OREGON SECTION OF THE
ASSOCIATION OF ENVIRONMENTAL &
ENGINEERING GEOLOGISTS

February 2007

Volume 7, Number 6

The Official

OREGON SECTION AEG NEWSLETTER

February Meeting Details

Date: Tuesday, February 20

Location: Old Market Pub

6959 SW Multnomah

Portland, OR

6:00 pm Social

7:00 pm Dinner

8:00 pm Presentation

Dinner: Pizza and Salad

$14 Dinner ($7 Students)

Reservations: mwegner@cornforthconsultants.com with "AEG Reservation" in the subject line or 971-222-2047 by 4pm Thursday February 15th.

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

Upcoming Meetings:

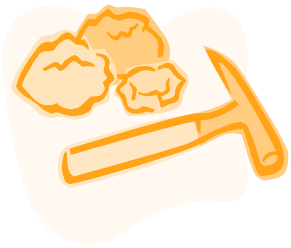
- **3/20/07 John Moylan: TBA**
- **4/17/07 PSU Student Night**
- **5/15/07 Rescheduled Joint AEG-ASCE Meeting**

February Meetings Guest Speaker is Chris Goldfinger from Oregon State University - Presentation: Great Submarine Earthquakes Along the US west coast: The Riddle of the Sands

We are continuing to test correlation methods for a series of offshore cores along the Cascadia subduction margin. We are applying multiple proxies, including XRF analysis, to the determination of hemipelagic thickness between turbidite events. With improved sedimentation rates, and time intervals represented by inter-event sedimentation, we use Bayesian statistical methods to combine and constrain radiocarbon ages. Using OxCal we incorporate limiting ages with known criteria including ash ages, hemipelagic sedimentation rates, and historical data to refine the error ranges for a given event. Multiple ages for the same event are also given "credit" for this, and rather than averaging, iterative Bayesian models are used to reduce the error range for events that are known to correlate, and or have independent constraints. This method significantly reduces 14C variability between along strike events that are thought to correlate.

We also continue to refine inter-site physical property correlation methods in parallel with 14C ages. Depositional patterns within events, recorded as magnetic susceptibility, chemical, and density patterns, match at widely separated sites in surprising detail. 16 individual event density-magnetic signatures between JDF and Cascadia Channel correlate with coefficients of 0.6-0.9, with two scores (0.16 and 0.32) for events with similar, but out of phase characteristics. The character of each event is clearly evident in the cores. For example, T5 is a small doublet at all sites; T6 is a triplet at most sites, T8 is a large triplet at most sites, T17 is a couplet at all sites, T11 is a large flat topped peak at all sites. In some cases, correlation of events hundreds of km apart is almost as robust as the correlation between piston and trigger core pairs only one meter apart. Numerical tests of the correlation patterns strongly support this conclusion. Values for other measures include: the number of sandy pulses per event down core (r=0.84-0.92), relative thickness pattern downcore (r=0.70-0.89), and whether these values could have come from a random sample of a normal distribution (rejected with 99% confidence). Thus, both individual event signatures, and the downcore stratigraphy are both highly unique and strongly comparable from site.

Strengthened correlations, refined 14C ages, and closer correlation with land events support long rupture lengths for at least 16 great earthquakes in the Holocene, extending at least from 42N to 48N. Several partial ruptures are evident, four limited to southern Oregon, one from central Oregon Northward, and one from central Oregon southward. The penultimate event at ~ 1500 AD, is recorded at all offshore sites as a thin turbidite, and only recorded at a few land sites, suggesting a small event.



Message From The Chair

Even rugged geologists need to take a break from the weather every once in a while. The January meeting was cancelled due to snow. Thanks everyone for not showing up and keeping the roads a little safer. The joint meeting with the ASCE Geotechnical Group has been rescheduled for May 15. See you then.

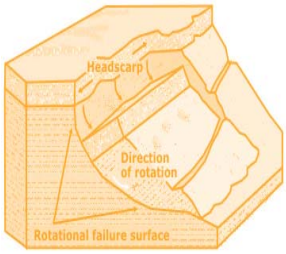
At our next meeting, Chris Goldfinger of OSU will be share some of his recent earthquake research with us. Do not miss this one!

The scientific understanding of earthquake hazards in the Pacific Northwest is steadily growing. The increasing level of awareness among the public is a testament to the efforts of researchers and the agencies that have been disseminating the information. The growing awareness has caused some profound changes to the old idea that big earthquakes don't happen in Oregon. In a recent nod to the magnitude of the risk in the Pacific Northwest, a major insurance company recently dropped all earthquake insurance coverage in the area. They realize that catastrophic losses would be devastating to the bottom line. Many unhappy people are no longer "In good hands".

The AEG Oregon Section is a co-sponsor of the upcoming DOGAMI / USGS / ASCE / AEG Landslide Symposium. The symposium will be held on Thursday, April 26th. Two post symposium field trips will be held: Friday, April 27th in the Portland area and Saturday, April 28th on the Oregon coast. The second planning meeting for the Landslide Symposium will be held on February 7, 2007, from 4-6pm at the Crowne Plaza Hotel in Lake Oswego. There are plenty of ways you can be involved, whether it is giving time to help with planning or providing assistance on the day of the event. Anyone interested in helping with the symposium should try to be at the planning meeting.

The geology program at Southern Oregon University is currently on the chopping block. Comments regarding the removal of this program can be sent to the university president at presidentsoffice@sou.edu before February 15. The president's provisional plan is online at www.sou.edu/president.

Michael Zimmerman, AEG Oregon Section Chair



DOGAMI/USGS/ASCE/AEG Landslide Symposium April 26, 27, & 28, 2007

Save the dates:

April 26, 2007—Landslide Symposium

April 27-28, 2007—Field Trips

AEG will be a sponsor of the upcoming DOGAMI/USGS/ASCE/AEG Landslide Symposium to be held on Thursday April 26th, 2007. Two post symposium field trips will be held: Friday April 27th in the greater Portland area and Saturday April 28th on the Oregon coast. The symposium will discuss new tools and techniques for developing regional hazard maps and future risk management practices. The field trips will highlight some landslides in the Portland area and on the Oregon Coast.

Since AEG will be a sponsor, members are encouraged to attend the symposium planning meetings. The first one was already held about a month ago. The second planning meeting will be held before the next ASCE geotechnical dinner meeting on *February 7, 2007 from 4-6pm at the Crowne Plaza Hotel, Lake Oswego.* The planning team will discuss symposium logistics.

The focus of AEG's support of the symposium is to lead the 2 day field trips. Scott Burns has volunteered to be the lead along with Jason Hinkle and Bill Burns. These field trips will also act as the first AEG lead field trips in a long time, so we are excited to get this portion of AEG back up and running!

The planning meeting will be led by Bill Burns in the area just outside of the bar in the plaza. NO RSVP is needed. Just show up!

Bio: Chris Goldfinger, Associate Professor, OSU

Chris Goldfinger is a marine geologist and geophysicist with a focus on great earthquakes around the world, and the structural geology of the Cascadia margin. He has experience with deep submersibles, sidescan sonar, seismic reflection, and other marine geophysical tools on over 25 oceanographic cruises over the last 10 years. He is currently working on great subduction earthquakes along the Oregon and Washington coasts, beginning work on the Sumatra margin, and working along the Northern San Andreas Fault off San Francisco using the evidence for earthquakes found in deep-sea sediments. Goldfinger is an Associate Professor of Marine Geology and received his PhD from Oregon State University in 1994. He is also the Director of the Active Tectonics and Seafloor Mapping Laboratory in the College of Oceanic and Atmospheric Sciences at Oregon State University. For more information see:

http://www.activetectonics.coas.oregonstate.edu

Oregon Academy of Sciences, February 24, 2007

Below find a listing of the talks for the Oregon Academy of Sciences which is meeting at Western Oregon University in Monmouth February 24, 2007. There will also be a field trip up the Luckiamute River in the afternoon. If anyone is interested in registering, go to www.oas.pdx.edu. Cost is $20 for the day which includes lunch. Field trip is extra (no price at this time - contact Scott Burns at 503-725-3389 for price).

Section Chair: Scott Burns, Portland State University

8:30 FACING A GRAVE ISSUE: ASSESSMENT OF THE MOUNT CALVARY CEMETERY SHOPYARD LANDSLIDE, PORTLAND, OREGON, JANUARY 13, 2006. Adam Reese, Chris Rhea, Brian Block, Scott Burns, Department of Geology, Portland State University, Portland, OR 97201

8:45 MAKING STORMWATER WORK FOR YOU: OWENS CORNING, CITY OF PORTLAND BUREAU OF ENVIRONMENTAL SERVICES, AND FRIENDS OF TREES' INNOVATIVE PARTNERSHIP FOR SUSTAINABILITY. Jennifer Berry, RG, City of Portland, Bureau of Environmental Services, Portland, OR 97204.

9:00 WAS TRICERATOPS LIKE A BISON, RHINO OR HIPPO? Richard Bykowski, Gregory Retallack, Department of Geological Sciences, University of Oregon, Eugene, OR 97403.

9:15 A Digital Landslide Inventory for the Cowlitz County Urban Corridor. Mark Scott, Ocean Park, Washington 98640.

9:30 EARLY CRETACEOUS (APTIAN) ATMOSPHERIC CO_2 SPIKE INFERRED FROM STOMATAL INDEX OF FOSSIL GINKGO LEAVES. Gregory J. Retallack, Department of Geological Sciences, University of Oregon, Eugene, OR 97403.

9:45 PRELIMINARY DATA FROM THE OLIGO-MIOCENE MENAGERIE WILDERNESS FLORA OF THE WESTERN CASCADES. Jeffrey A. Myers, Department of Earth Science, Western Oregon University, Monmouth, Oregon 97361, Robert Rosé, Sweet Home, Oregon.

10:00 GEOMORPHIC ANALYSIS OF THE LUCKIAMUTE WATERSHED, CENTRAL COAST RANGE, OREGON: INTEGRATING APPLIED WATERSHED SCIENCE WITH UNDERGRADUATE RESEARCH AND COMMUNITY OUTREACH. Stephen B. Taylor, Earth and Physical Sciences Department, Western Oregon University, Monmouth, OR 97361.

10:15 PETROLOGY OF ASH-FLOW TUFFS ON THE EAST FLANK OF NEWBERRY VOLCANO, CENTRAL OREGON: FRAMEWORK FOR UNDERSTANDING THE EVOLUTION OF A SILICIC MAGMA SYSTEM. Templeton, Jeffrey H., Dept. of Earth and Physical Sciences, Western Oregon University, Monmouth, OR 97361.

10:30 MOVEMENT OF IRON AND ALUMINUM IN A SERIES OF PALEOSOLS ON A PARABOLIC DUNE AT CAPE KIWANDA, OREGON. Karen R. Carroll, Mary Dietrich, and Scott F. Burns, Department of Geology, Portland State University, Portland, OR 97201.

...Continued on Page 4

GSA Cordilleran Section Meeting, 2007

Deadline for abstracts for the GSA meeting in Bellingham (May 4-6, 2007) will have a large number of engineering geology talks and field trips. Abstracts are due Feb. 6, 2007. Information on the Cordilleran Section meeting and submitting abstracts are found at the website: www.geosociety.org .

Oregon Academy of Sciences, February 24, 2007

...Continued from page 3

Poster Session (10:45-12:30) and refreshments

ALPINE WETLAND SOIL CHARACTERISTICS AND PLANT ECOLOGY. Susan Garland, Department of Environmental Science and Resources, Portland State University, Portland, OR 97207.

Mechanisms and processes of suspended sediment transport and Deposition in High Arctic proglacial Lake Linnévatnet, Svalbard, Norway. Benjamin B. Schupack1, Robert J. Carson1, Michael J. Retelle2, Al Werner3 1Department of Geology, Whitman College, Walla Walla, WA 99362, 2Department of Geology, Bates College, Lewiston, ME 04240, 3Department of Earth and Environment, Mt Holyoke College, South Hadley, MA 01075.

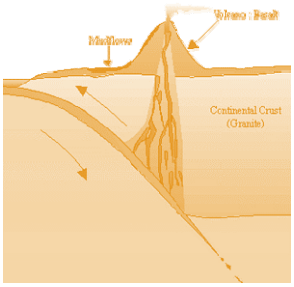
Formational contacts and structural lineations in WESTERN Cascade volcanic rocks of southwestern Oregon: interpretation of remote sensed images. Dana L. Hutchins, Elizabeth M. Carrington, Julie Anne Locke, Dept. of Geology, Southern Oregon University, Ashland, OR 97520.

USE OF LIDAR DATA IN THE CASCADE-SISKIYOU NATIONAL MONUMENT, SOUTHERN OREGON: DETECTION OF SLOPE FAILURES IN VOLCANIC ROCKS. Jad A. D'Allura, Southern Oregon University, Ashland, Oregon 97520.

GLACIATION OF THE DAVAATIIN AREA IN THE HANGAY MOUNTAINS, CENTRAL MONGOLIA. 1Brian D. Coggan, 1Robert J. Carson, 2Karl W. Wegmann; 1Department of Geology, Whitman College, Walla Walla, WA 99362; 2Department of Earth and Environmental Sciences, Lehigh University, Bethlehem, PA 18015.

GEOCHEMICAL, PETROGRAPHIC, AND DEPOSITIONAL OBSERVATIONS IN EARLY TUFFACEOUS DEPOSITS OF THE WESTERN CASCADES GROUP IN SOUTHERN OREGON. Jim Ficke, Toni Smith, and Dr. Jad D'Allura, Southern Oregon University, Ashland, OR 97520.

ASSESSMENT OF RECENT REMEDIATION EFFORTS TO NEUTRALIZE ACID MINE DRAINAGE AT THE BLUE LEDGE MINE, SISKIYOU COUNTY, CALIFORNIA. 1Marco A. Wikstrom, 1Jara A. Johnson, 1William S. Elliott, Jr. 2Peter Jones, 1Department of Geology, Southern Oregon University, Ashland, OR 97520, 2North Medford High School, Medford, OR 97504.



HOLOCENE VEGETATION AND CLIMATE CHANGES IN THE HANGAY MOUNTAINS, CENTRAL MONGOLIA. 1Laurel E. Stratton, 2Karl W. Wegmann, 1Robert J. Carson, 3Scott A. Mensing. 1Department of Geology, Whitman College, Walla Walla, WA 99362, 2Department of Earth and Environmental Sciences, Lehigh University, Bethlehem, PA 18015. 3Department of Geography, University of Nevada, Reno, Reno, NV 89557.

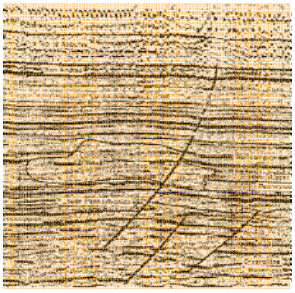
PALEOSEISMIC ANALYSIS OF THE EGIIN DAVAA FAULT, HANGAY MOUNTAINS, MONGOLIA. 1Juliana Williams, 2Emily Parker, 3A. Bayasgalan, 4Karl Wegmann, 1Bob Carson, 5Richard Walker. 1Dept. of Geology, Whitman College, Walla Walla, WA 99362, 2Dept. of Geology, Colorado College, Colorado Springs, CO 80903, 3School of Geology and Petroleum Engineering, Mongolian University of Science and Technology, Ulanbaatar, Mongolia, 4Dept. of Earth and Environmental Sciences, Lehigh University, Bethlehem, PA 18015, 5Dept. of Earth Sciences, Oxford University, Oxford, UK.

ANALYSIS OF THE 2006 WATER YEAR ON THE SOUTH FORK LITTLE BUTTE STREAM, JACKSON COUNTY, OREGON: MICROCLIMATE COMPLEXITIES AND FLASHINESS IN FLOOD STAGE GENERATION. 1Charles L. Lane, 2Debra Whitall, 3Shavon Haynes, 1Department of Geology, Southern Oregon University, Ashland, OR 97520, 2United States Department of Agriculture Forest Service, Washington, D.C. 2004-1158, 3Office of the Jackson County Watermaster, Medford, OR 97501.

2:45-5:00 Field Trip

ENVIRONMENTAL STUDIES IN THE LUCKIAMUTE WATERSHED, CENTRAL COAST RANGE, OREGON: INTEGRATING APPLIED WATERSHED SCIENCE WITH UNDERGRADUATE RESEARCH AND COMMUNITY OUTREACH. 1Stephen B. Taylor, 2Bryan E. Dutton, 1,2Katherine Noll, and 3Michael Cairns, 1Earth and Physical Sciences Department, Western Oregon University, Monmouth, OR 97361,

2Department of Biology, Western Oregon University, Monmouth, OR 97361, 3Luckiamute Watershed Council, c/o Western Oregon University, Monmouth, OR 97361.



Mountainous watersheds are important settings for ecological interactions, human occupation, and water resource development. They also represent components for mass sediment transfer from continental to ocean basins. As such, the understanding of hydrogeomorphic variables is critical for designing sustainable water resources and habitat conservation plans. Watersheds represent the ideal natural laboratory for student application of quantitative techniques to multivariate systems with interdependent process-response mechanisms. The field trip involves a 2.5-hour road tour of the Luckiamute River basin in the central Oregon Coast Range (Figure 1). The Luckiamute is in close proximity to the Western Oregon University (WOU) campus and is being used as a model watershed to integrate select components of applied research into a sequence of surface-process courses at WOU. Faculty and undergraduates are actively engaged with long-term studies in fluvial geomorphology, environmental geology, conservation biology, and hydrology. This watershed-based curriculum: (1) incorporates research into the undergraduate science program at WOU, (2) engages students in socially-relevant watershed-based science, (3) improves quantitative skills via coursework, lab exercises and applied research, (4) develops problem-solving and scientific skills within a regional watershed setting, and (5) fosters an interconnected perspective of watershed processes across disciplines. The research model is placed in the context of community outreach via collaboration with the local watershed council. The field trip will provide an overview of the geology and geomorphology of the central Coast Range watershed region and present a summary of long-term research and community service initiatives in the Luckiamute basin.

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

Karl Terzaghi

OSBGE & OSBEELS Meeting on Wednesday, February 7, 2007

The Joint Compliance Committee (JCC) of the Oregon State Board of Geologist Examiners (OSBGE) and the Oregon State Board of Examiners for Engineering and Land Surveying (OSBEELS) plan to meet. The JCC will convene on Wednesday, February 7, 2007, at 8:00 AM in Salem, Oregon, in the Conference Room of the offices of OSBEELS at the following address: 670 Hawthorne Avenue SE, Suite 220, Salem, OR 97301, 503.362.2666. During the meeting, the committee will discuss complaints against geologists for practicing engineering; complaints against engineers for practicing geology, and complaints against non-registered individuals practicing in the overlap practice area.

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 $10/mo, $100/yr; ¼ page $30/mo, $200/yr; ½ page $35/mo, $350/yr. Please notify Bill 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.

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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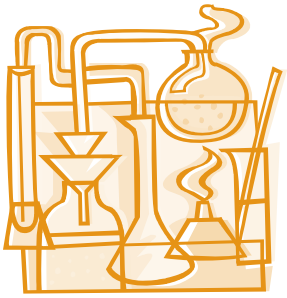

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Photos of the Month

February's photo of the month is Drew Harvey from PBS Engineering and Environmental. On a recent vacation trip to the Heraklion (Crete), Greece, Drew walked passed this crew working on improving the foundation support for the cathedral. They were doing the geotechnical drilling at the time and it looked like they needed a little help with the hoses ! Drew is also the Continuing Education Liaison for the Oregon Section of AEG. For more on Drew and PBS take a look at there website at http://www.pbsenv.com/.

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.