OREGON SECTION OF THE
ASSOCIATION OF ENVIRONMENTAL &
ENGINEERING GEOLOGISTS

December2008

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The Official

OREGON SECTION AEG NEWSLETTER

December Meeting Details

Date: Tuesday, December 16

Location: Lucky Lab

1945 NW Quimby

Portland, OR

6:00 pm Social

7:00 pm Dinner

8:00 pm Presentation

Dinner: Burgers and Fries

$18 Dinner ($10 Students)

Reservations: mwegner@cornforthconsultants.com with "AEG Reservation" in the subject line or 971-222-2047 by 4pm Thursday December 11th.

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

Upcoming Meetings:

- **January 20: Yumei Wang, Multi-Hazards**
- **February 17: Jenne Castro, Stream Restoration**
- **March 17: TBA**
- **April 21: Student Night**
- **May 19: Ed Medley**

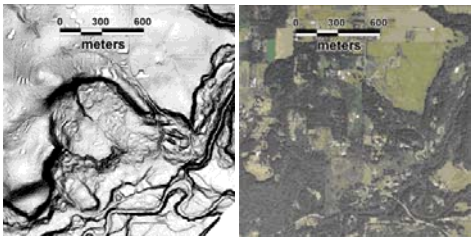
The December Meeting Guest Speaker is Mark Molinari from URS Corporation

Presentation: Practical Applications of Airborne LiDAR Data for Environmental and Engineering Geology Projects

Over the past decade there has been a significant increase in the use of airborne LiDAR (Light Detection and Ranging) data to create detailed topographic base maps and high-resolution (0.2 - 1 m vertical accuracy) digital elevation models (DEMs) for a variety of regional and site-specific projects. If the scope of data acquisition is properly defined and implemented, LiDAR is effective in all types of terrain and vegetation; however it is particularly useful in densely vegetated areas where conventional photogrammetry-based topographic maps and resulting DEMs have a relatively low accuracy. In addition, it is very cost-effective in steep or remote terrain that cannot be easily surveyed by conventional methods. This talk will present a variety of examples where LiDAR was successfully used for environmental and engineering geology projects and the type of derivative products that can be generated using GIS or other computer applications. Primary lessons learned regarding acquisition and QA/QC review of LiDAR data, management of LiDAR vendors, managing large LiDAR data sets and automation of LiDAR data processing will also be summarized. Example projects include:

- Use of LiDAR-derived GIS products for 28 separate proposed timber sale areas covering approximately 1,400 square miles in Tongass National Forest in Southeast Alaska to map and evaluate geologic hazards and watershed hydrology, karst, and potential hydrologic effects of the surging Hubbard Glacier on Russell Fjord, and road reconstruction
- Active fault and landslide mapping
- Unexploded ordinance range mapping
- Structural geologic mapping of an inaccessible rock avalanche
- Mine tailing and landslide debris volume estimates
- Levee evaluation
- Detailed topography for surface water- groundwater interaction for a contaminant plume
- Floodplain mapping and geomorphic analysis
- Wetlands hydrology

For more information on LiDAR data see the Oregon LiDAR Consortium at: http://www.oregongeology.org/sub/projects/olc/default.htm Also, the Puget Sound Lidar Consortium at: http://pugetsoundlidar.ess.washington.edu/lidardata/index.html



Comparison of lidar-based digital elevation model (DEM) map on the left with conventional orthophoto on the right.

URS

Bio: Mark Molinari, AEG President

Mark Molinari is a Principal Engineering Geologist at URS Corporation in Seattle, Washington with 25 years consulting experience assessing geologic and seismic hazards, and performing and managing environmental assessment and remediation projects. He has worked throughout the western U.S., including Alaska, and internationally. He has performed geologic and/or seismic hazard assessments for environmental impact studies, permit applications, and siting and design of onshore and offshore petroleum facilities, power plants, LNG terminals, dams, linear utility corridors, public and commercial facilities, and municipal, hazardous and low-level radioactive waste facilities. His environmental project experience includes due diligence environmental site assessments, hydrogeologic assessments, Remedial Investigation/Feasibility Study (RI/FS) projects, and remedial actions for a wide range of oil & gas, aerospace, and commercial and industrial clients. In addition, he has a RI/FS project for a four square block Brownsfield site for the University of Washington. Mr. Molinari is a Licensed Geologist, Hydrogeologist and Engineering Geologist in Washington; a California Professional Geologist and Certified Engineering Geologist, and a Nebraska Professional Geologist. He is the 2008-09 AEG President, and served two years on the AEG board as Washington Section chair and one year on the Governance Committee in addition to his three previous years on the Executive Council.

Message From The Chair

We will have a special guest at this month's meeting, AEG President, Mark Molinari. This is a great opportunity to meet AEG's current leader and to hear directly from him about the current status of the Association and our leadership's vision for the Association. Additionally, Mark will be giving a presentation on the many applications of LiDAR data. I think this is a very timely topic as more and more LiDAR data is becoming available here in Oregon as well as around the country. DOGAMI has formed the Oregon LiDAR Consortium (OLC) to facilitate the strategic acquisition of LiDAR data in Oregon for public use. For more information on LiDAR and an update on the OLC's progress, visit their website at http://www.oregongeology.org/sub/projects/olc/default.htm

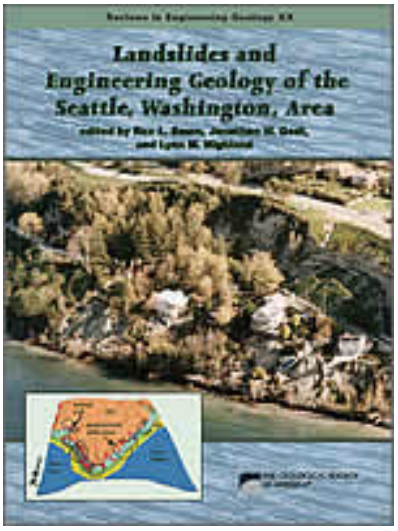
This month's meeting will be back at the tried and true Lucky Lab in NW Portland. Hope to see you there. Happy Holidays!

AEG Oregon Section Chair

Jason Hinkle

THE GEOLOGICAL SOCIETY OF AMERICA

New Publication: Landslides and Engineering Geology of the Seattle, Washington Area



Edited by Rex L. Baum, Jonathan W. Godt, and Lynn M. Highland is a new Reviews in Engineering Geology Volume. This volume brings together case studies and summary papers describing the application of state-of-the-art engineering geologic methods to landslide hazard analysis for the Seattle, Washington, area. An introductory chapter provides a thorough description of the Quaternary and bedrock geology of Seattle. Nine additional chapters review the history of landslide mapping in Seattle, present case studies of individual landslides, describe the results of spatial assessments of landslide hazard, discuss hydrologic controls on landsliding, and outline an early warning system for rainfall-induced landslides.

For more information see: http://www.geosociety.org/pubs/

Job Opportunities

SHN Consulting Engineers & Geologists, Inc. Willits, CA office has an immediate need for a top performing, project-level **Environmental Engineer/Environmental Geologist.** Typical duties include project management, site investigations, feasibility studies, regulatory compliance, development of Phase I and Phase II site assessments, field work including soil and groundwater sampling, drilling activities, groundwater modeling, geospatial analysis, mentoring of staff, client development and marketing, as required. The ideal candidate will have a demonstrated ability to successfully market technical & professional services, strong written and oral communication, organizational, and leadership abilities. Minimum of five (5) years technical and project management experience preferred.

Education/Registrations/Certifications:

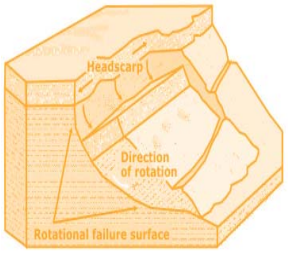
Professional Engineer or Geologist registration (PG)-California preferred; other states considered if able to obtain CA license through comity within 1 year. Bachelor's Degree in Environmental Geology or related degree from an accredited university or college. Working knowledge of the conditions and engineering requirements in the geographic area. Valid Driver's license (CA) by hire date. Must be a U.S. citizen or be authorized to work in the U.S. without sponsorship

SHN is an equal opportunity employer. This position is open until filled. For additional information visit our website www.shn-engr.com. Please submit a cover letter and resume to Taylor Marie Baker, Human Resources Manager, at tbaker@shn-engr.com

Benefits:

SHN Consulting Engineers & Geologists, Inc. offers an excellent compensation and benefits package including medical, dental, vision, insurance; 401(k) plan; AFLAC Section 125 Plan for Dependent Care and Flexible Spending accounts; Life, accident, short and long term disability plans; Flexible work schedules; Learning and development opportunities; Tuition reimbursement; and paid vacations, holidays and sick leave. Relocation reimbursement will be considered.

Salary: This position is salaried, commensurate with experience



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

Karl Terzaghi

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: Bill Burns, OR Section AEG Newsletter Editor, Oregon Department of Geology, 800 NE Oregon Street, Portland, OR 97232, e-mail: <bill.burns@dogami.state.or.us>, phone (971) 673-1555. Electronic media is preferred. Deadline for submittal is Friday three weeks before each meeting. Advertising: business card $100/yr; ¼ page $200/yr; ½ page $350/yr. Please notify Bill if you have a

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.

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

Thanks For Supporting AEG !

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Photos of the Month

The December photos are of the Cueva de los Cristales (Cave of Crystals) which contains the worlds largest known natural crystals. Thanks to the 13,200 gallons of water pumped out of the mine every minute for farming, the pumping operation makes it possible for humans to study the Cave of Crystals. If the pumping is stopped, the caves will again be submerged, and the crystals will start growing again.

National Geographic has a great special running on the Discovery Channel right now about the cave. For more info see http://news.nationalgeographic.com/news

To submit a photo, please email the picture in a JPEG or TIF format to bill.burns@dogami.state.or.us. Also include a short paragraph describing the photo and project.