



NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology
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May 2015 Newsletter

Volume 29, Number 5



May 12 Program Speaker

Speaker: Tim Melbourne, Department of Geological Sciences, Central Washington University

Title: The Brave New World of Real-time GPS

Abstract: Real-time measurements from increasingly dense Global Navigational Satellite Systems (GNSS) networks located throughout the western US offer a substantial, albeit largely untapped, contribution towards the mitigation of seismic and other natural hazards. Analyzed continuously in real-time, currently over 600 instruments blanket the San Andreas and Cascadia fault systems of the North American plate boundary and can provide on-the-fly characterization of transient ground displacements highly complementary to traditional seismic strong-motion monitoring. We provide an overview of existing networks, their rapidly evolving analyses, the current strengths and limitations of GNSS seismic monitoring for hazards mitigation, and describe the implementation of one of many potential GNSS-based seismic monitoring products.

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 (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.

Upcoming Speakers and Field Trips

Fall Field Trip: Jim Aldrich, Deformation and Tectonism of the Olympic Mountains, October 2-4. See *Announcements* below for more details.

Spring, 2016 Field Trip: Chris Darmon, Down to Earth, will lead a field trip on the geology of Scotland, June 21–July 1, 2016. See *Announcements* below for more details.

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

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

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

Announcements

- **Jim Aldrich** will lead the fall field trip, *Deformation and Tectonics of the Olympic Mountains*, October 2-4. Visit the amazing geology of the Pacific Coast and Hurricane Ridge! Watch your email for an announcement this summer.
- The list of interested participants for the **Geology of Scotland** field trip on June 21–July 1, 2016 is FULL, but contact [Kathleen Goodman](#) to be added to the waiting list. Trip cost will be ~\$3,000 plus airfare (\$400 down payment due June 30, 2105). **Spots may open up when payment time arrives!!!** If you are on the list, watch for details about making a down payment soon.
- Please visit the [Washington Geology Library](#) website to check out their amazing collection of geologic materials, or contact Librarian [Stephanie Earls!](#)
- Next Board Meeting: no meeting this month.

YOU would like to be involved!

Photo Spotlight



Dr. Timothy Melbourne of the Department of Geological Sciences at Central Washington University at a Global Navigation Satellite Systems (GNSS) station. These stations form a network throughout the western U.S. and can be monitored in real time. Photo from [Timothy Melbourne](#).

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: 2nd Tuesdays, October through May in the Pacific Dining Hall at the [Talaris Conference Center](#) in Seattle (see 1st page). Anyone may attend the speaker program, but a reservation is necessary for those wanting dinner (see 1st 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.

YOU would like to be involved!

Recommended Readings

Popovici, R., Andonie, R., Szeliga, W. M., Melbourne, T. I., and Scrivner, C. W., 2015, [Real-time Monitoring of Tectonic Displacements in the Pacific Northwest Through an Array of GPS Receivers](#), International Journal of Computers Communications & Control, Vol. 10, no. 1, pp. 78-88.

Popovici, R., Andonie, R., Szeliga, W. M., Melbourne, T. I., and Scrivner, C. W., 2014, [Clustering and Visualization of Geodetic Array Data Streams Using Self-Organizing Maps](#), Computational Intelligence for Multimedia, Signal and Vision Processing (CIMSIVP) 2014 IEEE Symposium on December 9-12, DOI: 10.1109/CIMSIVP.2014.7013290.

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 [Grace Winer](#).

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