

# 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



## January, 2017 Newsletter

Volume 31, Number 1



### January 10 Program Speaker

**Speaker:** Dr. Jackie Caplan-Auerbach, Western Washington University, Geology Dept.

**Title:** The Dynamics of Submarine Eruptions, From Hydro-acoustic Data

**Abstract:** Although most of the world's volcanic productivity occurs on the seafloor, only a handful of submarine eruptions have ever been recorded instrumentally, and fewer still have been observed while erupting. However, the sounds generated by undersea volcanoes can be easily recorded on hydrophones, and these signals provide important insight into the dynamics of these eruptions. This presentation will focus on the sounds generated by three erupting volcanoes: NW Rota-1 in the Marianas arc, West Mata volcano in the Tonga arc, and Axial seamount, on the Juan de Fuca ridge offshore Oregon. The data presented here suggest that submarine volcanoes may be more explosive than has previously been appreciated.

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

**February 14:** Monika Kress, San Jose State Univ. Dept. of Physics & Astronomy, The Science of Meteorites.

**March 14:** Keith Norlan, Armchair Geology of Zion, Bryce & Grand Canyon National Parks

**April 11:** TBA.

**May 9:** Eric Cheney, UW ESS, The Geology of the Republic area and the Okanogan Metamorphic Core Complex.

**Spring Field Trip:** Eric Cheney, UW ESS, Geology of Republic Area, May 19-21, 2017.

**Fall Field Trip:** 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

- The **2018 NWGS Symposium** will be in early May, 2018. It will 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](#).
- [Tom Bush's Spring Break field trip to Utah](#) for Pierce College, which is open to anybody, still has a couple openings. If interested, see <http://www.pierce.ctc.edu/staff/tbush/sanrafael/info17.htm> or contact [Tom Bush](#).
- If you have an **unusual rock**, please bring it to show!
- Next **Board of Directors meeting**: TBA.  
*YOU would like to be involved!*

## Photo Spotlight



Explosive activity observed at West Mata volcano, Lau Basin, during its 2009-2010 eruption. This eruption is one of several that have been recorded by underwater microphones, and the signals from these events provide insight into eruption dynamics. Photo courtesy NOAA and NSF.

## 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 geologic 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: \$40; 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

- Caplan-Auerbach, J., R. P. Dziak, J. Haxel, D. R. Bohnenstiehl, and C. Garcia, in press, Explosive processes during the 2015 eruption of Axial submarine volcano, as recorded by seafloor hydrophones, *Geochem. Geophys. Geosyst.*
- Dziak, R. P., D.R. Bohnenstiehl, D. R., Embley, R. W., Merle, S. G., Matsumoto, H., Walker, S. L., **Caplan-Auerbach, J.**, Lau, T.-K., Lupton, J. E. and Chadwick, W. W., 2014, Long-term explosive degassing, debris flows and volatile release at West Mata submarine volcano, *Geophys. Res. Lett.*, 42, 10.1002/2014GL062603.
- Wilcock, W.S.D., M. Tolstoy, F. Waldhauser, C. Garcia, Y. J. Tan, D. R. Bohnenstiehl, J. **Caplan-Auerbach**, R. P. Dziak, A. F. Arnulf, and M. Mann, 2016, The 2015 Eruption of Axial Seamount: Seismic Constraints on Caldera Dynamic, *Science*, 354 (6318), pp. 1395-1399, DOI: 10.1126/science.aah5563.

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](#).

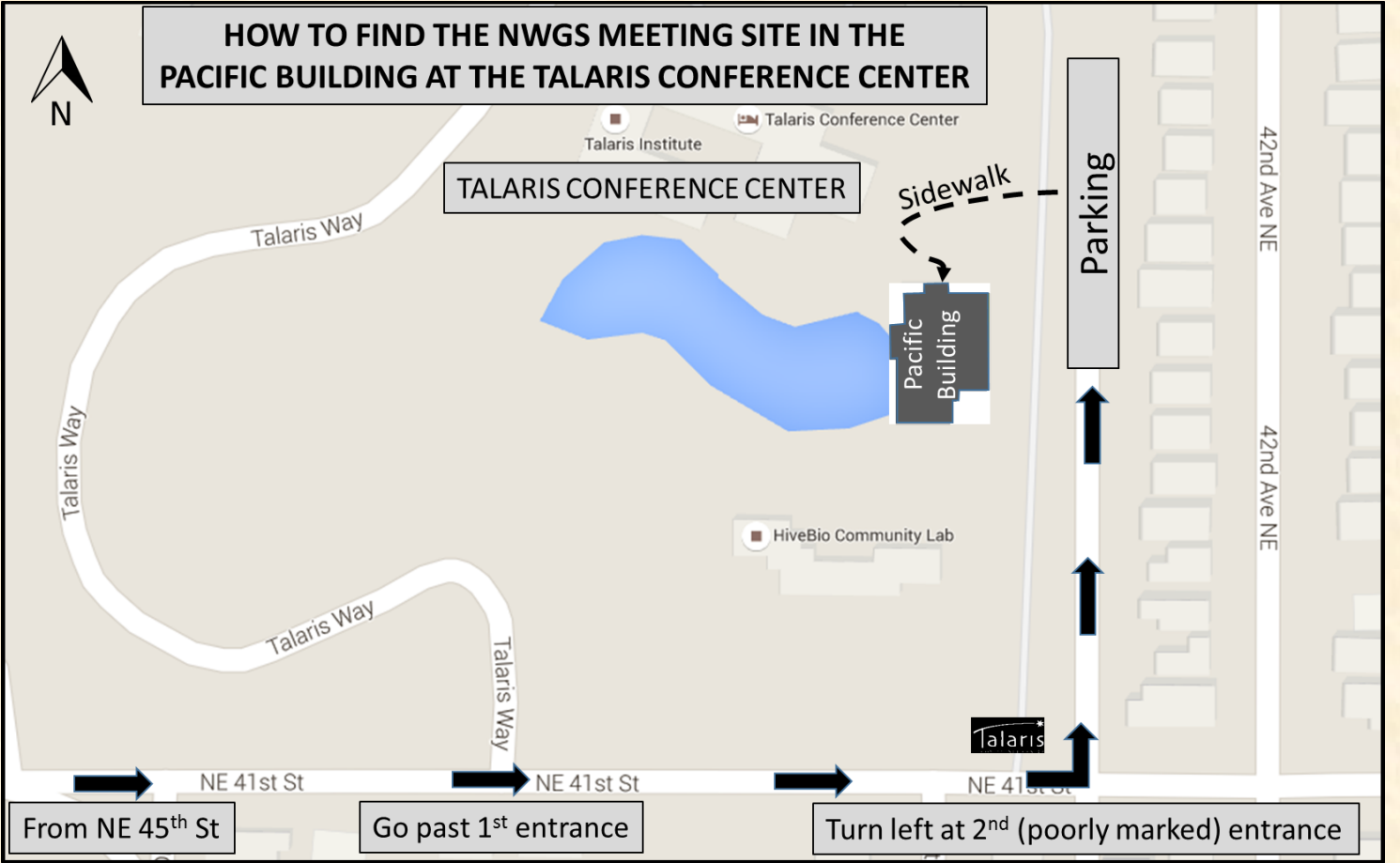
## NWGS Board

|                        |  |
|------------------------|--|
| President              | <a href="#">Scott Calhoun</a><br>Independent   |
| President Elect        | <a href="#">Eric Cheney</a><br>UW ESS Emeritus   |
| Past President         | <a href="#">Jim Miller</a><br>GeoEngineers   |
| Secretary              | <a href="#">Beth Tanner</a><br>Windermere Real Estate  |
| Treasurer              | <a href="#">George Bennett</a><br>Bennett Consulting   |
| At-Large Board Members | <a href="#">Katie Brower</a><br>Student, Everett C.C.<br><a href="#">John LaManna</a><br>LaManna Geosciences |

## Other Personnel

|                                  |  |
|----------------------------------|--|
| Membership Chair                 | <a href="#">George Bennett</a><br>Bennett Consulting   |
| Field Trip Coordinator           | <a href="#">Kathleen Goodman</a> , AMEC                |
| Newsletter Editor & Publications | <a href="#">Tom Bush</a><br>Pierce College<br>Puyallup |
| Poster Chair                     | <a href="#">Maura O'Brien</a><br>Wa. Dept. of Ecology  |
| Webmaster                        | <a href="#">Julie Masura</a><br>Univ. of Washington    |
| Facebook PageMASTER              | <a href="#">Eric Baer</a><br>Highline CC               |

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



From NE 45<sup>th</sup> St

Go past 1<sup>st</sup> entrance

Turn left at 2<sup>nd</sup> (poorly marked) entrance