

NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology
Please browse www.nwgs.org for more about us

May, 2024 Newsletter

Volume 38, Number 5

May 7 Program Speaker (note that this month's meeting is on the first Tuesday in order to not conflict with GSA)

5:30pm: No-host social hour; 6:30pm: Dinner
7:30pm: Speaker program ([reservations here](#), see below for details)

Speaker: Will Hoover, UW Post Doc

Title: Earthquakes and baby powder: How chemical reactions influence Cascadia slow slip.

Abstract: Episodic tremor and slow slip (ETS) occurs prior to some devastating megathrust earthquakes and is a fundamental component of the earthquake cycle in the Cascadia subduction zone. ETS involves recurring deformation at rates between instantaneous earthquake slip and slow plate movement, however the processes and rocks that produce this phenomena remain controversial. Geophysical observations place ETS at the interface between the overriding and downgoing plates where we know water and chemical reactions are abundant. These reactions can produce the mineral talc, which is very weak and has been proposed as a host of ETS. However, we cannot determine the influence of talc in modern subduction zones with the current resolution of geophysical methods, but instead must use exhumed paleosubduction terranes where these rocks are brought to the surface and can be studied in detail. The Catalina Schist (Pimu'nga/Santa Catalina Island, California) is such an exhumed terrane containing paleo-plate interfaces of talc-rich rock. These talc-rich rocks formed by chemical reactions between sediments in the downgoing slab and mantle material in the overriding plate, a juxtaposition expected in modern subduction zones. These reactions occurred simultaneously with deformation at the depths and temperatures of ETS in Cascadia and where the Juan de Fuca slab and North American mantle meet. Deformed minerals in these talc-rich rocks suggest they deformed intermittently and at greater velocities than neighboring rocks, consistent with expected patterns for ETS. These results suggest that talc produced by chemical reactions in the Cascadia subduction zone likely hosts ETS and influences the potential for future megathrust earthquakes, and future studies of the earthquake cycle must consider the effect of chemical reactions to realistically reproduce natural systems.

IN-PERSON PROGRAM DINNER RESERVATIONS!

Cost: NWGS member dinner: \$40; Non-member dinner: \$50; Student dinner: \$10; Talk-only: \$10;
Student talk-only: free

To register for attending in-person: please [make your reservation here \(nwgs.org/meeting-registration/\)](http://nwgs.org/meeting-registration/) by the Thursday prior to the meeting.

Catered menu: Queso blanco with tortilla chips and salsa rojas; street taco bar; carne asada; chicken; vegan enchiladas; fajita veggies; esquites; rice; refried beans; onions, cilantro, limes, salsa roja, salsa verde, Tapatio corn tortillas.

Location: Fautleroy YMCA next to the Fautleroy UCC Church, West Seattle, 9140 California Ave SW, Seattle, WA. 98136. Use the parking lot on the [north side of the building](#). Get [Google Maps driving directions here](#).

Cost: NWGS member dinner: \$40; Non-member dinner: \$50; Student dinner: \$10; Talk-only: \$10;

Upcoming Speakers and Field Trips

Spring Field Trip: Tom Doe, Issaquah Highlands/Cougar Mtn (date TBD in May or June).

Fall Field Trip: TBD.

October 8: TBD.

November 12: TBD.

December 10: TBD.

January 14. TBD.

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

Please see the [NWGS website](#) for detailed announcements.
Contact webmaster [Matthew Porter](#) if you have any announcements to post on the website.

Announcements

- Note that the **May meeting will be on May 7**, the first Tuesday, so as to not conflict with the GSA Cordilleran Sectional meeting in Spokane.
- **Eric Cheney** was honored at the April meeting with the newly-created *Eric Cheney Service Award*. See page 2 for details.
- **David Boyer** was approved by unanimous vote at the April 16 Board meeting as the next NWGS President Elect. Thanks, David, and congratulations!
- Please notice below that there is still one open Board of Directors position. Please contact President Elect [Maria Parente](#) or any Board member for more information.
- There are some other exciting **field trip** options on the horizon! These include possible trips to the **Jurassic coast of England** (Fall, 2024), and Wales to be led by Chris Darmon (Fall, 2025?).
- We are currently working on filling in the talk and field trip schedules for 2024. Please let [Maria Parente](#) know if you would like to volunteer or have any suggestions.
- **Next Board of Directors meeting:** October 15 (tentative), 6:00 pm. Members are welcome to attend. Please email nwgs.secretary.com for the Zoom link.

Photo Spotlight

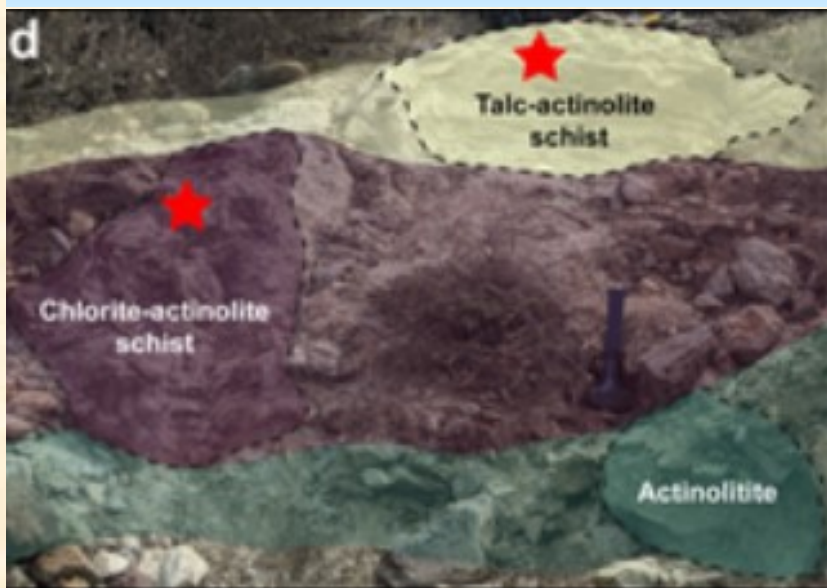


Photo of the sampled outcrop showing outcrop (dashed lines) and inferred structural relationships of metasomatic lithologies (hammer for scale). Photo from Hoover, et al., 2022 (full citation in Recommended Readings below).

About NWGS

The [Northwest Geological Society](#) is a non-profit educational organization which provides a forum for information and discussion on Northwest geology and related topics. The Society sponsors talks by leading academic and professional geologists at its monthly meetings, conducts field trips to locales of regional geologic interest, and publishes meeting summaries and field guides based on those activities. Membership is open to anyone interested in regional geoscience issues.

Program meetings are the 2nd Tuesdays, October through May. We are trying a new in-person venue this month at the [Fauntleroy YMCA in West Seattle, 9140 California Ave SW, WA, 98136](#). Reservations are required to attend in-person (Member dinner: \$40; Non-member dinner: \$50; Student dinner: \$10; Talk-only: \$10; Student talk-only: free).

Field trips (members only): The Society sponsors two overnight field trips each year, one in the fall and one in the spring, to locales of regional geologic interest.

Membership is open to anybody with an interest in geology. **Annual dues:** Professional: \$55; Student: \$10. **To join or pay annual dues:** go to the [NWGS website](#), or visit our website for more details. We look forward to seeing you soon!

Recommended Readings

Hoover, W.F., Condit, C.B., Lindquist, P.C., Moser, A.C, Guevara, V.E., 2022, Episodic Slow Slip Hosted by Talc-Bearing Metasomatic Rocks: High Strain Rates and Stress Amplification in a Chemically Reacting Shear Zone, *Geophysical Research Letters*, Vol. 29, Issue 21, doi.org/10.1029/2022GL101083.

Tepper, J.H., and Clark, K.P., 2024, Initiation of the Cascade arc, *Geology*, Vol. 52, No. 4, pp. 297-301. DOI <https://doi.org/10.1130/G51888.1>.

Please send your reading recommendations to Newsletter Editor [Tom Bush](#).

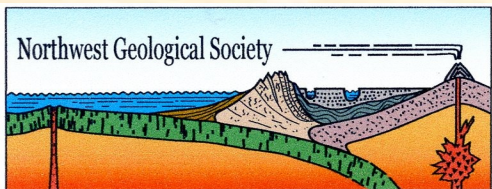
To update your account information,, go to [NWGS.org/membership](https://nwgs.org/membership).
Questions or comments? Contact President [Francois Lalague](#).

Board of Directors

President	Maria Parente Pierce County Library
President Elect	David Boyer (Affiliation pending)
Past President	Francois Lalague Pacific Lutheran Univ.
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Eric Cheney is Honored with the First *Eric Cheney Service Award*

At the April 9, 2024 Northwest Geological Society gathering at the Faunterloy YMCA hall in West Seattle, **Eric Cheney** was honored with the newly-created **Eric Cheney Service Award** given in recognition of his immeasurable contributions to NWGS over nearly seven decades.

Eric, along with our esteemed colleague, the late Donn Charnley, was instrumental in resurrecting NWGS in 1987 after a fifteen-year hiatus. He served as NWGS President that year, and held a position on the NWGS Board for many years. Eric was also instrumental in organizing two NWGS Symposiums in 2007 and 2013. His field guides are available for members in good standing on the NWGS website.

According to the official NWGS history records, Eric has given and led a combined thirty talks and field trips for the Society. Field trip locations included the structurally complex northeastern Washington accreted terranes, and central Cascades Cenozoic unconformity-bounded sequences, where he has conducted extensive field work and geologic mapping.

Throughout his career, Eric has been a model of sound geologic field principles and logic, setting the example for his students and colleagues alike. He is known for challenging long-standing geologic dogma such as the idea that the Columbia River Basalt flows ponded against the eastern flank of the Cascade Mountains, proposing instead that the CRBs are older than the Cascades. One of his long-standing mantras of field mapping has been “faults are crutches of geo-scoundrels!”

Eric spent the vast majority of his career as a faculty member of the Earth and Space Sciences Department at the University of Washington. He currently holds the position of Emeritus Professor.

The *Eric Cheney Service Award* will be awarded to members from here forward that have made significant contributions to NWGS.

