



# NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology  
Please browse [www.nwgs.org](http://www.nwgs.org) for more about us

## November, 2016 Newsletter

Volume 30, Number 7

### November 8 Program Speaker (joint meeting with the Association of Women Geoscientists)

**Speaker:** Alison Duval, Earth & Space Sciences, U. of Wash.

**Title:** Cascadia subduction zone earthquakes and landslides:  
How will the hillslopes handle the big one?

**Abstract:** The last decade has provided unexpected lessons in the enormous risks from great subduction earthquakes: Sumatra 2004, Chile 2010, and Japan 2011 were each devastating, resulting in surprising impacts distinct from shallow seismic events. Similar large-magnitude earthquakes are known to occur on the Cascadia subduction zone (CSZ), with the potential of rupturing the entire 1100 km length of the Pacific Northwest plate boundary. Coseismic landslides represent one of the greatest risks to the millions of people living along the Cascadia Subduction Zone, from northern California to southern British Columbia. Empirically derived relationships between earthquake magnitude and landsliding are well studied, and suggest a magnitude 9 earthquake is likely to trigger thousands of landslides. Because a magnitude 9 subduction earthquake is well known to have occurred just over 300 years ago, evidence of coseismic landslides triggered by this event should still be present in the landscapes of the Washington and Oregon Coasts. We are systematically hunting for these landslides through field and LiDAR mapping and are using a combination of radiocarbon dating and surface roughness analysis, a method first developed to study landslides near to the Oso 2014 disaster site, to develop more robust regional landslide chronologies. In addition, we compare our results to new probabilistic quantification of ground motions from a M9 earthquake, including uncertainties, which is a novel approach to delivering synthetic seismograms for engineering and other purposes. With these new data, we hope to better characterize how the landscape will respond to the next large subduction zone earthquake in the Pacific Northwest.

5:30pm: No-host social hour

6:30pm: Buffet dinner

7:30pm: Speaker program

All are welcome to attend –  
reservations are required  
if coming for dinner.

► [Reservations here](#)



**PROGRAM DINNER RESERVATIONS:** NWGS members: **\$40**; Non-members: **\$45**; Full-time students : **\$20**. Add \$5 for LATE REGISTRATION. Make your reservation and payment on-line at [www.nwgs.org](http://www.nwgs.org) (or mail your payment to *Northwest Geological Society, 4616 25th Ave NE #397, Seattle, WA. 98105* (must be received by Thursday prior to meeting)). Contact Secretary [Beth Tanner](#) with questions about dinner reservations.

*If attending the speaker program only, a \$5 voluntary donation to help defray the meeting room cost is requested.*

**Location:** Pacific Dining Hall at the [Talaris Conference Center](#), 4000 NE 41st St., Seattle, WA., 98105. **Directions:** See [on-line directions with map](#), or: from I-5 northbound or southbound in Seattle, take Exit 168B (NE 45th St.). Drive east on NE 45th St. past UW down the hill and past University Village. Turn south (right) onto Mary Gates Memorial Drive at the 5-way intersection. MGM Drive will curve east (left) and become NE 41st St. Continue several blocks to the [Talaris Conference Center](#) entrance on the north (left) side. We meet in the Pacific Dining room on the left (**SEE MAP ON P. 3**).

### Upcoming Speakers and Field Trips

**December 13:** David Williams, freelance writer, Geological and Geomorphic Controls on the Historical Development of Seattle.

**January 10:** TBA.

**February 14:** TBA.

**March 14:** TBA.

**April 11:** TBA.

If you would like to volunteer to give a talk or lead a field trip for NWGS, please contact President [Jim Miller](#).

Please see the [NWGS website](#) for detailed announcements.

Contact webmaster [Julie Masura](#) if you have any announcements to post on the website.



## Announcements

- Sadly, long-time member **Lars Gilmor** passed away unexpectedly on Oct. 1. **Please see his memorial on page 3.**
- Due to the storms of the Oct. 14-16 weekend, **Eric Cheney's field trip, *Geology of the Republic Area and the Okanogan Metamorphic Core Complex*** has been postponed until next spring.
- The **2018 NWGS Symposium** will be in early May, 2018. It will likely be 2 days, with technical sessions the first day and public presentations the second day, plus a one-day field trip either before or after. The USGS and AEG are considering involvement. Please consider volunteering for a position on the organizing committee. Contact President **Jim Miller**.
- If you have an unusual rock, please bring it to show!

*YOU would like to be involved!*

## Photo Spotlight



Photo of UW student Sean LaHusen pointing at a log in the Rowan landslide near Oso, Wash in 2015. Photo by A. Duvall.

## About NWGS

**NWGS**, a regional association of professionals, students & other persons interested in **geology**, provides a forum for the presentation and discussion of a wide range of geological topics, emphasizing those of the Pacific Northwest of fundamental scientific interest.

*YOU would like to be involved!*

**Program meetings:** 2<sup>nd</sup> Tuesdays, October through May in the Pacific Dining Hall at the **Talaris Conference Center** in Seattle (see 1<sup>st</sup> page). Anyone may attend the speaker program, but a reservation is necessary for those wanting dinner (see 1<sup>st</sup> page). **Field trips (members only):** one in late spring/early summer and one in late summer/early fall, usually of 1-3 days in length. **Membership** is open to anybody with a professional or amateur interest in geology. **Annual dues:** Professional: \$30; Student: \$5. **To join or pay annual dues:** send a check payable to NWGS to Secretary **Beth Tanner**, 4616 25th Ave NE #397, Seattle, WA. 98105. Please include your name, address, home phone, email, and employer/affiliation (if any). Professional dues may now also be paid at [www.nwgs.org](http://www.nwgs.org).

*YOU would like to be involved!*

## Recommended Readings

*On this month's topic:*

Allstadt, Kate, Vidale, J.E., and Frankel, A.D., 2013, A Scenario Study of Seismically Induced Landsliding in Seattle Using Broadband Synthetic Seismograms, Bull. Seismological Soc. of America, Vol. 103, No. 6, doi: 10.1785/0120130051.  
LaHusen, S.R., Duvall, A.R., Booth, A.M., and Montgomery, D.R., 2016, Surface roughness dating of long-runout landslides near Oso, Washington (USA), reveals persistent postglacial hillslope instability, Geology, Vol. 44, No. 2, pp. 111-114, doi: 10.1130/G37267.1.

*Other significant literature:*

Cheney, E.S. (Editor), 2015, Geology of Washington and Beyond: From Laurentia to Cascadia, University of Washington Press, Seattle, 350 p.

Please send your reading recommendations to Newsletter Editor **Tom Bush**.

To report a change of email or postal address or request to be removed from mailings, notify Membership Chair **George Bennett**. Questions or comments? Contact President **Jim Miller**.

## NWGS Board

President **Jim Miller**  
GeoEngineers

President Elect **Scott Calhoun**  
Independent

Past President **Grace Winer**  
Lindblad/Nat. Geog.

Secretary **Beth Tanner**  
Windermere Real Estate

Treasurer **George Bennett**  
Bennett Consulting

At-Large Board Members **Katie Brower**  
Student, Everett C.C.  
2nd Position Open

## Other Personnel

Membership Chair **George Bennett**  
Bennett Consulting

Field Trip Coordinator **Kathleen Goodman**, AMEC

Newsletter Editor & Publications **Tom Bush**  
Pierce College  
Puyallup

Poster Chair **Maura O'Brien**  
Wa. Dept. of Ecology

Webmaster **Julie Masura**  
Univ. of Washington

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Highline CC



## HOW TO FIND THE NWGS MEETING SITE IN THE PACIFIC BUILDING AT THE TALARIS CONFERENCE CENTER



### In Memory of Mr. Lars Gilmour November 2, 1956–October 1, 2016



Photo of Lars from his LinkedIn Page.

Long time NWGS member and friend Lars Gilmour unexpectedly passed away at his home on October 1 at the age of 59. Lars contributed to NWGS in many ways, including serving as the Organizing Committee Chairperson for the Second NWGS Symposium (2013), an At-Large Board Member for five years (2011–2015), and the Poster Coordinator for at least two years (2009–2010).

Lars was born in Bitburg, Germany. He earned his Bachelor of Sciences in Earth and Space Sciences, Geology option and Masters Degree in Geological Sciences, both from the University of Washington. He taught geology courses at Shoreline and South Seattle Community Colleges, and the University of Washington.

Member Grace Winer commented about Lars in a recent email, “I can still see Lars striding into our winter meetings in a scarf and dapper overcoat. He had quite a commanding presence.”

A celebration of Lars’ life will be held soon, and donations can be made in his honor to the Geology Department at Shoreline Community College.

Lars’ presence at our gatherings and contributions to



and presence at our gatherings and contributions to NWGS will be missed.



*Photo submitted by Grace Winer from the Seattle Times.*