

# 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



## March, 2019 Newsletter

Volume 33, Number 3



### March 12 Program Speaker

**Speaker:** Elizabeth Schermer, Western Washington University

**Title:** Paleoseismic Trenching and Active Tectonics of the Northern Olympic Peninsula

**Abstract:** Active faulting in the northern Olympic Peninsula of Washington reflects North-South shortening and dextral transpression of the forearc of the Cascadia subduction zone. The Sadie Creek fault (SCF), a recently discovered splay of the Lake Creek - Boundary Creek fault (LCBCF), extends for ~15 km WNW from the northwest shore of Lake Crescent, immediately south of the Strait of Juan de Fuca. The surface trace of the SCF, identified and mapped using airborne lidar, reveals abundant geomorphic offsets suggesting a history of repeated post-glacial earthquake surface ruptures dominated by right-lateral displacement along a steeply dipping fault zone. Mapping and preliminary dating of offset deposits suggests a slip rate of 1-2 mm/yr on the SCF since deglaciation at ~14 ka. We excavated two trenches across the SCF to investigate the timing and extent of surface ruptures and to assess their relationship to earthquakes identified by previous work on the adjacent LCBCF. I will present evidence for 3-5 surface ruptures along the SCF since retreat of the Juan de Fuca lobe of the Cordilleran ice sheet. The ages of the earthquakes on the Sadie Creek fault will be compared to Holocene records in nearby Lake Crescent and the LCBCF to the east. The geometry, kinematics, and slip rate of the LCBC-SCF system can be used to better understand the evolution of the Olympic peninsula and the Juan de Fuca-North America plate boundary.

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 (see map p. 3):** 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).

### Upcoming Speakers and Field Trips

**March 12:** Liz Schermer, WWU, Paleoseismic Trenching/Active Tectonics Near Port Angeles

**April 9:** Wayne Ranney, Carving of the Grand Canyon

**May 7 (not the 14th):** Student poster competition with awards in lieu of a speaker

**Spring Field Trip:** possible one-day field trip to the Twin Sisters Dunite Quarry (date TBA). See Announcements for more details.

**Fall Field Trip:** Jim O'Connor (April, 2017 speaker), USGS, will lead a Channeled Scablands trip, Oct. 4-6, 2019. If you would like to volunteer to give a talk or lead a field trip for NWGS, please contact President [Heather Vic](#).

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

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



## Announcements

- The **Student Poster Competition** will be at the **May 7** meeting (not May 14). If you have entered the competition, contact Poster Chair [Maura O'Brien](#) if you have questions.
- We are working on the **spring field trip** to the **Twin Sisters Dunite Quarry** in Whatcom County southeast of Bellingham, one of the largest olivine deposits in the northwest. The Twin Sisters dunite is one of many accreted terranes in the North Cascades. Stay tuned for details.
- The June 27-July 7, 2019 **Italy/Slovenia trip** is full but if you are registered, final payment of the balance is due by April 1. Please send payments please to [Kathleen Goodman](#).
- No Board of Directors meeting in March.

*YOU would like to be involved!*

## Photo Spotlight



Faults exposed in a trench along the Sadie Creek fault zone, facing northwest.

## 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: \$42; 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

Leithold, E.L., Wegmann, K.W., Bohnenstiel, D.W.R., Pollen, A.F., and Joyner, C.N., 2016, Megaturbidites in Lake Crescent, Washington—Sedimentary record of repeated catastrophic events triggered by surface rupture of the Lake Creek-Boundary Creek fault, Geol. Soc. Am. Abstr. Progr., v. 48, [doi: 10.1130/abs/2016AM-284877](https://doi.org/10.1130/abs/2016AM-284877).

Nelson, A.R., Personius, S.F., Wells, R.E., Schermer, E.R., Bradley, L.-A., Buck, J., and Reitman, N., 2017, Holocene Earthquakes of Magnitude 7 during Westward Escape of the Olympic Mountains, Washington: Bulletin of the Seismological Society of America, v. 107, p. 2394-2415, [doi:10.1785/0120160323](https://doi.org/10.1785/0120160323).

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 [Tom Colligan](#).

## NWGS Board

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## Other Personnel

Membership Chair [George Bennett](#)  
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Field Trip Coordinator [Kathleen Goodman](#), AMEC

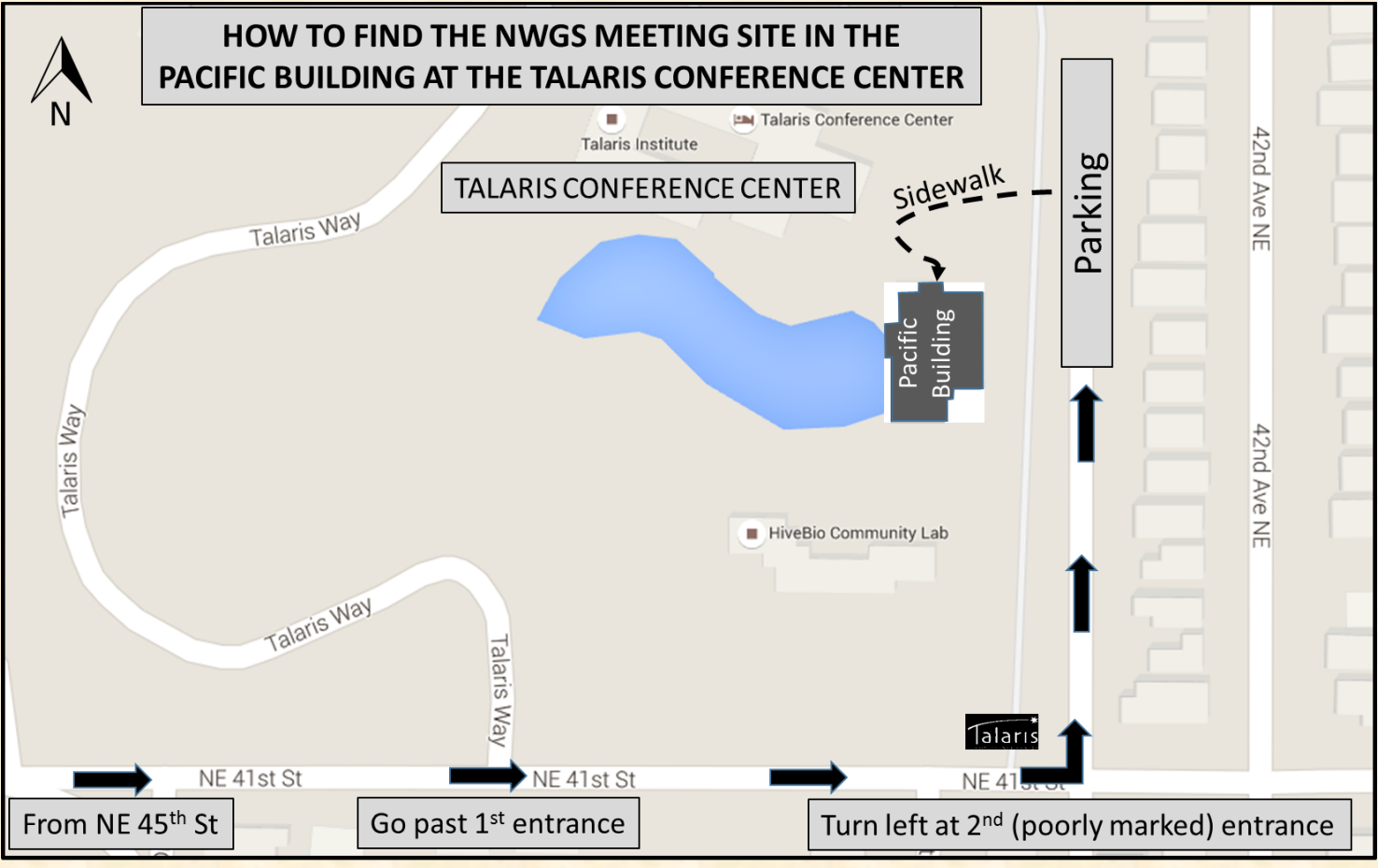
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Highline CC

# 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