NISQUALLY CHAPTER OF THE
ASSOCIATION OF ENVIRONMENTAL &
ENGINEERING GEOLOGISTS

The Official
AEG Nisqually Chapter Newsletter

Exploring slow slip events along the Cascadia subduction zone with geodetic data

Slow slip falls within a spectrum of slip modes that serve to release and redistribute elastic strain along the subduction plate interface. Representing transient episodes of aseismic slip, slow slip events (SSEs) have durations that are longer than normal earthquakes (seconds-to-minutes) and shorter than continuous creep. Long-term SSEs have been observed at several subduction zones around the globe, but evidence for long-term slow slip has remained elusive in the Cascadia subduction zone. In this talk, I will outline a systematic analysis of 13 years of GNSS time series data from 2006 to 2019 and present evidence of at least one low-amplitude long-term slow slip event on the Cascadia subduction zone. Starting in mid-2012, a 1.5-year transient is observed in southern Cascadia, with a group of coastal GNSS stations moving □2 mm to the west. The data are modeled as a Mw 6.4 slow slip event occurring at 15–35 km depth on the plate interface, just updip of previously recognized short-term slow slip and tremor. The event shares many characteristics with similar long-term transient events on the Nankai subduction zone. However, the total fault slip amplitude is an order-of-magnitude smaller in Cascadia when compared to large events elsewhere, making long-term slow slip detection challenging in Cascadia.

Meeting Details

Tuesday, March 1st

Location: Mercato Ristorante

111 Market St NE

Olympia, WA

6:00 pm Social

7:00 pm Presentation

Dinner: Pizza and Salad

$25 Member or Non-Member

$15 Educators or Job Seekers

$5 Student

Virtual attendance is free

Upcoming Meetings:

Please RSVP by 4 pm Monday, Feb. 28th if you plan on attending in person. RSVP at:

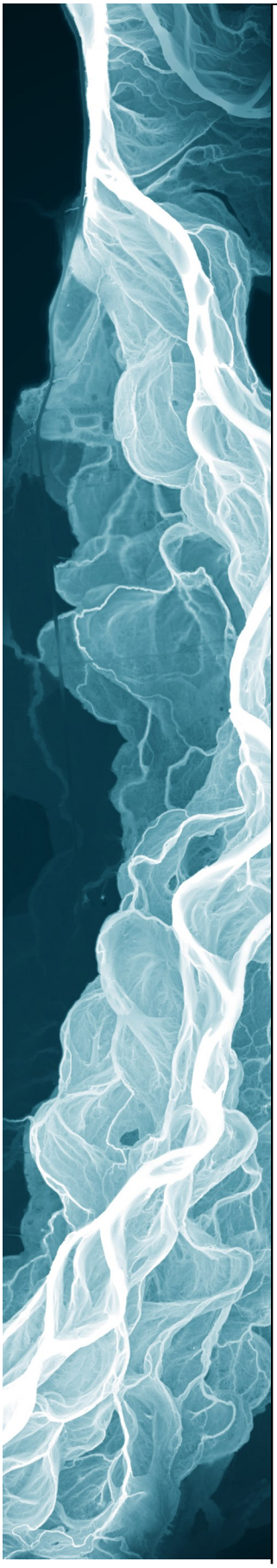
https://aeg-nisqually.brownpapertickets.com

COVID vaccination required for in-person attendance

Zoom Meeting Info:

Join Zoom Meeting
https://us02web.zoom.us/j/5468085690?pwd=Q3dWUkc4SUYyQVNHQjZuRFNNS2pndz09

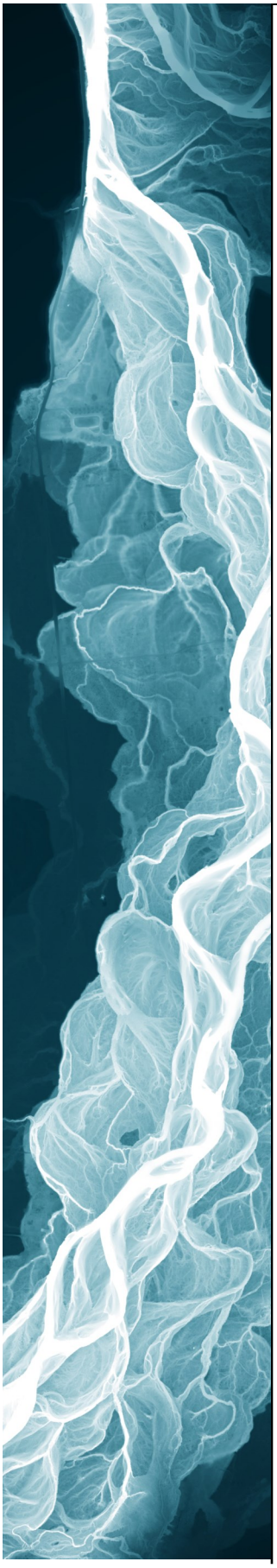
Meeting ID: 546 808 5690
Passcode: 536655
One tap mobile
+12532158782,,5468085690#,,,,*536655# US (Tacoma)



Bio: Carolyn Nuyen

Carolyn Nuyen is a PhD candidate in the Earth and Space Sciences Department at the University of Washington. She graduated from Colorado College in 2015 with a BA in geology and a minor in physics. Her research focuses on using geodetic data to constrain the characteristics of slow slip events along the Cascadia margin. She also studies crustal deformation near the Mendocino triple junction, leveraging geodetic velocities to explore how strain is partitioned along faults in this region.

If you would like to see more work from Carolyn, check out her recently published paper on long-term slow slip events (SSEs), here.



Message from the Chair

Thank you for your patience last month as we are adjusting to our new tech setup. We have updated the remote link, which had expired prior to our January talk, unbeknownst to us (ACK!).

We will be hosting this years distinguished Jahns Lecturer, Rick Wooten during the last week of April this year. He is offering several talks to choose from. If you have a preference on which talk you would like to hear, let us know here by April 1st. The talk with the most votes wins!

a. Debris Flows, Big Slow Movers, and Rocks Slides: Assembling the Geospatial Legacy of Landslides using Lidar, Drones, and Boots on the Ground

b. The Building and Upkeep of a Landslide Hazards Program: The Confluence (Collision?) of Science, History, Politics, and Public Opinion – A Blue Ridge Perspective on a National Challenge

c. Responding to Landslide Emergencies: Communicating with Stakeholders and the Feedback Loop of Preparation, Response, Analysis and Lessons Learned

d. Going Against the Grain: Linking Brittle Cross-Structures with Landslides, Hydrogeology, and Earthquakes in the North Carolina Blue Ridge and Piedmont

AEG HQ/Other Chapter Updates

1. On March 15th at 4:45 PM PST the Illinois Chapter of AEG is hosting a free remote meeting titled "Thermal perturbations of the urban subsurface: origins and effects". The link to sign up can be found, here.

2. AEG National is currently accepting abstracts for this year's conference which will be held in Las Vegas from September 13-17, 2022.

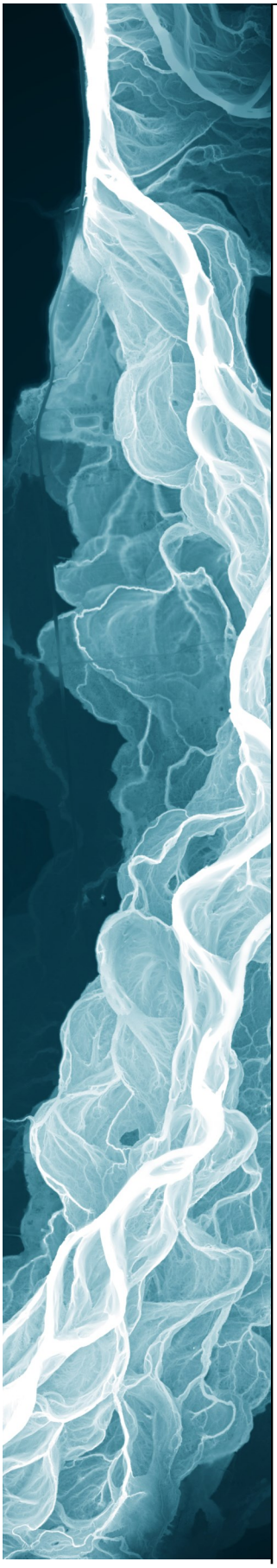
Fun links to help you pretend to be working

Did you know that on the AEG national website there is a "Geology of the Cities of the World" webpage, which is intended to eventually published in an eBook? Currently they have a published map of Seattle from 1991, but that's it for Washington State! Perhaps out Chapter can help add to the database! Information about how to submit local maps for consideration can be found here.

Cheers,

Britt

aegnisqually@gmail.com



Message from the Chair

Meetings Sponsors:

We are currently seeking sponsors to help us support this chapter now and into the future! All interested Sponsors will be featured in the newsletter for the month, with monthly subscription options available as shown below. If you, or someone you know is interested, just let us know!

- Gold Status: $100/Month, Full Page
- Silver Status: $50/Month, ½ Page
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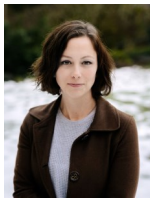

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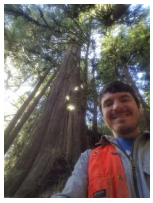

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The AEG Nisqually Chapter Newsletter

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.

AEG NISQUALLY CHAPTER NEWSLETTER is published monthly from September through April. Subscriptions are for members of AEG affiliated with the Nisqually Chapter or other Chapters, and other interested people. E-mail subscriptions are free.

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