assessing liquefaction triggering and its consequences.

The project is sponsored by the Bureau of Reclamation, U.S. Nuclear Regulatory Commission, the American Society of Civil Engineers and the Geo-Institutes, and the Port of Los Angeles



A graphic example of how the 1964 Alaska earthquake caused damage by means of lateral spreading toward channels



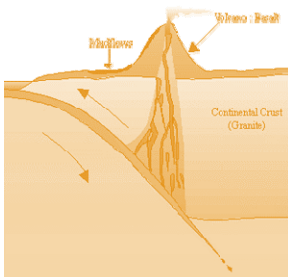
Bio: Brian Atwater

Brian Atwater studies earthquake hazards as a U.S. Geological Survey geologist affiliated with the University of Washington. His findings about prehistoric land-level change, tsunamis, and liquefaction helped build today's consensus that the Cascadia Subduction Zone produces great earthquakes and associated tsunamis. He has made comparative studies in Alaska, Chile, and Japan. His current work includes study of extreme-wave deposits on Indian Ocean shores and in the Caribbean, and service on a National Research Council committee on liquefaction



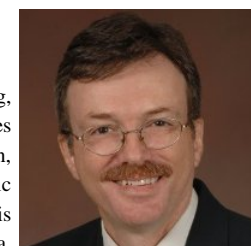
Bio: Yumei Wang

Yumei Wang, PE, is a geohazards engineer at Oregon Department of Geology and Mineral Industries and focuses on building resilience to future earthquakes, tsunamis, and landslides. She has been an advisor to the National Research Council on landslide hazards and earthquake resilience and to the National Earthquake Hazards Reduction Program (NEHRP), has chaired the Oregon Seismic Safety Policy Advisory Commission, and has taken part in post-earthquake assessments including the 2011 Tohoku Japan and 2010 Maule Chile disasters. Ms. Wang has performed risk engineering and seismic hazard analyses and is currently focused on reducing risk to critical infrastructure in Oregon. Ms. Wang has been a guest on the PBS NewsHour, been interviewed by The New York Times, and has appeared in documentaries produced by NOVA and National Geographic. Ms. Wang has served as Congressional Fellow, sponsored by the American Association for the Advancement of Science (AAAS), in the U.S. Senate in Washington D.C., has worked as a geotechnical consultant in California, and has a B.A. in geological sciences from the University of California at Santa Barbara and a M.S. in civil engineering from the University of California at Berkeley.



Bio: Mike Beaty

Dr. Beaty is an independent consultant specializing in geotechnical and earthquake engineering, numerical analysis, liquefaction evaluation, and soil-structure interaction. His experience includes dams (embankment, rockfill, and concrete), levees, lateral spread evaluations, ground remediation, landslide stabilization, and foundations. His work using FLAC to analyze liquefaction and seismic deformation response includes co-authoring the UBCSAND constitutive model. While much of his work is in the Pacific Northwest, his projects have included locations throughout the US, Canada, Mexico, New Zealand, Belgium, and Chile. Michael has degrees in geotechnical and structural engineering from UC Berkeley (BS), UC Davis (MS), and the University of British Columbia (PhD). He is a registered geotechnical engineer in Oregon, a civil engineer in California and Washington, and the principal engineer of Beaty Engineering located in Beaverton, Oregon.



Bio: Dan Gillins

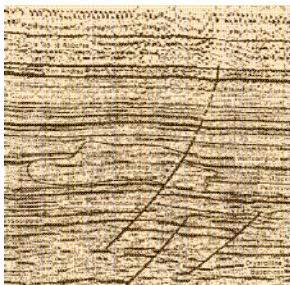
Dr. Dan Gillins is an assistant professor of civil engineering at Oregon State University. His research includes surveying and mapping earthquake-induced hazards, such as liquefaction and lateral spreading. Recently, he developed new liquefaction hazard mapping techniques to estimate the probability and uncertainty of liquefaction-induced ground failure under funding provided by the U.S.G.S. National Earthquake Hazard Reduction Program. Currently, he is evaluating recent case studies of liquefaction after large-magnitude subduction zone earthquakes in Japan and Chile. Dan is a licensed professional land surveyor in Utah, and has a BS, MS, and PhD in civil engineering from the University of Utah.



Bio: Wesley Spang

Wesley Spang is a principal geotechnical engineer with Geotechnical Resources Inc. (GRI). Dr. Spang has over 25 years of experience providing geotechnical earthquake engineering analyses including liquefaction, dynamic slope stability, lateral spreading, and site response. He has provided seismic hazard analyses for industrial, waterfront and municipal projects in California, Oregon and Washington. Wes has a B.S. in Engineering Geology, B.S. in Civil Engineering, and M.S. in Civil Engineering from Purdue University. He obtained his Ph.D. in Civil Engineering from the Georgia Institute of Technology.





Message from the Chair

Thanks to all those who signed up for the US Highway 20 field trip and our apologies that it had to be cancelled. Given the overwhelming interest (over 30 signed up in response to the early announcement), we will be planning a field trip later this season...and we already have a few ideas. Stay tuned.

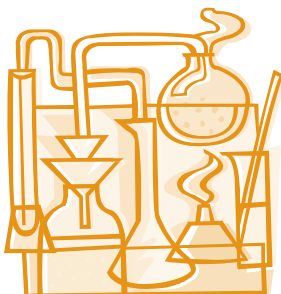
The joint AEG/ASCE meeting was terrific with Dr. Catherine Aimone-Martin presenting on "Underwater Rock Blasting for the Columbia River Channel Improvements Project". The presentation showcased the blast design and the detailed monitoring program required for about a mile of the Columbia River Channel Improvement Project.

Please be aware of the revamped student travel grant for attending the 2014 AEG National Meeting in Scottsdale, Arizona. The announcement is detailed on our website at www.aegoregon.org. We are hoping that this program helps get more students to the National meeting and increases long-term interest in AEG and showcases AEG's benefits to the student community and their future careers.

Note that the Oregon State Board of Geologist Examiners has released the preliminary draft Guideline for Preparing Engineering Geologic Reports for public comment. The document is located on their website at www.oregon.gov/OSBGE/Pages/index.aspx.

See you at the February meeting, back at the Old Market Pub.

Darren Beckstrand, CEG
Cornforth Consultants

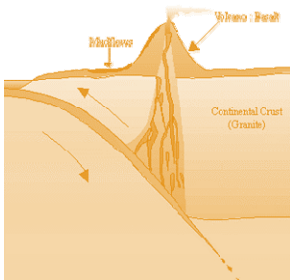


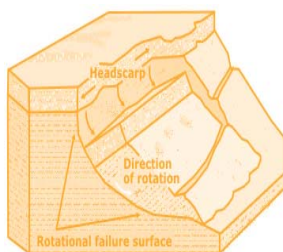
Message from the Field-Trip Chair Erin Dunbar

Bad news, good news.

Bad News: We had to cancel our field trip we that was planned on February 1.

Good News: We are open to suggestions for future field trips! Do you have trip in mind? Would you like to lead your fellow geologists on a fun filled, educational excursion? Send me an email at dunbar.erin@gmail.com. Spring and summer are just around the corner. Send me your ideas!





Western States Soil Conservation, Inc.

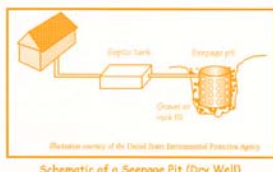
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Ralph Soule of GeoPotential is retiring! Tony Bartruff, who has worked for GeoPotential for the last three years, has demonstrated his ability and qualifications to plan and conduct future subsurface surveys and will be managing future day-to-day activities. Thank you to all of our clients over the years. Tony.Bartruff@GeoPotential.biz Cell: 360-921-7712



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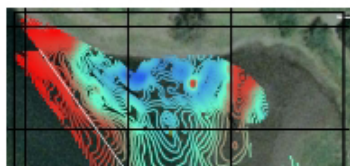
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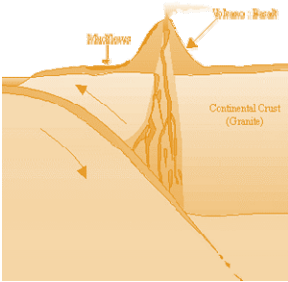
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least as necessary as
penetrating analysis"*

Karl Terzaghi



1. Slope stabilisation, Switzerland
2. Slope stabilisation, UK
3. Rock slope stabilisation, Australia

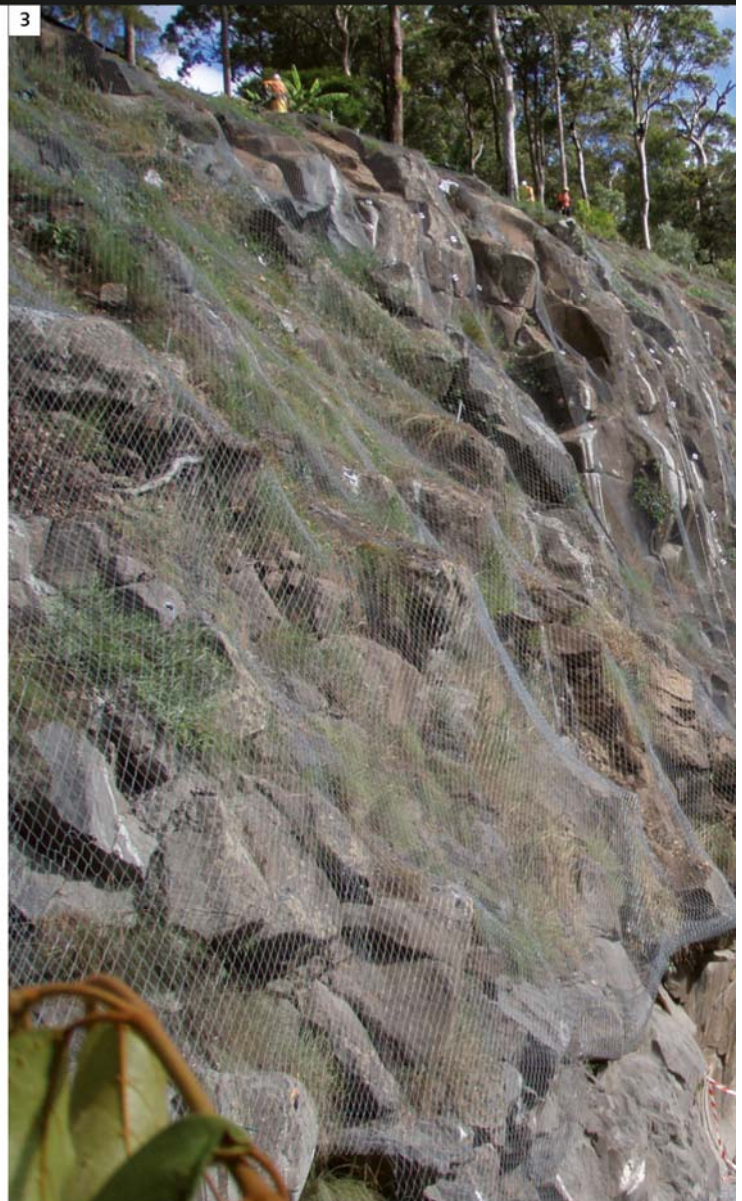


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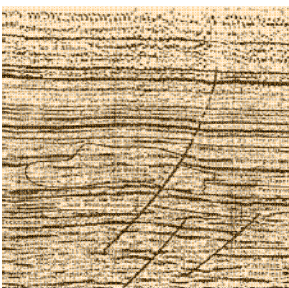
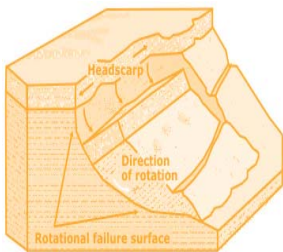
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earth stabilization systems

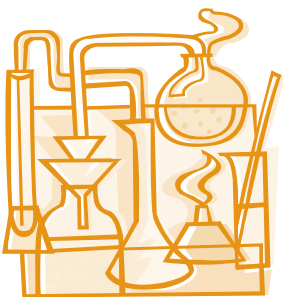
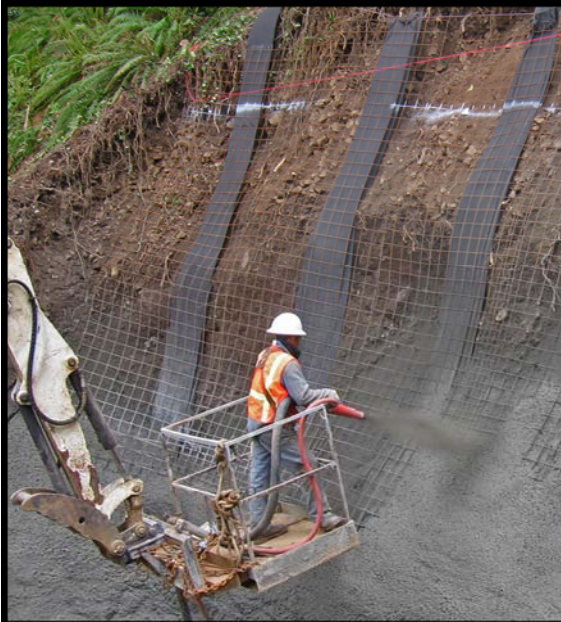
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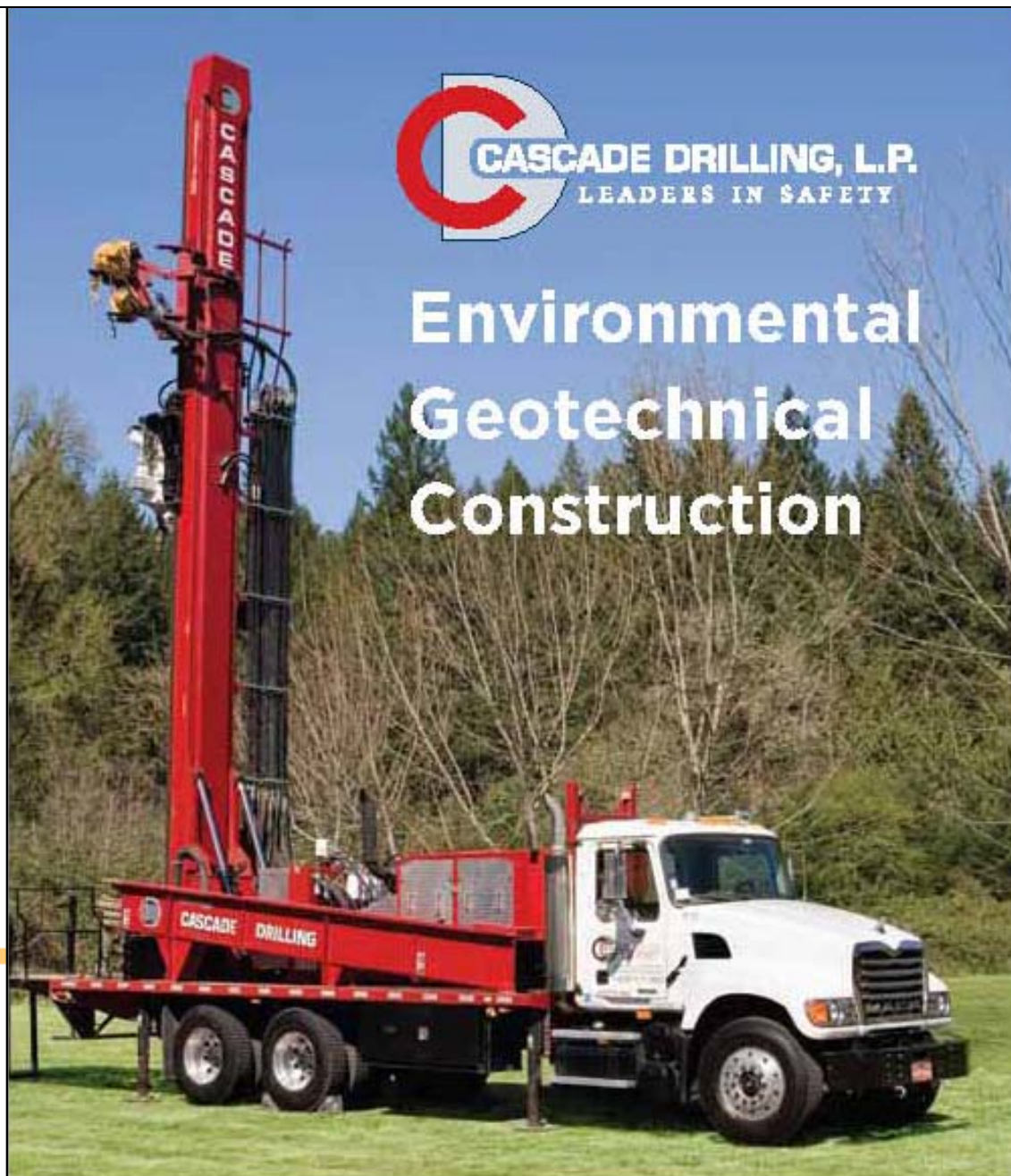
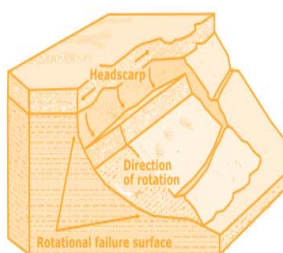
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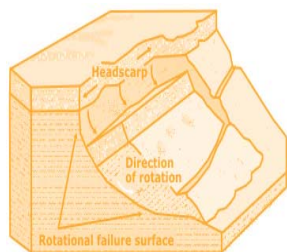
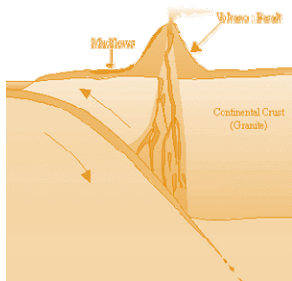


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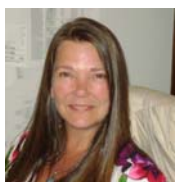


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