OREGON SECTION OF THE ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS

October 2014

Volume 15, Number 2

The Official

OREGON SECTION AEG NEWSLETTER

http://www.aegoregon.org

October Meeting Details

Tuesday, October 14th

Please note change in date!

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
Students FREE with RSVP
($5 if no RSVP)

Reservations:
mwegner@cornforthconsultants.com with "AEG Reservation" in the subject line or 971-222-2047 by 4pm Thur. Oct. 9

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

Upcoming Meetings:

Nov	18th	Colin Thorne
Dec	16th	Jim O'Connor
Jan	20th	AEG/ASCE Meeting
Feb	17th	AEG/AWG Meeting
Mar	17th	Scott Wallace
Apr	21st	Brian McNamara
May	20th	Student Poster Night

KABOOM! (or whoosh?) [AKA: Mitigating Blasting Impacts without Diminishing Effectiveness]

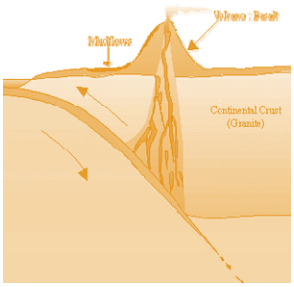
Guest Speaker: Dr. Gregory Hempen, Richard H. Jahns Distinguished Lecturer

Blasting can achieve its desired purpose and, when cautiously conducted, will have assurance of avoiding significant impacts or damage nearby.

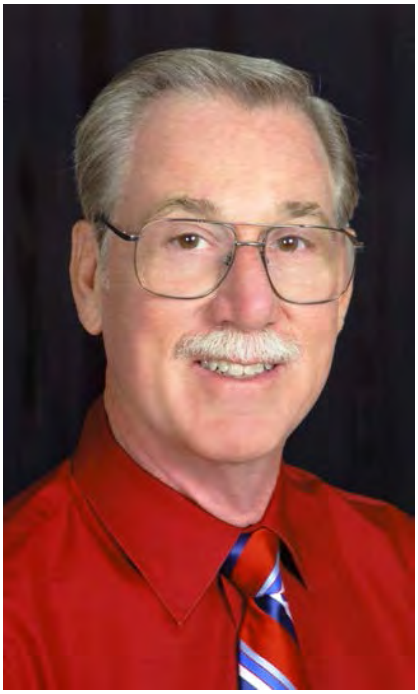
Blasting is a mysterious art that is considered extremely dangerous by the public. Blasting is very effective in moving low-tensile materials (rock & concrete) that cannot be easily excavated mechanically. Blasting is effective, because the chemical release of energy from the blasting agent results in detonation and in great gas-volume production in a very short time. The blaster uses empirical approaches and developed experience to perform the activity required and to create the blaster's largest profit.

The three primary impacts due to blasting are: flyrock, noise (airblast), and vibrations (or pressure waves in an aquatic environment). Secondary effects from these impacts cause other hazards away from the blasting zone. These primary impacts can be controlled by the blasting parameters used, and for some projects, by additional mitigating measures. Achieving the required goal of blasting most effectively may be counter to adequately reducing the secondary effects that are possible. The talk considers the application of mitigation research for unusual blasting cases. Some of the cases noted include: quarry blasting's possible disturbance of hibernating Myotis Sodalis (Indiana Bats); impacts upon a planned Natural Gas pipeline near an active quarry; removal of the Embrey Dam (Rappahannock River near Fredericksburg, VA); rock excavation near geologic hazards; and, adverse impacts from blasting of, or near, water-borne structures. Geophysical assessment of the site is required to understand wave passage and how vibratory, or pressure-wave, impacts may have damaging amplitudes beyond the blasting zone.

Each of these cases is briefly developed to note the proper approach to mitigating human, environmental, geologic and structural impacts without diminishing the capacity to effectively perform the blasting. The important issues are to research past similar projects, calculate anticipated impacts, resolve a means to measure impacts (if warranted), anticipate important blasting parameters, and develop the blasting contract and information to complete the purpose of the blasting. Many projects require some education of the owner (client), engineer-in-charge, blasting firm, those that could be harmed by blasting, and/or the general public. Blasting can be conducted to achieve the project's goals without causing adverse impacts to surrounding areas.

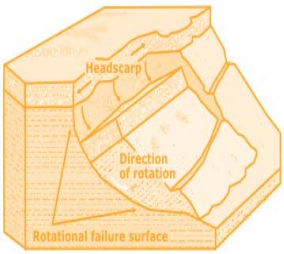


Bio: Dr. Gregory (Greg) L. Hempen



Gregory (Greg) L. Hempen has been named the 2013-2014 Richard H. Jahns Distinguished Lecturer in Engineering Geology. Greg is a Geophysicist / Geological Engineer, consulting for URS Corporation's St. Louis Office. During his entire career, Greg has held only one title, Geophysicist. He specializes in all types of vibration mitigation from earthquakes, blasting and pile driving, and recommending appropriate geophysical studies for complex sites. His 40+-year career includes a long tenure at, and retirement from, the St. Louis District, Corps of Engineers.

Greg has conducted duties for all levels of government, federal, state and local. He had worked closely with consulting firms managing studies on federal projects. He now works in the private sector, but continues studies for federal and state offices. His duties have included: site assessment of dam sites, regional earthquake studies for federal dam sites, probabilistic and deterministic appraisal of potential earthquake impacts, varied geophysical studies for different projects' concerns (from archeological to environmental transport to groundwater to rock weaknesses), blast vibration mitigation while effectively achieving the blasting goal, environmental mitigation, and the dreaded – "other duties, as assigned."



Greg received a B.S. in Geophysical Engineering from St. Louis University, a M.S. in Geo-Engineering from the University of Minnesota, Minneapolis-St. Paul, and a Ph.D. in Geological Engineering from the University of Missouri - Rolla (now Missouri University of Science & Technology). He is a Registered Professional Engineer in Missouri and Registered Professional Geologist in Arkansas and Missouri.

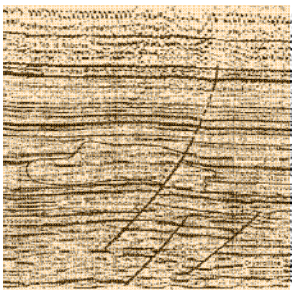
Greg has written a variety of publications on issues to share the understanding of procedures, instead of keeping proprietary control of methodologies. Greg has been an adjunct professor at all the engineering universities in the St. Louis area. He has taught Environmental Science classes and Geotechnical Engineering courses. His longest running class was offered once a year - "Seismology and Seismic Design" (CE 530A), Civil Engineering Department, Washington University of St. Louis, 1989 to 2004. Greg had taught at several Corps of Engineers' professional training courses.

Several causes have gained Greg's attention over the years. He has long been active with AEG (President, 1989-1990), and GSA – EGD. He had a minor role in developing the administration of the Jahns' Lectureship. He is also active with several other professional organizations. He has been involved with the pursuit of several important public issues, including Geologists' Registration, public disaster preparedness, and building code adoption. He has served on state commissions, and is presently serving on two Missouri State organizations.

Some of the accolades that Greg has received are: the Otto Nuttli Award from the St. Louis Section of the American Society of Civil Engineers, October 2011; a Professional (Honorary) Degree from Missouri University of Science & Technology, December 2010; award with the Army and Corps team for the Embrey Dam removal, May 2004; Johnston Service Award from AEG, October 2002; Achievement Metal for Civil Service, December 1998; and, 1991 Regional Outstanding Engineer from the Missouri River Region of the Society of American Military Engineers.

"Keen observation is at least as necessary as penetrating analysis"

Karl Terzaghi



Message from the Chair

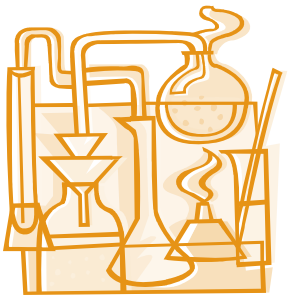
Thank you to everyone who attended our September meeting. **Dr. Adam Booth**, Portland State University, gave an excellent talk about a large bedrock landslide complex in Norway and fielded numerous questions from an inquisitive crowd. It was a great start to our season!

I just returned from AEG's 57th Annual Meeting in Scottsdale, Arizona. The Oregon Section was represented well with talks by **Scott Burns** (two!), **Kate Mickelson**, and a poster by **Kassandra Lindsey**. **Richard (Dick) Iverson**, from USGS Cascades Volcano Observatory in Vancouver, WA, provided the keynote talk on the Oso landslide at the Landslides Symposium. Past Chair **Darren Beckstrand** moderated not one but *three* very interesting Landslides Symposium Technical Sessions! I participated in the Board of Directors meeting, and **Kevin Schleh** also participated as Co-Chair of the Governance Committee. Oregon won the AEG Outstanding Section Award! Thank you to everyone in the Oregon Section for making our Section great. To top it off, **Kassandra Lindsey** (PSU Student Chapter) won both the Stout Scholarship and the Corporate Sponsors Scholarship! My sincere thanks goes out to everyone who presented or otherwise participated in the meeting by attending the technical sessions, field trips, and/or short courses.

Congratulations to **Scott Burns**, who was elected president of IAEG! The US won the bid to host the next IAEG conference in 2018 in San Francisco.

This month's speaker is **Greg Hempen**, the 2013-2014 GSA/AEG Richard H. Jahns Distinguished Lecturer in Engineering Geology. Greg's talk is entitled *KABOOM! (or whoosh?) [AKA: Mitigating Blasting Impacts without Dimishing Effectiveness]* and considers the application of mitigation research at unusual blasting sites.

Save the date: the latest AEG Shlemon Specialty Conference, *Time to Face the Landslide Hazard Dilemma: Bridging Science, Policy, Public Safety, and Potential Loss* will be held at the University of Washington on February 26-28, 2015 and will include two days of technical sessions and one day of field trips. Please see the conference announcement on page 5. You won't want to miss it!



I look forward to seeing you on October 14th at the Old Market Pub!

Cheers,

Linda Mark, RG, CPG

AEG Oregon Section Chair

Fall Term Courses at Portland State University

Environmental Geology, Perkins, G561, 4 credits, MW 17:15-18:30 and F, 15:15-17:15 (lab)

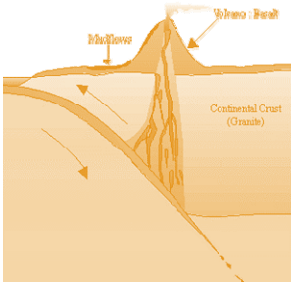
Geodynamics, G510, Max Rudolph, 4 credits, MW 10:15-11:20 and F 10:15-11:20 (lab)

GIS for Natural Sciences, G524, Percy, 4 credits, TuTh 14:00-15:05 and lab is TuTh 12-2

Geology Seminars at Portland State University

Information found at http://www.geology.pdx.edu/seminars

Colloquium is in Cramer Hall 287 at 3:30pm, all are welcome to attend. Please email rmaxwell@pdx.edu for additional info, or if you would like to meet with any of the speakers.



10/1 Rob McCaffrey (PSU Geology)
Talk title: "Great Subduction Zone Earthquakes"
10/15 Greg Hempen (AEG Jahns Lecturer)
10/29 Shan de Silva (OSU)
Talk title: "Time scales and tempos in continental arc magmatism - insights from volcanic, plutonic, and detrital records associated with magmatic flare-ups"
11/12 Mark Simons (Caltech)
11/19 Brittany Erickson (PSU Math)
12/3 Larry Mastin (USGS CVO)

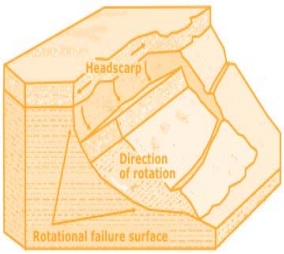
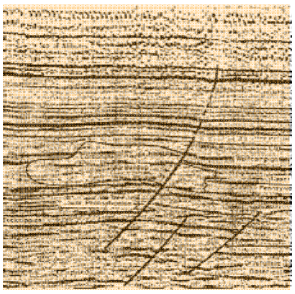


Photo of the Month courtesy of Adam Reese

Bluff erosion at south end of The Capes development in Oceanside, Oregon.



Thanks For Supporting AEG

Apex Companies, LLC

Columbia Geotechnical

Cornforth Consultants

ESA Vigil-Agrimis

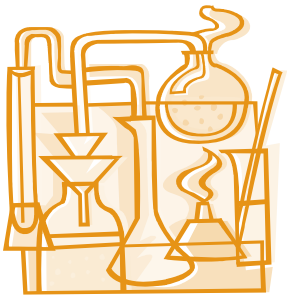
GRI

Oregon Department of Transportation

PBS Engineering and Environmental

Portland State University

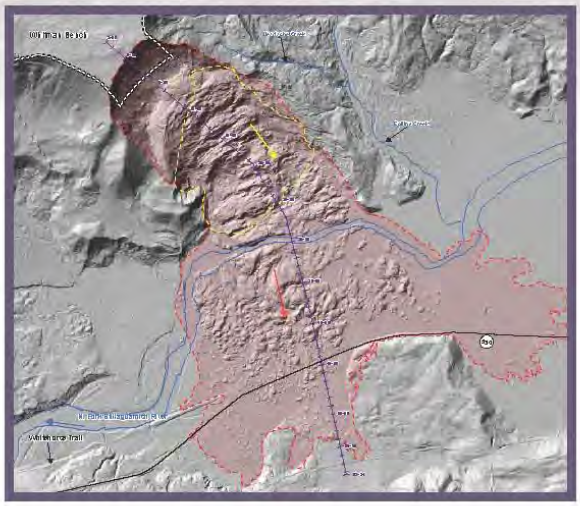
PRISM Climate Group, NACSE, OSU



AEG Shlemon Specialty Conference

FEBRUARY 26th-28th, 2015 ■ *University of Washington, Seattle, WA*

Time to Face the Landslide Hazard Dilemma: Bridging Science, Policy, Public Safety, and Potential Loss



Recent prominent landslides in the U.S., such as the tragic March 2014 Oso Landslide in Snohomish County, Washington, have resulted in significant loss of life and damage/cost to both private and public infrastructure and illustrate the current disconnect between landslide hazard assessment and the interests of the public. This AEG Shlemon Specialty Conference will bring together technical experts in landslide hazards, state geologists, public officials and regulators, insurance and realty representatives, media, and researchers to discuss the next steps in communicating landslide hazards to the public. The main objective of the conference is to develop strategies for bridging the gap between science, land use, and public interests so that the potential for future tragedies can be avoided or mitigated.

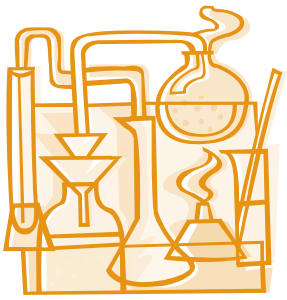
The conference will consist of 2 days (Th-Fri) of technical and other presentations by invited speakers, posters, discussion sessions and workshops regarding: landslide hazard assessment and risk methodology, current state and local programs and how these can be integrated into current and potential future national programs, what's working and where do we need to improve, can we develop consensus recommendations and guidance for agencies responsible for land use, and more. There will also be an optional field trip to the Oso landslide and another recent landslide impacting several houses in Everett, WA on Saturday.

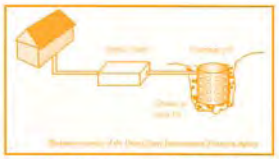
Co-Sponsor:
University of Washington Department of Earth & Space Sciences

Supporting Organizations (Preliminary):
Washington State Geological Survey, AEG WA Section and UW Student Chapter, King County

Image Credits:
GEER Oso Investigation Team and Kathy Troost, UW ESS Dept.

Note: Details are preliminary and subject to change. Final details and registration information will be posted to **www.aegweb.org** and presented in future AEG News and AEG Insider publications

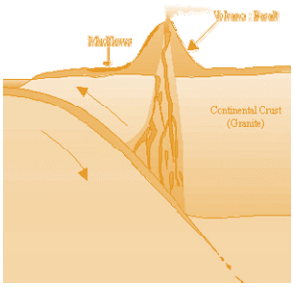


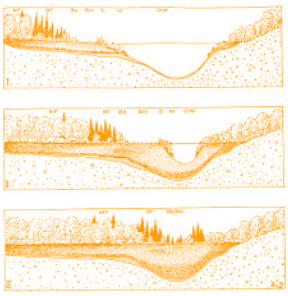


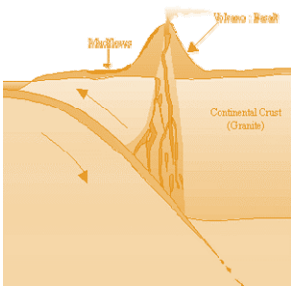
Schematic of a Seepage Pit (Dry Well)

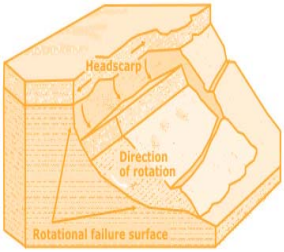
"Keen observation is at least as necessary as penetrating analysis"

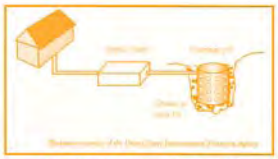
Karl Terzaghi

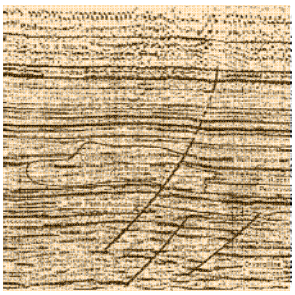


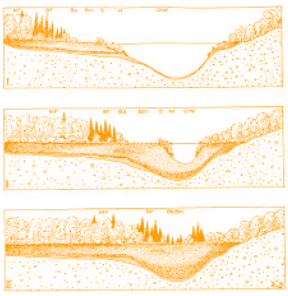


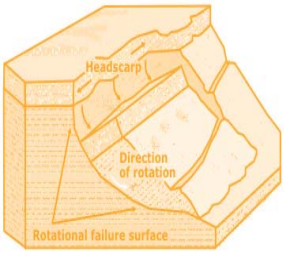





Schematic of a Seepage Pit (Dry Well)

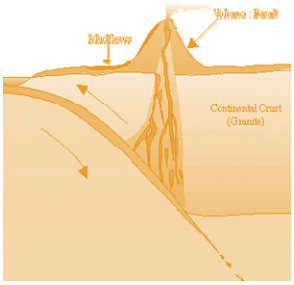


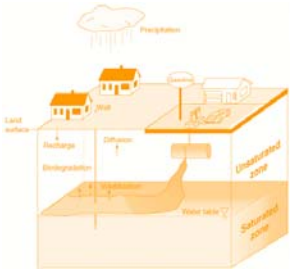


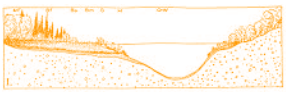


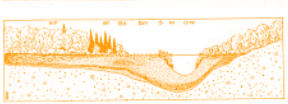
"The earth is large and old enough to teach us modesty."

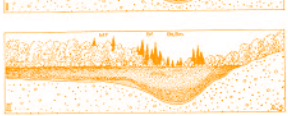
Hans Cloos

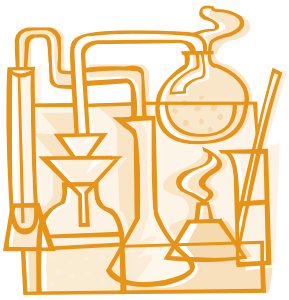


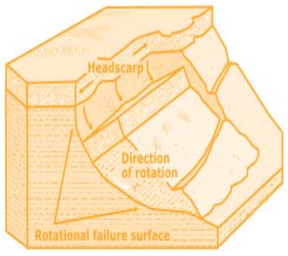












Section Officers & Committee Chairs

Chair:

Linda Mark

ESA Vigil-Agrimis

lmark@esassoc.com

Program Chair:

Michael Marshall

GRI

mmarshall@gri.com

Could Be You ?

Legislature Chair:

Vacant

Chair Elect:

Adam Reese

Apex Companies, LLC

AReese@apexcos.com

Field-Trip Chair:

Erin Dunbar

dunbar.erin@gmail.com

Could Be You ?

Visiting Professional Program (VPP) Chair:

Vacant

Treasurer:

Stephen Hay

Oregon Department of Transportation

Stephen.HAY@odot.state.or.us

Membership Chair:

Ruth Wilmoth

Columbia Geotechnical, Inc.

ruthwilmoth@comcast.net

Newsletter Editor:

Scott Braunsten

PBS Engineering and Environmental

scott.braunsten@pbsenv.com

Secretary:

Mark Swank

PBS Engineering and Environmental

mark.swank@pbsenv.com

The Oregon Section is also on the web at
http://www.aegoregon.org
National AEG webpage:
http://aegweb.org

Webpage Editor:

Keith Olson

PRISM Climate Group, NACSE, OSU

olsonke@nacse.org

Past Chair:

Darren Beckstrand

Cornforth Consultants

dbeckstrand@cornforthconsultants.com

Subscribe to the newsletter by sending any e-mail to aegoregon-subscribe@groups.electricembers.net

PSU Student Chapter President:

Dougal Hansen

Portland State University

dougal@pdx.edu

The Oregon Section Newsletter

OREGON SECTION AEG NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Section or other Sections, and other interested people who have requested and paid a local subscription fee of $10.00. E-mail subscriptions are free. News items are invited and should be sent to: Scott Braunsten, OR Section AEG Newsletter Editor, PBS Engineering and Environmental, 4412 SW Corbett Avenue, Portland, OR 97239, e-mail: scott.braunsten@pbsenv.com, phone (503) 417-7737. Electronic media is preferred. Deadline for submittal is the 25th of the month. Advertising: business card $100/yr; ¼ page $200/yr; ½ page $350/yr; 1 page $450/yr. Please notify Scott if you have a change to your email or mailing address.

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.