



Winter 2015

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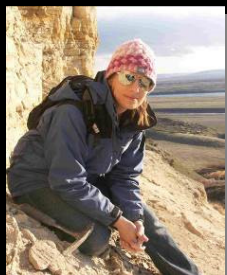
Anne Egger, CWU, Ellensburg, WA  
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## From the President

**Happy New Year!** For 2015, the PNW NAGT Section welcomes returning members, and many new members. Our first newsletter issue of the new year includes information on this year's annual conference in Victoria, BC, introductions to our new section officers, and upcoming opportunities around the PNW.

If you would like to contribute to a newsletter, please email  
cstrickland@columbiabasin.edu

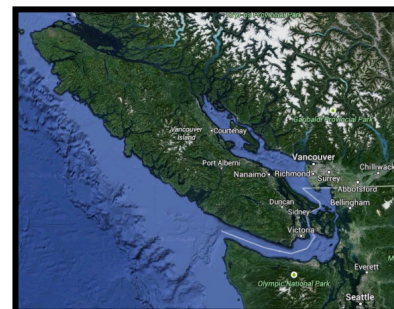
Also, remember to visit our website at [www.nagtpnw.org](http://www.nagtpnw.org)



## 2015 Pacific Northwest Section Annual Conference – Save the Dates!

**Camosun College/ University of Victoria  
Victoria, B.C., Canada  
June 15-20, 2015**

This year Dr. Tark S. Hamilton (Camosun College) and Dr. David Nelles (University of Victoria) will co-host the 2015 section conference, the third week of June. Join the adventure on beautiful and geologically intriguing Vancouver Island. Field trips will highlight the incredible geology of the island, including the Wrangellia terrane, the Upper Cretaceous Nanaimo Group and the Paleogene Metchosin Igneous Complex (Farallon Plate), and the Sooke Formation. A special newsletter edition will be published specifically for the conference, later this winter.



**Check back often for website updates!**  
[www.nagtpnw.org/Victoria-2015.html](http://www.nagtpnw.org/Victoria-2015.html)



*Shoreface breccia facies of Eo-Oligocene Sooke  
Formation. Shirley, B.C.-by D. Donnecke*



### Geological Society of the Oregon Country

Sheila Alfson, President, GSOC

I'd like to invite all of you (and anyone else who may be interested) to GSOC's annual banquet. This is our 80<sup>th</sup> year supporting Geology in the Pacific Northwest and we are celebrating with a look at the past. **Tanya Atwater** will be our guest speaker on the development of Plate Tectonics. Please join us and spread the word to other interested parties.

For more information, download this pdf:

[Geological Society of the Oregon Country](http://www.nagtpnw.org/Tanya_Atwater_GSOC_Banquet_poster.pdf)

[www.nagtpnw.org/Tanya\\_Atwater\\_GSOC\\_Banquet\\_poster.pdf](http://www.nagtpnw.org/Tanya_Atwater_GSOC_Banquet_poster.pdf)

### 2016 Annual PNW NAGT Conference, Hell's Canyon, Yes or No?

Cassie Strickland, Section President

**Andy Buddington** of Spokane Community College and **Keegan Schmidt** of Lewis & Clark College have graciously volunteered to host a field-oriented annual conference. Unlike traditional PNW NAGT conferences, this proposed meeting would take place inside Hell's Canyon and vicinity, and require multiple changes of evening accommodations. Camping and local motel options (when available) are being considered. Because this is a time consuming logistical under-taking, Andy would like for all members to weigh in on their preferences, by using this survey:

[www.nagtpnw.org/Survey.html](http://www.nagtpnw.org/Survey.html)

Please take the time to follow the link now, and answer a brief set of questions. Thank you!

### SAGE 2YC regional workshop: Connections: Building a Geoscience Community that Engages and Supports Students

Eriks Puris, Portland CC, & Deron Carter, Linn-Benton CC

A one-day workshop sponsored by SAGE 2YC/NAGT will be held Saturday, May 2<sup>nd</sup>, 2015, at Linn-Benton Community College in Albany, OR. This workshop is free, but registration is required. A website is under production; in the meantime, here is the link to last year's workshop: <https://serc.carleton.edu/sage2yc/studentsuccess/local2014portland/index.html>

For more information, contact **Deron Carter** at [carterd@linnbenton.edu](mailto:carterd@linnbenton.edu), or **Eriks Puris** at [eriks.puris@pcc.edu](mailto:eriks.puris@pcc.edu)

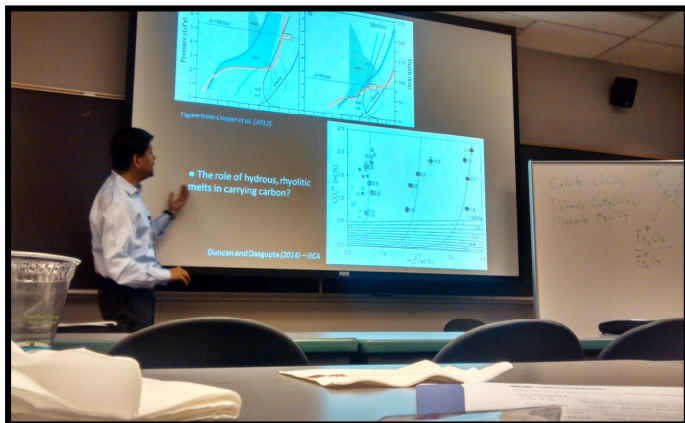
### 2014 GSA Vancouver: A Recap

Frank Hladky, Section VP

For anyone who hasn't been to a Geological Society of America annual meeting in a while, as I haven't, or ever, they are stunning geological professional spectacles. I made the excuse to leave school for a week to go to Vancouver, BC on the argument of professional development and the fact that GSA had chipped in an OEST grant from 2011. Over the last few years, I've had a supportive administration for which I am grateful.

GSA annual meetings are so large, with upwards of 6,000 participants, that each individual's experience is but a token snapshot of the whole. All that I can offer is my own necessarily restricted view. There are some commonalities for almost everyone, however: the opportunities for field trips, for world-class short courses, a wide-range of sections and topics, big-city amenities and what goes with that, and perhaps most rewarding, the chance to renew old friendships and foster new ones.

While I was at GSA, I took a short course by **Robert Hazen** on deep carbon. If you haven't followed Hazen and the Deep Carbon Observatory, you may be missing the next great revolution in geology. We're talking about deep carbon, as in all the way to the core. Now admittedly, much of the empirical evidence gets scant the deeper you go, and it may involve way too many phase diagrams, but the implications are as vast as the mantle is voluminous for changing the way we think about cosmology, first minerals (nano-diamonds), the evolution of minerals, planetary differentiation and tectonics in deep time. It's mind boggling stuff. Truly the stuff that gets people thinking deep thoughts! Pun-intended.

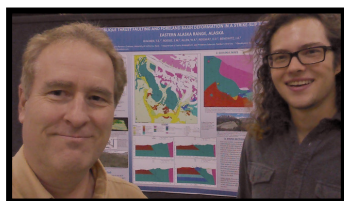


Although I wandered in and out of various sections, from big ideas in geology, to paleontology, to Cascadia, to space probe impacting comets, to a special session dedicated to **Eric "No More Lousy PowerPoint Slides" Cheney**, I spent some time in the geoscience education sections. Some interesting thoughts were promoted including one speaker who talked up how many geologists are now trained mainly in virtual techniques—a far cry from "the best geologist is the one who's seen the most rocks" spoken of in the historical geology section. I saw a talk that documented the gender gap as portrayed by the illustrations found in introductory college geology textbooks—the solution was revealed when we found out that the author had no intent of



accosting the publishing houses but to write her own textbook. Very enterprising!

The Vancouver GSA meeting, though certainly not as intimate as our Pacific Northwest Section meetings, gave me an opportunity to rub shoulders with our National Association of Geoscience Teachers counterparts like Carol Ormand and John McDaris based out of the Science Education Resource Center (SERC). It was particularly rewarding to see one of our own PNW section members Dale Lehman receive the section Outstanding Earth Science Teacher award for 2014 at the awards luncheon. I got to see that because of our unforgettable **Andy Buddington**—thanks! Along the way I ran into our section secretary **Scott Linneman**, former president **Ralph Dawes**, the veritable **Pat Pringle**, the **Teppers**, and, of course, I got **Tarked**. I also ran into **Nick Zentner**, a former ISU colleague of mine, from last year's Wenatchee meeting, and also a host of former colleagues. Perhaps most rewarding, however, was to spend some time with a former high school student of mine, **Trevor Waldien**, a GSA presenter and current grad student at UC Davis (pictured left).



We go away to meetings like this to get away and get professionally

reinvigorated. By the end, we're tired but satisfied and perhaps a bit nostalgic as we look back in our rear-view mirrors as we head back to the grind. But then, we bring back a lot of stories and materials to share with our students, who, more often than not, get a kick out of having their teacher come back and share stories from a world-class meeting. And should we get a bit fatigued in the months ahead, we can always look forward to our next section meeting, anticipating being with our friends in the field. See you in Victoria!

### 2014 PNW NAGT Conference Highlights Wenatchee, WA

*C Strickland, text, Ken Sutton, photos.*

2014 marked the 16th Annual Section Conference. Seasoned conference hosts **Dr. Ralph** and **Cheryl Dawes** (the Dawes hosted in 2004, and again this year) welcomed us to Wenatchee the third week in June. The weather was fantastic, the venue lovely, and the field trips packed with a diversity of geology and information.

Trip leaders/destinations included **Ralph Dawes** and **Jeff Tepper** (Blewett Pass Geology), **Nick Zentner** (w/Ralph for the Ice Age Geology of the Wenatchee Valley), **Brent Cunderla** and **Jon Reidel** (w/Ralph for the Glacial Geology of Lake Chelan), and **Jack Powell** and **Karl Lillquist** (Geology of Odessa, Soap Lake, Wilson Creek and Crab Creek area).

**Ken Sutton's** photos of the trips can illustrate the success of the conference best. Here are a few of my favorite photos; for the full album, with images from each day, please visit:

[www.nagtpnw.org/Wenatchee-Conference-Pictures.html](http://www.nagtpnw.org/Wenatchee-Conference-Pictures.html)



*Ken Sutton, near Soap Lake, Field Trip 4.*

*The 3 Scotts: left to right, Babcock, Linneman & Burns, above the Columbia river, Wenatchee.*



*Sheila Alfson, Bill Orr and Frank Hladky, Camas Sill Outcrop near Cashmere, WA.*



*Participants on a field trip....at a winery. Lake Chelan.*



*Hiking up a Missoula Flood erratic above Wenatchee Field Trip #2.*



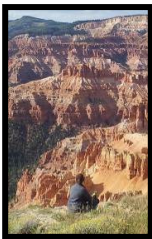


## Meet the PNW NAGT Officers!

*C. Strickland, Columbia Basin College*

This section relies on volunteers to be a success. We'd like to thank all members who have graciously volunteered to serve. Thanks to you, we have one of the most prominent NAGT sections in North America! In our most recent election (summer, 2014), we welcomed back several incumbents. We also have several 'new' officers, although they are most definitely not new to our section.

**Cassie Strickland, President.** Cassie has been an active NAGT officer since 2000, first serving as newsletter editor for a decade, before becoming VP for Ron Metzger. President is not an elected position; VP automatically moves up to President. Cassie, a structural geologist with a secret passion for fossils and horses, teaches at Columbia Basin College, in Pasco, WA, and lives in Ellensburg, WA.



**Frank R. Hladky, Vice President.** Frank currently holds faculty positions at Coquille High School (teacher) and Southwestern Oregon Community College (adjunct). He teaches Geology 201, 202, and 203 for advanced high school students. With several published geologic maps in Oregon and Idaho to his credit, he particularly enjoys teaching students field methods. He is an Oregon registered geologist, a member of the Geological Society of America, and is currently serving as PNW NAGT section vice president.



**Scott Linneman, Secretary/Treasurer.** Scott Linneman is Professor of Geology and Science Education at Western Washington University in Bellingham WA. Scott's earned a B.A. from Carleton College (MN) and a Ph.D. from the University of Wyoming, studying igneous systems. His current professional interests include landslides and their downstream impacts, pre-service teacher science education, and the educational uses of the time-lapse videos. Scott has served the NAGT Executive Committee as a Counselor and President.



**Jodie Harnden, OEST Co-Coordinator.** Jodie Harnden is a 7-8th grade science teacher in Pendleton, Oregon. She has taught science for 30 years. Jodie also teaches geology through the local community college. While she has memberships in several professional organizations, NAGT is one of her favorites, because "geology people are the best!"



**Cathy Connor, Alaska State Co-Councilor.** Connor earned an M.S. in Geology at Stanford University, CA in 1975 and a Ph.D. in Geology at University Montana, Missoula in 1984. She has taught university courses in geology through the U.S. Peace Corps in Malaysia, and mapped regions all over Alaska for the former Branch of Alaskan Geology of the USGS based in Menlo Park, CA and in Anchorage AK. She retired in 2014 as a tenured

professor at the University of Alaska Southeast in Juneau, AK teaching undergraduates, graduate students and educators for 24 years through the Natural Sciences Department. Her research includes Quaternary studies in San Francisco Bay, CA, Kuala Lumpur, Malaysia, the Copper River basin, AK, and Glacier Bay National Park, AK.



She has been a member of NAGT since 2000 or so and very much enjoys interacting with its fine membership, especially on field expeditions from the Tatshenshini River British Columbia to Wenatchee, WA outcrops. Her newest edition of the Roadside Geology of Alaska published by Mountain Press publishing was inspired by NAGT expeditions.

**Michael Collins, Alaska State Co-Councilor.** Michael is a Health, Safety, and Environmental Manager for an Alaska Native Corporation. He has a B.S. in Geology and B.S. in Science Education from Oregon State University. Michael has taught high school geology, chemistry, meteorology, mathematics, environmental science and geology classes at Alaska Junior College. He has also worked as a mud logging geologist in Cook Inlet, as a geologist with the Unocal Alaska Exploration Department, and as an environmental geologist with an Alaskan engineering company. Michael previously served as Section Co-President and Councilor-At-Large and has been a NAGT member since 1994.



**Brett Gilley, British Columbia Co-Councilor.** Brett is an Instructor at the University of British Columbia. He completed his Masters in Earth Science at Simon Fraser University, British Columbia, and immediately became involved in running teaching workshops, designing courses, and alternately inspiring and scaring students. He has taught at more post-secondary institutions in the Vancouver area than he cares to admit and has been part of the PNW section of the NAGT for over 10 years.



**Tark Hamilton, British Columbia Co-Councilor.** Tark Hamilton teaches 1st and 2nd year Geoscience courses in the Department of Chemistry and Geoscience at Camosun College, Victoria, B.C. where he incorporates field trips into all of his courses. Active research and publications focus on paleoseismic records, gas hydrates, physical properties of rocks and petrology with colleagues at the Geological Survey of Canada and internationally. Ph.D. 1980 in Geology and Geophysics from University of Alberta, Masters in Geology at Indiana University 1974, B.Sc. Case Western Reserve University 1973. Active memberships and registration: P. Geoph. Alberta, P.Geo. B.C., A.G.U., G.A.C., G.S.A., N.A.G.T.



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**Todd Redding, British Columbia Co-Councilor.** I teach in the Department of Geography, Earth and Environmental Science at Okanagan College in Penticton, British Columbia. I teach introductory courses in physical geography, earth science, environmental science and atmospheric science. My background is in the hydrology and soils of forested montane and boreal landscapes. More information about me and my research is available from:

<http://ocwatershedscience.weebly.com/> To learn more about the geology and landscape of the south Okanagan Valley, please visit: <http://okanaganlandscape.weebly.com/>



**Shawn Willsey, Idaho State Co-Councilor.** Shawn Willsey is Professor of Geology at the College of Southern Idaho, a licensed professional geologist, and a rock climbing and whitewater rafting instructor. He enjoys explaining geology to the general public through a variety of outdoor settings including river trips and Road Scholar programs. He is currently writing a book, "Geology Underfoot in Southern Idaho," which engages readers to explore the landscape or rocks of over twenty unique locations in Idaho. Shawn has served as NAGT State Councilor for Idaho since 2015 and hosted the 2010 NAGT Pacific Northwest Field Conference. He is married with three children and lives in Twin Falls.



**Frank Granshaw, Oregon State Co-Councilor.** After recently retiring from a quarter of a century teaching earth science at Portland Community College, I've moved into a new career teaching mainly environmental science at both PCC and Portland State University, as well as spending more time with glacier, climate, and service-oriented fieldwork related curriculum projects here in the Pacific Northwest. In addition to having been an NAGT member since 2000, I'm active in Geo2YC (a founding member and current webmaster) and part of the local team involved in leading SAGE 2YC workshops in Oregon.



**Eriks Puris, Oregon State Co-Councilor.** I have been teaching earth science (geology, oceanography, meteorology, and astronomy) full time at Portland Community College since fall 2004 and attended my first PNW section NAGT meeting summer of 2005 in Coos Bay. I am currently involved in leading local SAGE 2YC workshops for the Portland area and integrating research experiences into my course work.



**Ron Metzger, Oregon State Co-Councilor.** I am in my 19th year on the faculty at Southwestern Oregon CC in Coos Bay. After graduating from St. Lawrence I attended University of Iowa working mostly on Devonian Conodonts for MS and PhD so have an emphasis in Biostratigraphy/ Micropaleontology. At SWOCC I am able to lead a number of undergraduate field classes in addition to the standard classroom courses. I've been involved with NAGT for about 15



years, most recently as section President.

**Beth Norman, Washington State Co-Councilor.** Beth Norman is a Professor of Earth Sciences at Pierce College where she teaches courses in geology, oceanography and environmental science. Her academic background includes a BS in earth science from Portland State where she completed a senior thesis on the Columbia River Basalts in Silver Falls State Park in Oregon, a wonderful place to visit. She has an MS in geology from the University of Utah on the tectonics of the Klamath Mountains in California. Her goal is to inspire in students a sense of wonder about the natural environment around them just like NAGT field trips inspire her.



**Jeff Tepper, Washington State Co-Councilor.** Jeff Tepper is a petrologist / geochemist at the University of Puget Sound. His research focuses on the magmatic history of the Pacific Northwest and on the environmental history of the Puget Sound area as recorded in lake sediments.

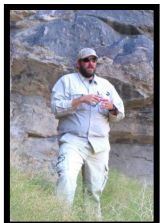


**Anne Egger, NAGT National Executive Committee Liaison for the PNW NAGT Section.** Anne Egger is an assistant professor at Central Washington University, where she holds a joint appointment in Geological Sciences and Science Education. This joint appointment reflects her research interests: her geologic research is focused on the tectonic development of the western margin of the Basin and Range province, and her geoscience education research is focused on developing curricular materials that incorporate societal issues, data, and geoscientific thinking. She is particularly interested in emphasizing the connections between research and education at all levels: incorporating scientific research results into science classes, reforming teaching based on scientific results, and involving students in authentic scientific experiences. She is currently second vice-president at NAGT.



**Dean Garwood, Idaho State Co-Councilor.** Dean Garwood is an Adjunct Faculty of Geology at Spokane Community College. He is involved with the Ice Age Floods Institute (Coeur du Deluge chapter) where he and former Idaho State Geologist, Roy Breckenridge, convey geology to the general public through a variety of field trips and public lectures.

Dean recently moved to Post Falls, ID after working for 11 years as Senior Geologist for the Idaho Geological Survey at the University of Idaho in Moscow, ID. His focus at the survey was geologic mapping and earth science education.



Dean has served as NAGT State Councilor for Idaho since 2013 and led field trips for the 2010 NAGT Pacific Northwest Field Conference in Twin Falls.

Biographical info unavailable at press time. Look for future updates for: **Lynda Sanders, OEST Co-Coordinator.**



### Outstanding Earth Science Teacher Award: Call for Nominations

Jodie Harnden, OEST Coordinator

It is time again! Do you know of an outstanding, creative, and dedicated science teacher who either teaches Earth Science courses or teaches Earth Science as part of the science curriculum? Nominations for the OEST award from PNW NAGT! Elementary and secondary level nominations are welcome.

The form is simple and requires only the nominee's email and a brief description of why this teacher is deserving. Contact will be made with the nominee for additional information. Nominees from Alaska, Idaho, Oregon and Washington are welcome (other states should connect with their regional NAGT).

If you have questions, contact Jodie Harnden at: [Jodie.harnden@pendleton.k12.or.us](mailto:Jodie.harnden@pendleton.k12.or.us)

### GeoScience Teacher-in-the-Parks Mount Rainier NP Applications Available

Erica Zweifel, Project Manager, SERC

Mount Rainier National Park will sponsor summer internships for two classroom teachers during the summer of 2015. Two successful candidates will spend 8 weeks at Mount Rainier working alongside park scientists as they examine the park's landscape response to climate change and increasing threats to park infrastructure.

The major research projects for the 2015 season include:

- Survey river cross sections and longitudinal profiles and compare to surveyed data with previous studies to analyze topographic change due to sediment transport.
- Maintain and compute discharge measurements at stream gaging stations, including the development of a standardized rating curve.
- Assist park scientists in surveying landscape response from debris flows and outburst floods on Tahoma Creek to determine the viability of park infrastructure in that location in the future.
- Topographically survey the Nisqually Glacier to determine extents of stagnant and active ice as well as determine seasonal velocity trends on the glacier.
- Document floods, debris flows, and other geologic/geomorphic events as they occur.
- Assist with "forensic" geomorphology of recent destructive debris flows and other geologic events to identify triggering mechanisms – There is substantial evidence of increased debris flows associated with glacier melting and climate change.

**The due date for applications is Tuesday, March 31, 2015.**

Prior to starting this position, a government security background clearance will be required. Two candidates will be stationed at Mount Rainier and provided housing at no cost. Selected teachers will receive a \$3,000 stipend and an opportunity to attend the

National Park Service and United States Geological Survey "Living with a Volcano in your Backyard" teacher workshop.

To apply, please fill out the application found at the following website:

[www.nps.gov/mora/forteachers/development/development-opportunities.htm](http://www.nps.gov/mora/forteachers/development/development-opportunities.htm)

If you have questions or require more information, please contact Scott Beason, Park Geologist at Mount Rainier at (360) 569-6781, or email: [scott\\_beason@nps.gov](mailto:scott_beason@nps.gov)

*The GTIP program is supported by the National Association of Geoscience Teachers (NAGT)*



### Cascadia Hazards Institute

Anne Egger, CWU

The Cascadia Hazards Institute ([www.cascadiahazards.org](http://www.cascadiahazards.org)) was established at Central Washington University in 2012, with a mission to advance and support interdisciplinary research and education about Cascadia hazards in order to improve public safety and business resilience in the Pacific Northwest.

Over the past two years, CHI has established a strong presence on campus by coordinating the development of hazards-related undergraduate courses, offering round-table discussions to bring faculty from different disciplines together around topics of common interest, and by hosting a conference on Seismic Hazards and the Built Environment that included attendees from regional schools and governments.

Off-campus, CHI has connected faculty with state and local agencies, facilitating projects such as GPS monitoring of active and incipient landslides in conjunction with Washington's Department of Natural Resources in the wake of the March, 2014, Oso landslide, adaptation strategies for sea-level rise, and other natural hazards activities.

CHI is a unique entity on the CWU campus, offering opportunities for both CWU faculty and students, as well as faculty from community colleges, regional colleges and K-12 schools throughout the Pacific Northwest to work with others outside their departments, explore interdisciplinary research and teaching, and connect their work with regional policy-makers.

## Engaging Students in Research

Pat Pringle, Centralia CC

In classes I've talked about the use of dendrochronology, or tree-ring research as a tool to reconstruct past climate, episodes of drought, help in radiocarbon dating efforts, and better constrain the timing of geologic events such as volcanic eruptions, earthquakes, and landslides. Since 2010 or so, a handful of students have expressed an interest getting involved in research projects using tree rings. **Colleen Suter** and **Christina Williams** approached me about working on a project during the summer of 2012, so we took off to the southwest Washington Cascade Range near, and south of Packwood to visit a couple landslide-dammed lakes and other sites. We spent two days doing reconnaissance, hiking, and collecting samples, both coring trees and collecting samples of rocks and volcanic ash. Colleen took the lead on this particular project and showed skills both as a field scientist, but also in analysis of the samples and in writing the initial drafts of the abstract and poster that was ultimately presented at the 2013 Northwest Scientific Association Annual Meeting in Portland.

This past year **Garret Marlantes** became involved in a project that **Karl Wegmann** had started in 2003 coring the subfossil trees in Irely Lake near Lake Quinault. Garret also took the initiative in draft writing and presented an excellent poster at the GSA meeting in Vancouver. He is now working on some subfossil trees from within a small lake atop the Red Bluffs landslide in the Columbia Gorge.



Garret Marlantes investigates a subfossil western redcedar snag in the dry bed of Irely Lake, August 2014.

At past NAGT and GSA meetings I've mentioned some of the challenges of engaging students in research projects, but those challenges aren't insurmountable. I've been able to get small amounts of money for use in radiocarbon dating and for purchasing increment borers, sandpaper, and so on via several grants. **Karen Goodwin**, a chemistry instructor at Centralia, initiated a Capstone Research poster session at the college in June of 2013, and we've had tens of students presenting posters or demonstrations at the first two Capstone events. Students, faculty, staff, and administrators including the college President and Board of Trustees members have attended these sessions, and that has helped to spread the word on how capable community college students can be in tackling research projects. The college foundation has taken an interest in supporting student research. I've featured several of the student research projects on the Earth Sciences web page at Centralia College:

[www.centralia.edu/academics/earthscience/dendro/undergrad\\_research\\_in\\_earth\\_sciences\\_at\\_Centralia-College.html](http://www.centralia.edu/academics/earthscience/dendro/undergrad_research_in_earth_sciences_at_Centralia-College.html)

## State-by-State (State-by-Province):

British Columbia, Yukon, Idaho, Oregon & Washington

Upcoming events/opportunities submitted by our state councilors.



### British Columbia

Brett Gilley, Tark Hamilton, and Todd Redding, Province Councilors

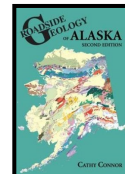
- ★ Presentation: "Vineyard Soils of the South Okanagan: Defining the Okanagan Terroir", Scott Smith, March 30, 2015, Okanagan College, Penticton. Details: <http://ocspeakersseries.weebly.com/30-march---vineyard-soils-of-the-south-okanagan-defining-the-okanagan-terroir.html>
- ★ **Mineral Exploration Roundup 2015**, January 26-29, 2015, [www.amebc.ca/roundup-2015-home](http://www.amebc.ca/roundup-2015-home)
- ★ **New Publications on Okanagan Geology:**
  - Roed, MA et al. 2014. **Evidence for an early Pleistocene glaciation in the Okanagan Valley, southern British Columbia.** Canadian Journal of Earth Science. 51:125-141
  - Fensome, R. et al. (eds.). 2014. **Four Billion Years and Counting: Canada's Geological Heritage.** Canadian Federation of Earth Sciences. [www.fbycbook.com](http://www.fbycbook.com)
  - Roed, M and Greeough, J (eds). **Okanagan Geology, 3rd Edition.** Okanagan Geology Committee. The newest edition is now for sale, and will be available at Amazon.
  - Tannant, DD and Skermer, N. 2013. **Mud and debris flows and associated earth dam failures in the Okanagan region of British Columbia.** Canadian Geotechnical Journal 50(8):820-833.



### Alaska

Cathy Connor, Michael Collins, State Councilors

- ★ **Roadside Geology of Alaska**, by Cathy Connor. New Edition released. [www.adn.com/article/20150111/reading-north-second-look-alaskas-fascinating-geology](http://www.adn.com/article/20150111/reading-north-second-look-alaskas-fascinating-geology)
- ★ **Juneau Icefield Research** Program now accepting students. For more information, go to: [www.juneauicefield.com](http://www.juneauicefield.com)
- ★ **UAF Geology Field Camp 2015:** [www.geosociety.org/Sections/cord/2015mtg/](http://www.geosociety.org/Sections/cord/2015mtg/)
- ★ **Sally Ride EarthKAM (Earth Knowledge Acquired by Middle school students)** is a NASA educational outreach program that enables students, teachers, and the public to learn about Earth from the unique perspective of space. During Sally Ride EarthKAM missions (periods when the Sally Ride EarthKAM camera is operational), middle school students around the world request images of specific locations on Earth. The entire collection of Sally Ride EarthKAM images is



*Continued from previous page....*

available in a searchable Sally Ride EarthKAM image archive. This image collection and accompanying activities are extraordinary resources to engage students in Earth and space science, geography, social studies, mathematics, communications, and art. More info on signing up for a mission and photography opportunities at: [www.earthkam.ucsd.edu](http://www.earthkam.ucsd.edu)

- ★ The **American Meteorological Society (AMS)** Education Program promotes the teaching of atmospheric, oceanographic, and hydrologic sciences through pre-college teacher training and instructional resource material development. It also promotes instructional innovation at the introductory college course level, hence the K-13 designation for the program. All programs promote activity directed towards greater human resource diversity in the sciences AMS represents. There are multiple opportunities for various summer programs that fully funded including all airfare, stipend, lodging and university credit. More info is at: [www.ametsoc.org/amsedu](http://www.ametsoc.org/amsedu). March 2015 deadlines apply!

- ★ **2015 Alaska Geographic Field Courses.** Note: Registration opens at 3pm, January 12th for Alaska Geographic members and 3pm, January 13th for all. Alaska Field Courses Are For Teachers Too! Each year teachers help Alaska Geographic connect youth with our amazing public lands. Come share methods, tools, and curriculum with other teachers. All courses provide 1-3 professional development credits from the University of Alaska. Scholarships are available for teachers attending courses in Denali National Park and Preserve. The courses that are exclusively designed for teachers are:

- **Exploring Prince William Sound: Sea Kayaking Course**, Chugach National Forest, June 11-17.
- **Climate Change: Seeing, Understanding, and Teaching**, Denali National Park & Preserve, June 29 - July 2.

- ★ **Exploratorium Teacher Institute** (June 21-July 16; Deadline April 1). This is where I cut my eyeteeth in hands-on inquiry learning and I can't recommend it enough. These institutes are the best 4 weeks you'll ever have, and you'll become part of a vibrant and intelligent set of science and math teachers. If you want to know more about what you might be getting into, listen to the podcasts that I made about the institute on the bottom of the page.

Information: [www.exploratorium.edu/education/teacher-institute/summer](http://www.exploratorium.edu/education/teacher-institute/summer)

- ★ **Cordilleran Section of Geological Society of America in Anchorage**, May 11-13th. Great field trips. Nice time to visit Alaska. Abstracts being accepted now at:

[www.geosociety.org/Sections/cord/2015mtg/](http://www.geosociety.org/Sections/cord/2015mtg/)

- ★ **Girls on Ice ([www.girlsonice.org](http://www.girlsonice.org))**. Girls on Ice is a unique, FREE, wilderness *science* education program for high school girls. Each year two teams of 9 teenage girls and 3 instructors spend 12 days exploring and learning about mountain glaciers and the alpine landscape through scientific field studies with professional glaciologists, ecologists, artists, and mountaineers. One team explores Mount Baker, an ice-covered volcano in the North Cascades of Washington State. The other team sleeps under the midnight sun exploring an Alaskan glacier. **Alaska program:** June 19 – 30, 2015; **North Cascades program:** July 13 – 24, 2015.



### Idaho

*State Councilors: Shawn Willsey and Dean Garwood*

- ★ Jan 28-29, 2015: **Idaho Groundwater Association Annual Convention**. Boise, Idaho. [www.igwa.info](http://www.igwa.info)



### Oregon

*Frank Granshaw, Ron Metzger and Eriks Puris, State Councilors*

- ★ The **geology lectures here at SWOCC** are being LiveStreamed (and many are now archived as well). The next one is **Dave Jewitt (UCLA)** on **"Death From Space"**. He's a leading planetary researcher. Livestream can be accessed from [www.socc.edu](http://www.socc.edu).



### Washington

*Beth Norman and Jeff Tepper, State Councilors*

- ★ In April, the 3rd **South Sound Undergraduate Geoscience Research Symposium** will be held in Tacoma. This is an excellent venue for undergraduates to present research they have conducted for class assignments, independent study projects or senior theses. It is also a good opportunity to learn what other geology students are doing around the state. Details about the date and location, as well as guidelines for submitting an abstract will be available in the near future.

**Visit The PNW NAGT Section on the WEB**

[www.nagtpnw.org](http://www.nagtpnw.org)

**And on Facebook**

[www.facebook.com/groups/150216048427579](https://www.facebook.com/groups/150216048427579)