

**The Official**

# AEG OREGON CHAPTER NEWSLETTER

<http://www.aegoregon.org>

<b>MEETING DETAILS</b>	
<b>Date:</b> Tues, Apr 16, 2019	
<b>Location:</b> Old Market Pub 6959 SW Multnomah Blvd Portland, OR 97223	
<b>Evening Agenda:</b>	
6:00 pm Social Hour	
6:45 pm Dinner	
7:30 pm Presentation	
<b>Registration:</b>	
Web: <a href="https://aeg-or-2019-04.brownpapertickets.com/">https://aeg-or-2019-04.brownpapertickets.com/</a>	
<b>Fees:</b> \$25 Private Industry \$20 Public Agencies Free for Students	
<b>Deadline:</b>	
Noon, Monday, Apr 15, 2019 \$2 surcharge for those who do not register by the deadline.	

**UPCOMING MEETINGS**

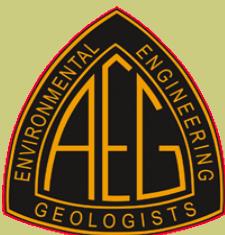
Tues, May 21<sup>st</sup>, 2019  
Student Poster Night

**UPCOMING EVENTS**

Mon, April 15<sup>th</sup>, 2019  
Dave Fenster (AEG National President)  
PSU Sponsored Talk, 5-6pm  
Cramer Hall Building (room S17)

Tues, April 23<sup>rd</sup>, 2019  
Jeff Rubin (TV Fire & Rescue)  
PSU Sponsored Talk, 1:30-2:30pm  
Cramer Hall Building (room S17)

Sept, 17-22, 2019  
62nd AEG Annual Meeting  
Asheville, North Carolina

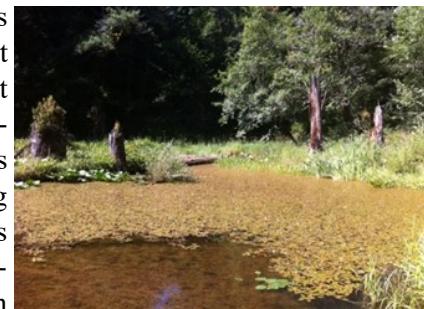
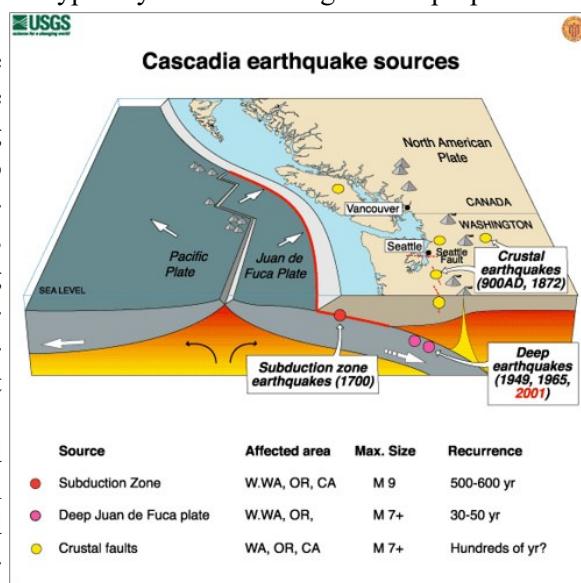
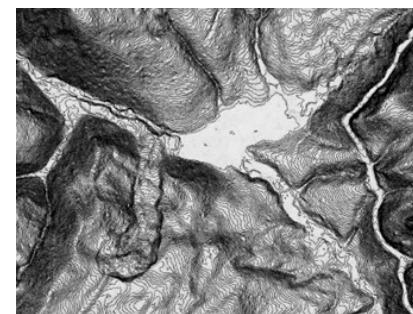


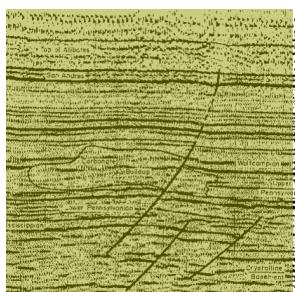
## Hunting For Cascadia Triggered Landslides

by Bill Burns and Will Struble

Large magnitude earthquakes and climatic events in mountainous settings commonly trigger thousands of landslides, and these slope failures typically constitute a significant proportion of the damage associated with these events.

Large, dormant deep-seated landslides are ubiquitous in the Oregon Coast Range (OCR), USA, yet a method for calculating landslide ages with accuracy required to diagnose a specific triggering event, including the 1700 AD Cascadia earthquake, has remained elusive. Establishing a compelling connection between pre-historic slope instability and specific triggers requires landslides ages with accuracy greater than that provided by 14C dating of detrital materials. Tree ring analysis is the only known method capable of determining landslide age with this accuracy. Dozens of landslide-dammed lakes in western Oregon present an opportunity to use tree rings from drowned snags, or 'ghost forests,' to establish the year of death, and thus landsliding. We crossdate tree ring indices from drowned Douglas-fir trees with existing live tree ring records from the OCR that exhibit synchronous, time-specific patterns due to regional climate variations. Our analyses determine that the landslides responsible for creating Wasson and Klickitat Lakes occurred in 1819 and 1751 AD, respectively. 14C dates from selected tree rings and landslide deposit detritus are consistent with our tree ring analysis, although the ages exhibit high variability, revealing the limitations of using 14C dating alone. Because dendrochronology provides annual accuracy of landsliding, sampling tree rings at additional landslide-dammed lakes throughout the OCR can be used to constrain the potential effects of ground motion and major climatic events on Cascadia landscapes.

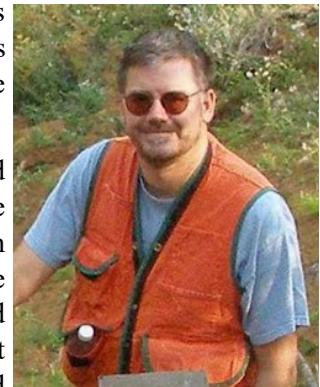




## Bios: William (Bill) Burns, MS, CEG

Bill attended Florida State University where he earned his bachelor's degree in geology and then Portland State University for his master's degree in geology. While working on his masters, he was a research assistant on a study of landslides impacting the Portland METRO from the storms of 1996-97. His master's thesis was on the Engineering Geology and Relative Stability of an area in Oregon City, Oregon.

Bill is a registered Professional Geologist (RPG) and Certified Engineering Geologist (CEG) in Oregon and Washington. He spent roughly 10 years consulting as an engineering geologist in Oregon and Washington before his current position as Landslide Geotechnical Specialist at the Oregon Department of Geology and Mineral Industries (DOGAMI). He has spent the last 15 years at DOGAMI working on research related to earthquake, landslide, and volcanic hazards in Oregon. He is the principal investigator at DOGAMI on landslide hazards and has authored many publications on landslide hazard mapping methodology, risk analysis, and maps. He has spent the last 25 years helping communities in Oregon understand and reduce risk from earthquake, volcano, and landslide hazards. Bill is also an active member of the Association of Engineering Geologist (AEG) and the Geological Society of America (GSA).



*"Keen observation is at least as necessary as penetrating analysis"*

*Karl Terzaghi*

## Will Struble, University of Oregon Ph.D. Candidate

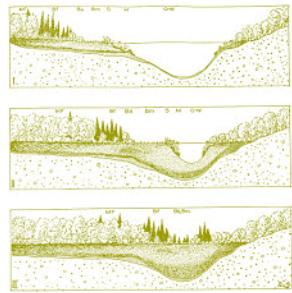
Will Struble is a PhD Candidate in the Department of Earth Sciences at the University of Oregon. As a native of northern Nevada and Lake Tahoe, his fascination with landscape evolution stems from exploring the Sierra Nevada and Basin and Range at a young age. His research focuses on quantifying landscape response to seismicity in the Pacific Northwest, notably by dating landslide-dammed lakes in the Oregon Coast Range using dendrochronology. He additionally is studying the tectonic geomorphology of the Cascadia forearc over Neogene timescales. He received his BS in geology from the University of Nevada, Reno in 2016 where he worked on using the geomorphic expression of normal faults to predict slip rate. He is a recent recipient of the Lokey Doctoral Science Fellowship, and he spent summer 2018 at the University of Potsdam working on landscape evolution numerical methods. When not perusing Oregon's ever-growing LiDAR dataset, he spends his time hiking and exploring the western U.S.



## Geology Quiz

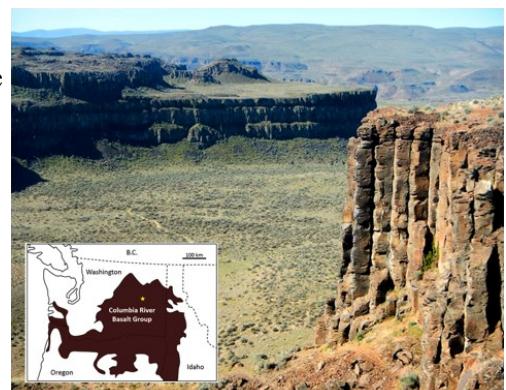
What is the approximate total volume of the Columbia River Basalt Group?

- a) 2,000 km<sup>3</sup> b) 20,000 km<sup>3</sup>
- c) 200,000 km<sup>3</sup> d) 2,000,000 km<sup>3</sup>



BONUS: Which Unit is most voluminous?

(Answers: c and Grand Ronde (150,000 km<sup>3</sup>)



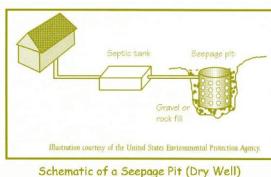


Illustration courtesy of the United States Environmental Protection Agency

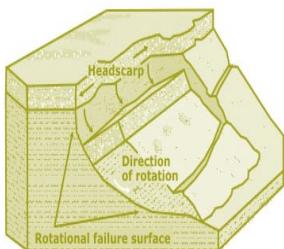
Schematic of a Seepage Pit (Dry Well)

## Message from the Chair

Thanks to everyone who was able to attend the March meeting. I realize that many of you were away doing Spring Break activities with your families, but it was great to see the smiling faces of those who could attend. A big Thank You to Ms. Deborah Green, our Jahns Distinguished Lecturer, for her presentation last month “Let’s Talk: A Conversation on How We Communicate about Science”. Personally, I’ve been practicing my “elevator speech” ever since her talk so that I can better communicate the importance of applied geology to others. If you missed Ms. Green’s talk you may have another chance this coming November when she may be back in Portland again to present to the PSU Student Chapter. We’ll let you know the date when she finalizes her plans.

Believe it or not, our meeting season is starting to wrap up. And with the end of our season, there is an opportunity for an enthusiastic AEG member to join the Oregon Chapter Board as Secretary next year. Being on the board is a great way to give back to our geology community, gain leadership experience, and to shape the future of AEG. If you are interested in joining the board, please contact me or another current board member. Don’t be shy!

You may have noticed in the past year or two that we’ve are starting to have some technical difficulties with our projection equipment. The projector we currently use for our AEG meetings is over ten years old and starting to feel its age. You will be happy to know that the chapter board has voted to purchase a new, modern projector. We hope to have it soon, ready for the next year’s meeting season.



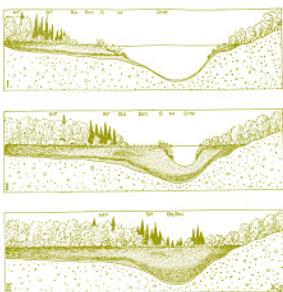
During this month’s meeting we will have the pleasure to host the AEG President himself, Mr. Dave Fenster. Mr. Fenster is in Portland this month and plans to attend our meeting; so, come meet the President! During our pre-presentation announcements, Mr. Fenster will also likely say a few words to update us all on the State of AEG.

Christopher Humphrey, R.G., C.E.G.  
Oregon AEG Chapter Chair

## Message from PSU Student Chapter President Jessica Moore

The AEG PSU Student Chapter would like to invite you all to two upcoming PSU Student Chapter sponsored talks (anyone can attend these).

- April 15, 2019 from 5-6pm at PSU in the Cramer Hall Building (room S17), Mr. Dave Fenster, AEG President, "Why is Applied Geology Important for Nuclear Power Plant Siting".
- April 23rd from 1:30pm-2:30pm at PSU in the Cramer Hall Building (room S17), Mr. Jeff Rubin, Emergency manager from Tualatin Valley Fire & Rescue, "How you can apply your geoscience background to a range of professions".



## Student Poster Night

There is still time to be a part of the Student Poster Night. The flyer for this year's event is attached on the next page. Please encourage any participants interested in presenting at this year's event. Looking forward to seeing the research being conducted and meeting students from the region. Thanks for your efforts participants!

# AEG's 2019 Student Poster Night

This year's student poster night will be held on  
**Tuesday May 21st, Old Market Pub, Portland**

## **Who can submit a poster?**

Bachelor, Master, and PhD students generally focused in geology and earth sciences studies – though others with relevant topics are welcome.

## **What topics are acceptable?**

The subject should be directly related to geology and earth sciences but within a myriad of topics including environmental, engineering, soils, field mapping, GIS, technology, chemistry, etc. can all be considered. The project area does not have to be in Oregon. Posters associated with a senior project, master's thesis, or PhD dissertation are all acceptable, including in-progress work.

## **What do you need to do?**

At least two weeks in advance of the meeting, notify the Oregon AEG Chapter Board of your topic and provide an abstract of the poster presentation by sending an email to: [geohumphrey@yahoo.com](mailto:geohumphrey@yahoo.com)

## **What does it cost?**

Nothing. Student are always free to attend our monthly meetings and the meeting this year is free to all attendees. Food will be provided.

## **What can you win?**

This year we will have multiple awards for the posters, including:

**Best Undergraduate - \$250**

**Best Graduate - \$250**

**Best Quality of Presentation - \$150**

**Best Overall - \$350**

**Most Relevant to Engineering  
Geology Practice - \$200**

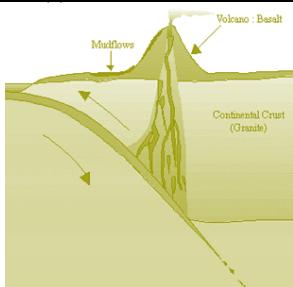
**Most Relevant to Environmental  
Geology Practice - \$200**

**Plus, each abstract submitter\* will receive a \$25 gift card to REI**

\*— one gift card per poster or person if multiple posters are submitted

\*\*— The first 30 poster submissions will be accepted due to venue space limitations

\*\*\*— One award per poster



## AEG Oregon Chapter Student Award to Attend the 2019 Annual Meeting in Asheville, North Carolina

*"Old Mountains...New Beginnings. Using the past to Map the Future."*

Two \$1,250 awards are available for two lucky Student Members of the Oregon Chapter to attend the AEG 62<sup>nd</sup> Annual Meeting in Asheville, North Carolina from September 17-22, 2019. Candidates are required to meet the following criteria:

**Accepted Abstract for the AEG 2019 Annual Meeting** - Abstracts for the 2019 AEG Annual Meeting must be submitted online to AEG no later than May 1, 2019. The AEG Technical Committee should provide confirmation of abstract acceptance by June 15, 2019. A copy of the notice of acceptance from the Technical Committee must be submitted with the application.

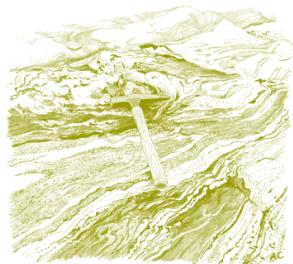
### Completion of the AEG Oregon Chapter Student Award Application

Application submittal to the Oregon Chapter Chair ([geohumphrey@yahoo.com](mailto:geohumphrey@yahoo.com)) of AEG due by 10 p.m. on Friday June 28, 2019. The application is provided on Page 6.

**Active AEG Oregon Chapter Student Membership** – Only Student Members of the AEG Oregon Chapter are eligible for this award. If you are not currently a Student Member of AEG, you may register for free at [www.aegweb.org/page/JoinOrRenew](http://www.aegweb.org/page/JoinOrRenew).

**Essay** (250 to 500 words) - Describe your geologic activities outside of the university classroom demonstrating how these activities relate to your professional geology goals. Activities might include attendance at geology-related meetings, professional field trips, mentorship experiences, volunteering in the community, laboratory work, etc.

**Complete applications for this award are due no later than 10 p.m., Friday, June 28, 2019.** Selection of award winners is at the sole discretion of the AEG Oregon Chapter Board. The Board reserves the right to not select a winner(s) if there are an inadequate number of submissions or if applicants do not meet the minimum requirements. We expect to select winner(s) of the award by July 5, 2019.



## AEG Oregon Chapter Student Award Application 2019 AEG Annual Meeting Attendance Asheville, North Carolina, September 17-22, 2019



Student Name: \_\_\_\_\_

AEG Student Member Number <sup>(1)</sup>: \_\_\_\_\_

College/University: \_\_\_\_\_

Address (if your address will be different over the summer, please supply both your current and summer address, if applicable):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E-mail: \_\_\_\_\_

Phone number: \_\_\_\_\_

Title of Presentation <sup>(2)</sup>:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attach a 250- to 500-word essay<sup>(3)</sup> describing your geologic activities outside of the university classroom demonstrating how these activities relate to your professional geology goals. Activities might include attendance at geology-related meetings, professional field trips, mentorship experiences, volunteering in the community, working in a lab, etc.

Applications are due no later than **10 p.m., Friday, June 28, 2019**. It is the intent of the AEG Oregon Chapter Board to select award winners by July 5, 2019. Selection of award winners is at the sole discretion of the AEG Oregon Chapter Board.

Please submit the application package via email to the AEG Oregon Chapter Chair:  
Chris Humphrey ([geohumphrey@yahoo.com](mailto:geohumphrey@yahoo.com))

(1) Student membership with AEG is free. You can join on-line at: <https://www.aegweb.org/page/JoinOrRenew>

(2) Submit a copy of your abstract with this application, and a copy of the acceptance notice from the AEG Technical Committee indicating you will be presenting at the 2019 AEG Annual meeting.

(3) Attach the required essay and additional supporting documentation, if applicable.

*"The earth is large and  
old enough to teach us  
modesty."*

Hans Cloos



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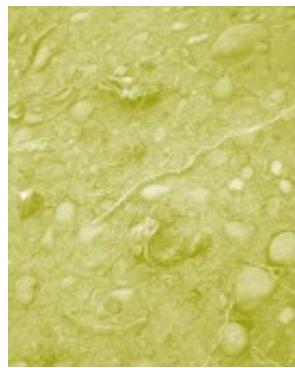
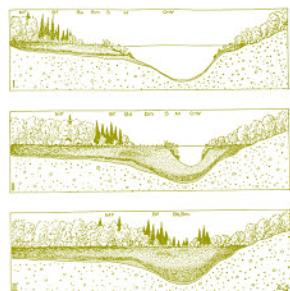


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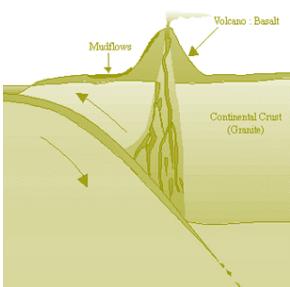


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#### Engineering Geophysics:

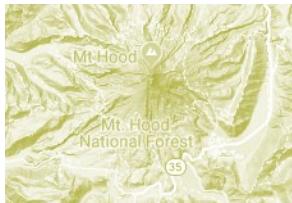
- Seismic Refraction/Reflection
- Shearwave Velocity Studies
- Electrical Resistivity Profiling
- Ground Penetrating Radar
- Magnetics/Electromagnetics
- Gravity
- Marine Geophysics

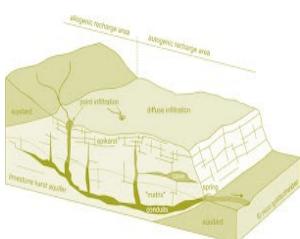
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A photograph of an orange and white helicopter flying over a large, steep rock face with a safety net installed along its edge.

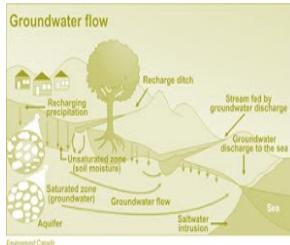
Two workers in safety gear are working on a large rock face. One worker is standing on a ledge, and the other is hanging from a rope. A large metal anchor or bolt is visible protruding from the rock.

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*"A soil adapted to the growth of plants, is necessarily prepared and carefully preserved; and, in the necessary waste of land which is inhabited, the foundation is laid for future continents, in order to support the system of the living world..."*

*James Hutton*

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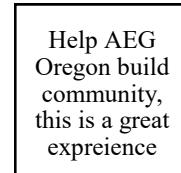
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**National AEG webpage:**  
**<http://aegweb.org>**



PSU Student Chapter President:  
Jessica Moore  
Portland State University  
[jlm29@pdx.edu](mailto:jlm29@pdx.edu)



Past-Chair:  
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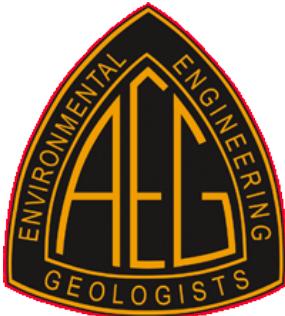
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## The AEG Oregon Chapter Newsletter

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 OREGON CHAPTER NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Chapter or other Chapters, and other interested people who have requested and paid a local subscription fee of \$10.00. E-mail subscriptions are free. News items are invited and should be sent to: Ben George, AEG Oregon Chapter Chair-Elect, Cornforth Consultants, Inc., 10250 SW Greenburg Road, Suite 111, Portland, OR 97223, e-mail: [bgeorge@ccilt.com](mailto:bgeorge@ccilt.com), phone (503) 452-1100. Electronic media is preferred. Deadline for submittal is the 25th of the month. Advertising: business card size \$100/yr; 1/4 page \$200/yr; 1/2 page \$350/yr; 1 page \$450/yr.