

Pacific Northwest Section



Spring 2018

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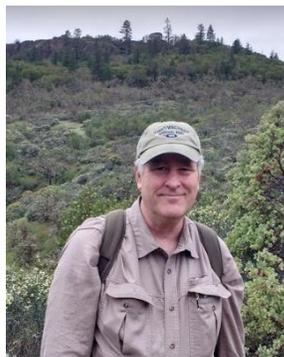
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From the President Greetings!



I'd like to personally invite you to the section's 2018 annual conference Wednesday through Friday, June 27-29 based at Mount Hood Community College in Gresham, Oregon. Look inside this issue for further details and registration forms. A tremendous amount of planning has gone into this year's meeting, as is typical for all

annual meetings. Special thanks go to this year's organizing committee: Eriks Puris, Daina Hardisty, Hillary Goodner, and Andy Hilt. They continue to work on a top-flight gathering. Plan on attending all or part. It will be a great opportunity to rub shoulders with colleagues and share experiences.

I also wish to thank Andy Buddington, who edited this newsletter, for his efforts in recruiting people to serve in the section as state councilors. The section is also looking for a 2nd Vice President. Hillary Goodner has been serving in this capacity this year and is doing an outstanding job. This year's annual meeting materials owe their flow and layout to Hillary. Adding a new 2nd Vice President, means her advancement to Vice President, a position now vacant, and ultimately to President. Except for the treasurer, officer positions are typically a year in duration. Longer if nominees fail to materialize. Service brings opportunities. If you're interested in serving, please contact me.

On a personal note, it has been a year of transition, and it's sometimes hard to answer the question, "what are you doing" when you don't have a standard affiliation. After 15 years with the Oregon Department of Geology and Mineral Industries and 13 years teaching for Coquille High School and Southwestern Oregon Community College, I retired from PERS, the state pension system. I now occupy my time serving in business and for non-profits, NAGT being a major component. As I mentioned earlier, service brings opportunity, and in future editions of this newsletter, I'll share some of those experiences.

Hope to see you at the annual meeting!

2018 Pacific Northwest Section Annual Conference—*Save the dates!*

June 27-29, 2018 – Wed-Fri

This year's annual meeting is scheduled to be based in the Portland, Oregon area. Details at the end of the newsletter.



Photo credit: USGS.gov

Greetings from your new Alaska representatives!

Sonia Nagorski from the University of Alaska Southeast (UAS) and LeeAnn Munk from the University of Alaska Anchorage (UAA) are stepping up to be the new representatives for the NAGT from the great state of Alaska.

Sonia Nagorski, an assistant professor of Geology, teaches Historical and Physical Geology, Geomorphology, Earth Resources, and Natural Hazards as part of the Environmental Science and Geography programs at UAS.



Sonia Nagorski

At UAA, LeeAnn Munk is a Professor of Geological sciences, teaches both undergraduate and graduate courses in Geochemistry, Earth Resources and Society, Field Methods, Geology of Death Valley, Environmental Geochemistry and Isotope Geochemistry.

Both Sonia and LeeAnn focus their research on geochemistry. Most of Sonia's work in Alaska has centered on mercury transport and fate in regional streams, from highly glaciated to peatland-rich

watersheds typical of our diverse landscape mosaic in the temperate rainforest. She has also done extensive work on



LeeAnn Monk

other trace element cycling in both mining and unimpacted streams as well as the changing albedo of the Juneau icefield due to black carbon and dust deposition.

LeeAnn's research is focused on the geochemistry of natural waters, in particular water-rock interactions and how major and trace elements and isotopes can be applied to understand geochemical weathering, transport and fate. She is interested in solving environmental problems as well as developing novel geochemical exploration tools. She applies the principles of geochemistry to diverse problems associated with mined and un-mined mineralized terrains and has investigated trace element geochemistry across a spectrum of environments from polar and high altitude deserts to temperate climates. Some of her recent projects are focused on groundwater resources in Alaska, geochemical weathering of high latitude island arcs, and the origin of lithium brines in South America and Nevada.

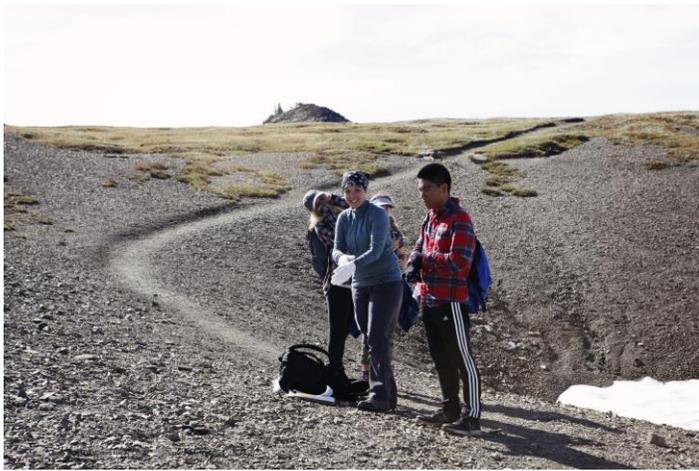
LeeAnn and Sonia look forward to connecting with faculty, teachers, students, and others in the PNW geoscience community!

Leveraging the benefits of field courses for 2YC students

Hal Wershow, Everett Community College

Gather a few geologists around a campfire, and field camp stories will circulate. We all know this to be a seminal moment in our geology education, when we struggled to apply years of book learning to the messy real world, and where lifelong friendships were forged under the blazing sun and occasional summer snowstorm. What we intuitively understood is validated by education research; students learn better and form community on field courses. But why wait until the end of an undergraduate education to expose our students to Geology's best class? Why not take advantage of the increased sense of community at the beginning of a student's journey, so that they have a built-in support network for the inevitable challenges?

And... why let the 4YC faculty have all the fun?



Everett CC students prepare to dig into periglacial sediments, Lillian Ridge, Olympic Mountains of WA.

For all of these reasons, I created a geology field course at Everett Community College, but with a twist. No prerequisites. The course is open to any student, regardless of their scientific background. Of course I want to recruit majors, and I cannot imagine a better setting. We take the students to Washington's stunning mountains, from the glaciated ridges of the Olympic Mountains to the blasted volcanic terrain of Mount St Helen's. But most of the students won't be geology majors, and that is OK too. They are taking the class because it meets their science distribution requirement, and therefore is probably the last science class they ever take. If we do our job well, this means they will re-enter the world with a deeper understanding of the nature of science and an openness to continuing to engage with science.



EvCC students take a snack break on Lillian Ridge, Olympic Mountains of WA.

We organized the class around landscape interpretation. My background is glacial geomorphology, and my co-instructor studies alpine botany, so we found a happy synergy in using the plants to understand the rocks, and vice-versa. Our learning objectives were two-fold; to make scientific

observations about the plant communities and the geomorphic landforms, and then to attempt to interpret the controls on the plant communities and the history and future of the landforms. Above all, the emphasis was on using evidence (from observations) to support plausible interpretations.

This was not typical "show and tell" geology. Rather, we followed a three-step "learning cycle" approach. First, with minimal background but with structured tools for making repeatable observations, students explored a field site in groups of four. Second, we walked the students through the field site, sharing observations from all groups and filling in key observations that may have been missed. We also shared plausible interpretations, emphasizing multiple hypotheses and brainstorming what additional information we would need to discard a given hypothesis. Third, we set the students loose in a new, but similar, field site and challenged them to come up with their own interpretations.



EvCC students describe plant communities and geomorphology of Lillian Basin, Olympic Mountains of WA.

I'll let the students give the (anecdotal) results:

"Going into the class, I was afraid of essentially everything to do with the outdoors. Bugs, the weather, being out-of-shape, no showers, you name it ... Over the eight days we spent on our trip ... I learned to love hiking. To love exploring the world around me. How to look around myself and see more than just a pretty picture. Discovering how to decipher our surroundings (how they were shaped over time and how they might change in the future)."

"I've continued to ask myself questions regarding the geology in the environment I observe around me in my yard, neighborhood, and on the trails I hike."

“I acquired more confidence by putting myself into a situation where I spent a week with strangers, whom eventually became friends.”

For many students, this was a life-changing experience. They might now see schooling and working outdoors as real, attainable goals. As soon as the course ended, the students formed a hiking group and they have already teamed up to hike and explore our nearby trails. Just as I enjoy geologizing with my fellow geologists, these students now have a community of people who hike the mountains with joy and pick up rocks with curiosity.



EvCC students hiking along Lillian Ridge, Olympic Mountains of WA.

University Spotlight – What’s It Like to be a Duck? *Dr. Marli Miller*

The University of Oregon’s Department of Earth Sciences seeks community college graduates and transfer students from the Pacific Northwest. We provide many opportunities for our undergrads –and while these opportunities typify big research departments, we give the support and mentoring typical of small ones. These opportunities arise mostly through research with our diverse faculty, departmental field trips, small upper-division class sizes, our summer field camp, and our active Geology Club. Presently, we have as many teaching faculty as we have graduating seniors, which creates close connections between students and their profs.

After completing the core, much of which is generally available through PNW community colleges, undergraduate majors choose one of four emphasis tracks through the major. These tracks, Geology, Paleontology, Environmental Geoscience, and Geophysics, allow the student to pursue their main interests. Through elective courses, students can

then further personalize their experiences. The electives range widely in subject matter, from Geologic Hazards to Vertebrate Paleontology to Hillslope Geomorphology to Fracture Mechanics. Because many of these courses are also open to graduate students, undergraduates can gain a valuable perspective on graduate school.

Our Geology Club offers the chance to enjoy geology in a more personal way. Among other things, it conducts outreach to local elementary, middle, and even some high schools and runs the annual UO Rock and Mineral Show. It also organizes its own extended field trips. Over spring break 2018, for example, the geology club traveled to Zion National Park in Utah; last year they went backpacking in Canyonlands National Park. This May, the club plans a three day trip to the Columbia Plateau. Perhaps most important, it provides a venue for student gatherings and community.

For those who want further networking opportunities, we also have student chapters of Sigma Xi (the Undergraduate Honor Society) and the American Association of Petroleum Geologists. The AAPG chapter offers occasional field trips as well as an annual professional meeting to which it subsidizes travel.

For further information about our department, please feel free to drop me a line at millerm@uoregon.edu --or visit our website: <https://earthsciences.uoregon.edu/>



Undergrad and grad students on the department-subsidized field trip to Santorini and Crete, March, 2018.

What is Pat Up To?

Our good friend and colleague, Pat Pringle, is now retired from teaching. Bummer ☹. But, he’s staying busy with cool buried forest research. ☺ Yea! Here’s what Pat is up to.

Patrick Pringle reports that Centralia College science students Ariel Quinn Moran and Beverly Luke presented

posters on their ongoing research at the 89th Annual Meeting of the Northwest Scientific Association, held at The Evergreen State College March 27–29. Quinn was studying tree rings of trees exhumed from a buried forest at Kent WA, and Beverly tree rings of trees exhumed from buried forests at Auburn and Fife Washington. The trees were killed by volcanic mudflows triggered by eruptions at Mount Rainier about 1,500 and 1,100 years ago respectively. Quinn and Beverly's research was partially funded by a 2017 Capstone Grant from the Centralia College Foundation.

Emily Lindstrum Carson, science teacher at Centralia High School, presented a poster at the meeting about buried trees she and Patrick are studying that were killed by the rupture of the Seattle Fault, also about 1,100 years ago. Her work is partially funded by a Partners in Science grant with Pringle from the M.J. Murdock Charitable Trust. The trees are buried in ancient lake deposits about one mile west of Hood Canal near the Hamma Hamma River.

Here are the citations for the research:

- Carson, Emily Lindstrum; Pringle, Patrick T.; Contreras, 2018, **Using dendrochronology and radiocarbon dating to investigate a subfossil forest in the Puget Lowland and southeast Olympic Mountains** [Abstract]: Northwest Scientific Association, Annual Meeting, 89th, p. 41. [[proceedings link](#)] [[download poster](#)]
- Luke, Beverly; Pringle, Patrick. T.; Moran, Ariel Q., 2018, **Are sub-fossil forests in Auburn and Fife, Washington victims of the same explosive eruption at Mount Rainier?—testing the hypothesis with radiocarbon dating and tree-ring analysis** [abstract]: Northwest Scientific Association, Annual Meeting, 89th, p. 74. [[proceedings link](#)][[download poster](#)]
- Moran, Ariel Q.; Pringle, Patrick. T.; Luke, Beverly, 2018, **Radiocarbon dating and dendrochronology investigation of a ~530CE subfossil forest at Kent, Washington** [abstract]: Northwest Scientific Association, Annual Meeting, 89th, p. 79. [[proceedings link](#)][[download poster](#)]

Pat would also like to report that the product of a National Science Foundation TUES (Transforming Undergraduate Education in STEM) grant I have contributed to since 2013 on is now online, hosted by the Science Education Resource Center at Carleton College. The project has been a collaborative effort among faculty at Columbia University, William Paterson University, U.S. Military Academy at West Point, Passaic County Community College, and Centralia College with the goal of developing curriculum modules based on applications of tree rings to age dating, climate and environmental change, volcanic hazards,

statistical modeling, and forensic science. Pat tested some of the modules in several geoscience classes. Although they are still doing some final edits, the TREX (Tree Ring Expeditions) website is up and running: <https://serc.carleton.edu/trex/students/index.html>

Nick On The Rocks

A fun and educational series of short geology episodes made for Seattle's PBS station, are now available online. Hosted by Nick Zentner at Central Washington University, the 5-minute episodes highlight the spectacular geology of the Pacific Northwest. 6 new short episodes of 'Nick On The Rocks' that aired on PBS Seattle recently.

Lake Chelan - Battle of the Ice Sheets (w/ Chris Mattinson)

Click [HERE](#) to watch. 5 minutes.



Chasing Ancient Rivers (w/ Steve Reidel)

Click [HERE](#) to watch. 5 minutes.



Seattle Fault (w/ Sandi Doughton)

Click [HERE](#) to watch. 5 minutes.



NAGT National News

Bridge of the Gods Landslide (w/ Jim O'Connor)

Click [HERE](#) to watch. 5 minutes.



Columns of Basalt Lava

Click [HERE](#) to watch. 5 minutes.



Ancient Volcanoes in the Cascades (w/ Daryl Gusey)

Click [HERE](#) to watch. 5 minutes.



AND There's More! Nick Zentner, CWU Geology, has four new lectures on YouTube!

- **Exotic Terranes of the Pacific Northwest.** Click [HERE](#) to watch. 69 minutes.
- **Dating the Ice Age Floods.** Click [HERE](#) to watch. 86 minutes.
- **Ghost Volcanoes in the Cascades.** Click [HERE](#) to watch. 71 minutes.
- **Bridge of the Gods Landslide.** Click [HERE](#) to watch. 65 minutes.

In 2018, NAGT hosts the fourth annual **Earth Educators' Rendezvous** in Lawrence, KS July 16-20. **When you renew** your membership, you are supporting NAGT's valuable professional development opportunities, award programs, and outreach efforts. You will also continue to receive access to NAGT's two publications. The *Journal of Geoscience Education* ([JGE](#)) is the premier peer-reviewed publication for geoscience education research, curriculum, and instruction at the undergraduate and pre-college levels. *In the Trenches* ([ITT](#)) is a full color, 16-page publication, designed to provide a forum for geoscience education dialogue targeting educators in the classroom.

Please remember to **renew your membership** for 2018 to keep us going strong! To renew online with a credit card, simply go to nagt.org/members. A printable PDF is available on our website at

<http://nagt.org/nagt/membership/index.html>.

NAGT Awards

As most of you know, NAGT gives numerous annual awards, "mini-grants", and scholarships. These awards support and recognize great teaching and work in the geosciences. But, for people to be recognized and otherwise provided support, there need to be nominations! We need your help. Please, take a moment and think of some deserving teacher or colleague. Maybe you have a student that needs help with field camp funding. Or maybe it's time act on that crazy idea you have for research by applying for funding.

For the complete list of awards and deadlines, visit the NAGT website at <https://nagt.org/nagt/awards/index.html> for all the information needed to nominate or apply. Below is a quick list of what NAGT has to offer:

- Outstanding Earth Science Teacher Award
- Neil Miner Award
- James Shea Award
- Robert Christman Award
- Dorothy Stout Professional Development Awards
- Outstanding TA Award
- Scholarships for Field Study

MEETINGS, WORKSHOPS & TRIPS

Central Washington University, Public Lectures & Field Trips: <http://www.geology.cwu.edu/lectures/>

Ice Age Floods Institute: website, events, field guides: <http://iafi.org/>

Washington Science Teachers Association:
<https://wsta.wildapricot.org/>

2018 GSA Annual Meeting: The 2018 GSA annual meeting will be held in Indianapolis, Indiana, November 4-7. For more information, go to [http://www.geosociety.org/GSA/Events/Future Annual Meetings/GSA/Events/Annual Meeting.aspx](http://www.geosociety.org/GSA/Events/Future%20Annual%20Meetings/GSA/Events/Annual%20Meeting.aspx)

2018 GSA Joint Rocky Mountain Cordilleran Section Meeting

The 2018 Cordilleran Section will be May 15-17 in Flagstaff, Arizona. For more info, go to: <http://www.geosociety.org/cd-mtg>

28th Annual Idaho Water Quality Workshop: Jan 30-Feb 1, 2018 at Boise State University: <http://www.deq.idaho.gov/assistance-resources/conferences-trainings/idaho-water-quality-workshop/>

Northwest Geological Society, Seattle, Washington: monthly meetings, lectures, and field trips: <http://www.nwgs.org/>

GENERAL SECTION NEWS

British Columbia: There is a meeting in Vancouver entitled “**Resources for Future Generations**”, June 2018: <http://rfg2018.org/> which includes a nice looking group of geology-oriented field trips associated with the conference: <http://rfg2018.org/en/RFG/2018/Technical-Program/Technical-Field-Trips> *Todd Redding*

Oregon: see above.

Idaho: The **Tobacco Root Geological Society Field Conference** is July 27-29, 2018 in Bozeman, MT. Here is the link: <https://www.trgs.org/field->

conferences. This is a GREAT conference with awesome field trips!

The recently released **Geology Underfoot in Southern Idaho** is a great resource for those who wish to visit and/or read about some of the unique landscapes of Southern Idaho. The book explores 23 well and lesser known sites, providing detailed directions, maps, color photos and graphics, and engaging prose to convey and explain the geologic story. Signed copies can be purchased from the author at: <https://squareup.com/store/shawn-willsey> or you can purchase through Amazon and other local stores in southern Idaho.

Washington: Spokane Intercollegiate Research Conference, April 28, 2018, hosted by Whitworth University. An excellent opportunity for undergrads to show off their research! Free. <http://digitalcommons.whitworth.edu/sirc/2018/>

Geology Department at the University of Puget Sound will host this year's (almost) annual **South Sound Undergraduate Geoscience Conference** on Saturday morning, April 28th. It's a venue for undergrad Geology students to present research posters in an informal and friendly setting. If you have students who might be interested, OR would just like to attend to see what some undergrads are doing, please let me know, and I will forward more information. It usually runs 2-3 hours on Saturday morning, with a few refreshments available. We will provide easels or other materials to mount posters.

Central Washington University's Geology Department hosted potential transfer students from Washington's two-year colleges during the first weekend of April. Custom geology lectures and tours of the department's new three-story building were offered both Friday and Saturday. Field trips to nearby Frenchman Coulee, Thorp Lahars, and Manastash Ridge were featured.



CWU Geology “new digs”

The CWU attendees:

- 5 from Yakima Valley College (including instructors David Huyke and Hillary Goodner)
- 7 from Everett College (including instructors Steve Grupp and Kaitlin Owen)
- 2 from Lower Columbia College in Longview (students of Morgan Salisbury)
- 6 from Centralia College (including instructors Michelle Harris and Karen Goodwin)
- 1 from Pierce College (student of Tom Bush)

The Transfer Student Recruit Weekend will continue the first weekend of October and April in years to come. All students and instructors are welcome!



CRB ecstasy – “don’t loose your hammer in a joint!”

WHO’s NEW:

Dr. Morgan Salisbury is in his second year teaching Earth Science courses at Lower Columbia College in Longview, WA. Morgan received his PhD at Oregon State University where he studied the magmatic origins of high desert volcanoes in Bolivia, South America. Morgan received his Master’s degree at Central Washington University where he studied the 1915 eruption of Lassen Peak Volcano in California. Born and raised in Idaho, Morgan enjoys the outdoors and never wants to leave the Pacific Northwest, unless it’s to study some far-off volcano. At Lower Columbia College, Dr. Salisbury teaches a wide range of introductory Earth Science courses including. Morgan began teaching at LCC in the Fall of 2016 and replaced retiring Dave Cordero, who worked at LCC for 16 years.

There’s a new geology instructor at Centralia College. Pat Pringle has retired from teaching, but is as active as ever. **Michelle Harris** - took over last fall and has plans to continue/expand the menu of geology courses offered.



Morgan Salisbury instructing amongst the volcanics.



Michele Harris surfing basalt.



Morgan & crew enjoying volcanics and great spring weather.



Terraced vineyards above the Donau (Danube) River of Austria. The vineyards are part of the Wachau region famed for excellent Rieslings and other white wines on high-grade metamorphic bedrock. *Photo: A. Buddington.*

Newsletter Materials! If you have anything that you would like to share with the section, please don't hesitate to send it to either Frank or Andy. We're always looking for information and items to put in the newsletter. **Got a great field or lab sample photo you want to share?** Send along with a description. Book or article review? Or, heaven forbid, how about writing a relevant piece on something that may be of interest to the rest of us. Please submit!



The annual conference for the PNW Section of NAGT continues this year in Gresham, OR. Field trips will include Silver Falls State Park and Mount Hood. The conference day will feature oral and poster presentation from researchers and geoscience educators from around the region.

Conference Schedule

- Wednesday, June 27: Conference Day at Mount Hood Community College, Banquet with guest speaker Marli Miller
- Thursday, June 28: Field Trip — Mount Hood
- Friday, June 29: Field Trip — Silver Falls

CALL FOR ABSTRACTS

2018 Summer Conference at Mount Hood Community College

Conference Day - Wednesday, June 27, 2018

Deadline for Abstracts - May 18, 2018

If you would like to present a talk (20 minutes) or poster (teaching techniques, geology research, undergraduate research, etc.) submit your abstract to Hillary Goodner at hgoodner@yvcc.edu. Please include “NAGT Conference Abstract” in the subject heading of your email.

Make sure that your abstract includes:

- Whether an oral presentation or poster will be submitted
- Title
- Author(s) name, affiliation, and contact email addresses
- Abstract length 1 full page (8.5” x 11”) in Times New Roman, 12-point font. You may include legible line diagrams, graphs or tables. Must maintain at least 1.0” margin on all four sides.
- Deadline — May 18, 2018

Due to the limited amount of time during conference day, acceptance for oral presentation will be based on first submitted, first granted basis. If time slots for oral presentations fill before the deadline date, you’ll be contacted in regards to a poster option.

Featured Speaker: Marli Miller, University of Oregon

Marli Miller is a senior instructor and researcher at the University of Oregon. She completed her BA in geology at Colorado College in 1982 and her MS and PhD in structural geology at the University of Washington in 1987 and 1992, respectively. Marli teaches a variety of courses, including introductory geology, structural geology, field geology, and geophotography. In addition to numerous technical papers, she is the author of *Roadside Geology of Oregon*, *Roadside Geology of Washington*, and *Roadside Geology of Death Valley National Park*. She is the photographer for *What's So Great About Granite*, written by Jennifer Carey, the editor of *Roadside Geology of Washington*.

Schedule

Check-in, talks, posters, and coffee breaks at Room AC1705, MHCC

Wednesday, June 27

8:00 am	NAGT Business Meeting
8:30 am	Conference Check-in
9:00 am	Welcome/Overview/Icebreaker
9:30 am	Talk Session #1
10:30 am	Break
11:00 am	Talk Session #2
12:00 pm	Lunch
1:00 pm	Talk Session #3
2:30 pm	Break
3:00 pm	Talk Session #4
4:30 pm	Poster Session

Banquet at Bridgeside Restaurant, Cascade Locks, OR

6:00 pm	Mixer with Poster Session
7:00 pm	Dinner
8:00 pm	Keynote Address by Marli Miller

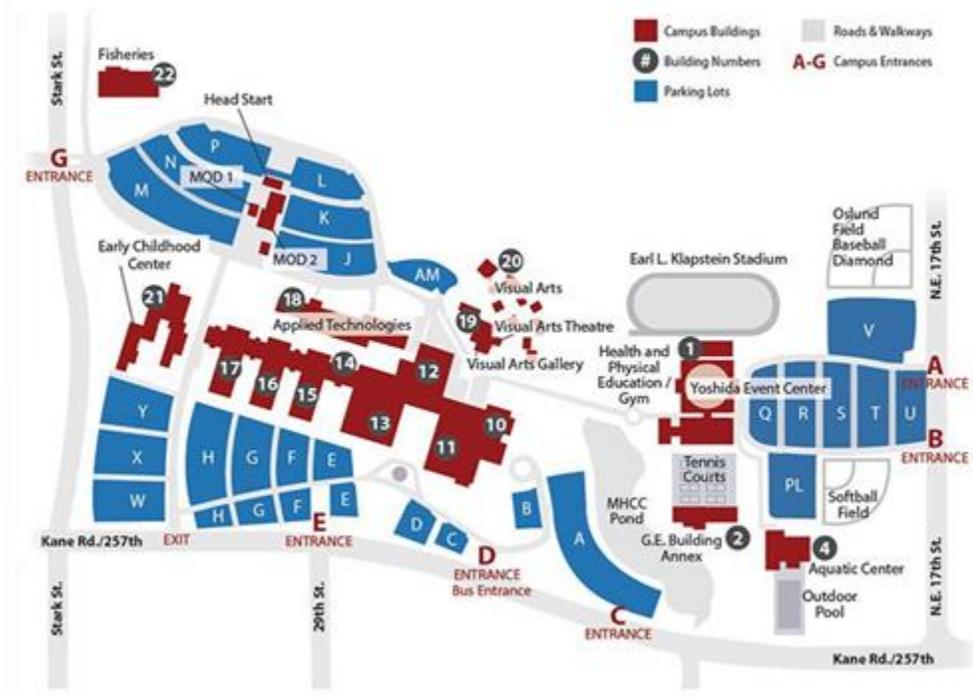
Where to Stay:

Prices in late June will be significantly higher and room availability will be reduced due to high lodging demands in this area during the summer months. *It is highly recommended to reserve rooms ASAP.*

<u>Hotel</u>	<u>Address</u>	<u>Prices (subject to change)</u>
Days Inn & Suites	24124 SE Stark St (503) 465-1515	\$89.90
Quality Inn Gresham	2752 NE Hogan Dr (503)907-1777	\$95.00
Clarion Inn	1060 NE Cleveland Ave (503)665-1591	\$100.00
Best Western Plus Cascade Inn & Suites	23525 NE Halsey St (503)491-9700	\$95.00
McMenamins Edgefield	2126 SW Halsey St (503)669-8610	\$100.00

Directions to Mount Hood Community College:

Mt. Hood Community College is located approximately 17 miles east of Portland, Oregon. When driving to the campus, take Interstate 84 to the Troutdale Exit (Exit 17). After exiting the freeway, go south on 257th street (Kane Rd) two miles to Stark street. The college is located at the corner of 257th and Stark with the main entrance being on 257th (Kane Rd). Please park in lots X, Y or H. See more at: <http://www.mhcc.edu/DrivingDirections/#sthash.ZZPq4zzH.dpuf>.



Field Trips

Field trips will depart from AC1705, Lower Level at MHCC at 8:00 AM on both Thursday, June 28 and Friday, June 29. Lunch will be provided.

Field Trip #1: Thursday, June 28, 2018



Destination: Mount Hood

Trip Leader: Willie Scott, USGS CVO Retired

Mt. Hood is an archetypal andesitic-dacitic continental-arc volcano, whose future eruptions threaten a major metropolitan area; energy, transportation, and recreational infrastructure; and important agricultural regions. This field trip will focus on its 500,000-year eruptive history and will highlight detailed geologic mapping and accompanying geochronologic, paleomagnetic, and petrologic studies that reveal an eruptive behavior characterized by low explosivity and restricted compositional range. Among topics explored will be (1) tectonic setting; (2) eruptive history, style, and hazards; (3) coeval regional mafic volcanism that surrounds Mount Hood; (4) geochemistry and proposed models of Hood's magmatic system; (5) glacier-volcano interactions; (6) recently discovered evidence of latest Quaternary surface faulting; and (7) geophysical monitoring. Most stops will be along roads, but there may be a moderate hike.



Figure 1 Mount Hood in Oregon



Figure 2 Image from Oregon State Parks, Lower South Falls

Field Trip #2: Friday, June 29, 2018

Destination: Silver Falls State Park

Trip Leaders: Daina Hardisty, Beth Norman, & Ranger Matt Palmquist

The foot-hills of the present day Cascade Mountains hide the spectacular sandy beaches of the past, channels of past floods of lava and volcanic ashfalls all that tell stories of the past written in the stone. This field trip will take us to some seldom visited locations in the Cascade Foothills. A unique mineral

spring, a beach hidden by a forest, the site of one of our most recent earthquakes, and finally, the fantastic Silver Falls State Park! Silver Falls State Park, Oregon's largest state park, has one of the greatest concentration of waterfalls within a fairly small area along North & South Forks of Silver Creek. We will visit a few select sites at Silver Falls State Park. Most stops will be along roads, but at Silver Falls State Park there may be a few moderate hikes.



**National Association of Geoscience Teachers 19th Annual PNW Section Conference
June 27th-29th, 2018**

Early Registration Deadline: June 1
Late Registration Deadline: June 11
Abstract Deadline: May 18

Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

NAGT Member? Yes/No Name & Affiliation (for name tag):

Dietary Restrictions:

EVENTS	# of Guests	Early	Late	Student	K12
June 27 Conference @ Mount Hood Community College Includes abstracts, coffee breaks and lunch.	_____	\$25 _____	\$10 _____	FREE	FREE
Evening Banquet Bridgeside Restaurant 745 NW Wa Na Pa St Cascade Locks, OR 97014		Fee: \$30 per guest, no discounts			
	Total # of guests: _____	x \$30 each= _____			
June 28 Field Trip - Mt. Hood Includes transportation and lunch	_____	\$35 _____	\$10 _____	FREE	
June 29 Field Trip - Silver Falls State Park Includes transportation and lunch	_____	\$35 _____	\$10 _____	FREE	

TOTAL AMOUNT ENCLOSED: _____

Please **make checks payable to** NAGT-PNW Section
Mail check and registration form to:

Eriks Puris
 Portland Community College
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