



## Association for Women Geoscientists

Puget Sound Chapter  
[www.awg-ps.org](http://www.awg-ps.org)

Spring 2005

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### **Message from the Editor:**

Hello everyone... welcome to another AWG-PS newsletter. We have a lot of exciting events scheduled for the summer and the rest of the year and have even started planning for next winter. We hope you find this information useful and we welcome any comments, suggestions and additions to future newsletters.

Shawn Blaesing-Thompson  
AWG-PS Publications and Scholarship Chairs  
and Web Mistress

### **Message from the President:**

Greetings from AWG-PS chapter president.

On May 1<sup>st</sup> the third Board meeting of the fiscal year was held in Littlerock, WA. The agenda included several items that are stepping through the process from inception to reality. I'll only mention a few here.

In particular, we reviewed the teacher survey that was prepared by Paula York for distribution to teachers at selected middle schools. The survey is designed to obtain information about how our organization can best serve educators, and enhance their abilities to encourage young girls to explore careers in the geosciences. The responses from this survey should help direct us in achieving this goal.

We now have a Puget Sound chapter roster that includes education and area of interest or specialty of the members. This information indicates the great breadth and depth of professional experience that the chapter carries. I plan on contacting all the members

individually through the summer to find out what you like about the chapter and what the chapter can provide you as a member. We need your input and your active support, and are looking for members to volunteer for several offices on the board. These vacancies are opportunities to become more active chapter activities. The time will be rewarding and well invested while supporting the chapter and broadening our experience base.

Take a look at the AWG-PS webpage and give us comments.

[www.awg-ps.org](http://www.awg-ps.org)

We are looking at the National AWG speaker list to select a speaker. Let us know which speaker you would like to meet, and hear a talk from this next year.

[http://www.awg.org/AWG\\_PPDLP/](http://www.awg.org/AWG_PPDLP/)

Plans for future chapter activities to put on your calendar include:

A mid-September coastal central Oregon field trip; an Oktoberfest (Oct 8<sup>th</sup>) to kick off the new fiscal year; introduce new officers and outreach programs and bring chapter members and families together for a BBQ. It is refreshing to informally meet up with professional colleagues/friends to kick back, relax, have fun and catch up on life.

Hope the spring and summer is great for you.

Sincerely,  
Lynn J. Moses  
President, AWG-PS

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**Upcoming Events:**

**AWG-AEG jointly sponsored dinner meeting**

May 19, 2005

The Vault in Tacoma

Time: 5:30 - Social Hour, 6:30 - Dinner, 7:30 – Program

Cost: \$25/\$30 with/without reservation, \$10/\$15 for students, \$5 for talk only

**RSVP to [diane\\_o'leary@urscorp.com](mailto:diane_o'leary@urscorp.com) or phone at 206-438-2380 by 4:00 pm on Monday May 16, 2005, must RSVP for a meal even if after the deadline.**

**WSDOT's Unstable Slope Management System**

**Lynn J. Moses, Assistant Chief Engineering Geologist, WSDOT**

In 1993, the Washington State Department of Transportation (WSDOT) developed the Unstable Slope Management System (USMS) to address known slope hazards adjacent to WSDOT's 7,000 miles of highway system.

The objectives are to rationally evaluate unstable slopes, perform early scoping conceptual design for mitigation and project cost estimation, conduct cost-benefit analysis, and prioritize the mitigation of known unstable slopes according to the expected benefits. The USMS database tracks over 2,700 unstable slopes. This interactive system is used statewide to support priority programming for unstable slopes. The preservation program has a \$300 million budget over a 20-year program life as identified in the State Transportation Plan.

The USMS database was one of WSDOT's first interactive systems using Internet technology. The application and database is designed for all participants in the unstable slope management process to view and enter data for unstable slopes. The USMS includes a rational numerical rating matrix that addresses instability by type and severity for both rock and soil slopes, with consistent numerical ratings for both hazard types. The remaining categories in the rating matrix are dedicated to establishing risk factors to the highway facility. The history of each unstable

slope is managed by means of site photos, archived numerical ratings, conceptual designs, adding appropriate notes about the site, etc.

**Crafty Geoscientists Days** in the works. We have three volunteers to host crafty days for jewelry making, knitting/crocheting, and cooking (making great soups) so keep an eye on the website and your email if you are interested in any of these topics as dates will be posted soon.

**June 25<sup>th</sup>, 2005 – Littlerock, WA - Lynn Moses** has graciously offered to take us through the makings of an excellent soup. What comes when in the process and different broths. The board members would all agree that she knows what she is talking about when it comes to soup. Bring your favorite recipe to share (doesn't have to be a soup.) More details to come over email and the website.

**Oregon Coast Field Trip** is tentatively scheduled for either the **second or third weekend in September**. It should be a 4-day trip, focusing on the mid-Oregon coast, from the Newport area to the Florence area with the occasional rock shop or brew pub along the way. It may be offered as a Regional field trip, if we can recruit someone to organize transportation from the Bay area.

**October Fest is scheduled for October 8<sup>th</sup>**. It will be at Lynn Moses (our chapter president's) house in Littlerock to kick off the new fiscal year and introduce new officers and outreach programs. The chapter will spring for beer, wine, hot cider, bratwurst to grill and hot pretzels. Bring a friend, a dessert, and/or an AWGF donation. This will be either a strictly social event, or we may ask Mei Mei Wang to come up from Portland to tell us about DOGAMI's tsunami work. We will also have another mini- Mima Mounds field trip. Free lodging is available for those in need.

**December 3 (tentative)** – We'll have another **Geofilm Fest / 21<sup>st</sup> anniversary party / scholarship award meeting**. Please let Marcia know if you have film suggestions.

Also, next winter we are hoping to bring in someone from the AWG Speakers list to present at a joint NWGS meeting probably in winter of 2006 so we will keep you posted.

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**Announcing and Open House: US Geological Survey Cascades Volcano Observatory (CVO)**

Where: USGS-CVO Bldg 10; Suite 100; 1300 SE Cardinal Ct. Vancouver WA 98683 (see website for map and directions)

When: Saturday May 21st From 10:00am until 5:00pm

More information is available at [http://vulcan.wr.usgs.gov/CVO\\_News](http://vulcan.wr.usgs.gov/CVO_News)

Meet and talk to scientists and staff. View demonstrations and exhibits. Learn more about the volcanoes in our backyard!

Children are welcome. Many teachers and families have expressed interest in visiting USGS-CVO, but we are usually too busy to provide tours. This open house is intended to address that need. This has been an exciting year for volcanophiles in the Pacific Northwest. Come visit us!

Carolyn L. Driedger  
Hydrologist/Outreach Coordinator

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**Call for Officers and Project Leads !!!!!**

We have two positions for elected/nominated officers available and are taking nominations for Treasurer and Scholarship Committee Chair. Information on these two positions can be found at: <http://www.awg-ps.org/officers.html>

We are also looking for volunteers to take a more active roll to help us meet some of our chapter goals.

The first position would be the **Grant Program Lead** who would facilitate outreach, AWGF / Corporate / Other sponsors funds requests, and lead the distribution of grant funds to undergraduate student recipients. We are still developing this idea and want someone to help us build this program that would support undergraduate women in geosciences with project funding.

The second position is for **AWG-PS historian**. This person would help us collect information about our chapter's first 21 years, and organize and document future goings on.

The last position is for an **Outreach Coordinator** who will be responsible for working with regional high schools and colleges to help provide resources for teachers as well as students.

**To volunteer or for more information on any of these positions please contact any of the board members cited at the end of the newsletter.**

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**Book Reviews:**

**The Miracles of Exodus**, by Colin J. Humphreys, Harper, 2003/2004. 340 pages plus bibliography and suggested readings. Paperback edition \$15.95US.

"Being that you're into science-and-religion and volcanoes and stuff like that, I just found a book you're going to LOVE" My friend who said that was right. What a cool book! Take the first five books of the Bible, mix with large helpings of geology, biology, physics, weather patterns, cartography, geography, and ancient history, put it into the form of a true detective story, and get a clear (but controversial) picture of Moses and the exodus from Egypt.

The author's painstaking research gleaned from years of interdisciplinary studies in the Middle East and Africa sheds a whole new light on the business of ancient miracles. For instance, the real Mount Sinai was/is a volcano (I won't spoil the surprise by telling which one) in Arabia/Midian. And it's nowhere near the Sinai Peninsula and the non-volcanic mountain that currently bears the name.

Anyone who's taken Geology 101 will immediately recognize in Exodus 19:16-19 and 24:17 and Deuteronomy 4:11 a perfect description of an erupting volcano. So why haven't centuries of Biblical scholars recognized it? Because, says the author, they are all tied to the tradition that the non-volcanic mountain now called Mt. Sinai, on the Sinai Peninsula, is the one spoken of in the Scriptures.

Humphreys also takes on the theory that the "parting of the Red Sea" was due to a tsunami from the great eruption of Santorin/Thera. It sounds logical, but he argues that the revised timeline puts them too many years apart. However, the answer he does come up with is fascinating and provable from meteorological, rather than geological, history. There are many other clarifications that indicate the exodus was an actual, historical event and not just a piece of tribal mythology.

And me--I'm delighted to see a scholar agree with what I've assumed since childhood--that the original Sinai was volcanic. What better than an erupting volcano to "put the fear of God" into Moses and the Hebrews? (And I personally still think that the real Sodom and Gomorrah were wiped out by some kind of pyroclastic flow...but so far no one's proposed that yet.) There's much other historical research involved in the book; it's not all about geology. Right or wrong, it's the best detective story this writer has read in a long time.

Reviewed by Janet Tanaka

**"Out of the Crater; Chronicles of a Volcanologist"** by Richard Fisher (Aug. 8, 1928--June 8, 2002); published by Princeton Univ. Press in 1999. I found out about it just last fall from the IAVCEI newsletter.

Dick Fisher has left an inheritance for present and future volcano doctors. He's told his life story within the frame of his life's work. After some introductory background on volcanoes and how to study them, he devotes each chapter to an individual volcano and his experience with it.

Is it interesting? Is it good? Well, here's a warning: be careful about giving it to an impressionable young person. There is a real danger that she or he will take off and head for the nearest school of volcanology or the nearest volcano...and not necessarily in that order!

Reviewed by Janet Tanaka



## **Past Activities:**

### **Report on the March 26 Cougar Mountain Day Trip (Marcia Knadle)**

The Cougar Mountain day trip on March 26th was a brilliant success in the sense that it brought on heavy rain -- which was a good thing after such a dry winter! Fortunately, the predicted high winds didn't occur, so an umbrella worked fine except along the brushier trails. Attendance was pretty low, though -- just leader Betty Lyons, Pat Reed and myself.

Traffic was downright awful that morning, so there may have been people who tried to come but gave up on being able to get there in time to meet us, although we waited a half hour. (If you arrived after that, we apologize for missing you.) We had a good time wandering around looking at the coal mining historical displays and outcrops of Eocene Renton Formation. The trail down Coal Creek was especially interesting, looking at remnants of the timber box that once enclosed it so they could pile coal tailings on top. Of course, eventually it all failed, and the tailings and most of the timber box washed down stream several miles to Lake Washington. There's a pretty waterfall with about a 20' drop along there that was flowing spectacularly with all the rain, too. I thought it was a fun trip and well worth my time. I plan to go back in drier weather and explore the Cougar Mountain Regional Wildland Park some more.

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## **Science Fair Activities**

The follow are some of the Highlights from our Science Fair activities this year. If you recall from the previous newsletter we have branched out this year to cover the two regional fairs in our chapter area. Photos from the fairs will be posted on the website shortly at: <http://www.awg-ps.org/ScienceFair.html>

### **Judging at the Mid-Columbia Regional Fair in Richland (Elaine Brouillard)**

Our first place winner is Katherine Antoniak, with a project called "Tsunamis" an 8th grader from Christ the King School, in Richland, WA, received a book and AWG Certificate. The second place winner is Mary Ellen Gallant, on "Can a Landslide cause a Tsunami?", also from Christ the King School in the 6th grade.

### **Judging at the South Sound Regional Fair at PLU (By Shawn Blaesing-Thompson)**

On March 19<sup>th</sup> Paula York and Shawn Blaesing-Thompson judged at the South Science Regional Fair. Paula judged the elementary students in the morning, and both judged the Earth and Environmental Science high school age women for AWG-PS special awards.

1<sup>st</sup> place went to Ruth Rollefson, Washington High School on The Effect of Repeated Freezing and Thawing on the Torsional Strength of Soil. She looked at different types of soils, made soils bricks with set water and soil content. Then she froze and thawed the different bricks and applied gravitational pressures on each one to find the breaking point. She was amazed when we told her that women out in the real world soil, water and rock all the time. She received the book Geology Rocks.

2<sup>nd</sup> place went to Megan Durkin, Bellarmine Prep on the Loss of Open Space in Snake Lake Wetland. Megan used aerial photos, historical information and GIS to evaluate the loss of wetland habitat around Snake Lake in Tacoma. She received an AWG certificate of Accomplishment.

3<sup>rd</sup> place went to Melissa Surrett, Washington High School, on the Clover Creek Flow Analysis. Melissa looked at flow volumes/rates during different seasons along Clover Creek to see how the width and depth of the stream affected the flow of the water. She received an AWG certificate of Accomplishment.

**Judging at the WA State Science and Engineering Fair** (By Marcia Knadle)

On April 1-2, Paula York and Marcia Knadle judged entries in all grades at the Washington State Science and Engineering Fair in Bremerton. We gave 3 AWG awards, one in each of three grade group groups: grades 1-5, grades 6-8, and grades 9-12.

Grades 1-5 -- Lisa Yuodalis, a 4th grader from Kent, had a nice poster called "Does Salt Dissolve and Evaporate in Water?" She had dissolved equal amounts of 5 different salts (table salt, sea salt, kosher salt, Epsom salts, and baking soda) in equal amounts of cold and boiling water, then set them to evaporate. She tracked and charted the rates at which each evaporated, and displayed the glass bowls showing the crystals, which had grown on the bottoms and up the sides of the bowls. What really impressed us was that she knew quite a bit about the various salts in terms of where they came from (evaporated vs. mined vs. synthesized). Besides a certificate, we gave her a copy of "Ice Age Mammals of North America: A Guide to the Big, the Hairy, and the Bizarre" by Ian Lange.

Grades 6-8 -- Hannah Easterson, an 8th grader in Mill Creek, did a poster on the influence of degraded Penny Creek on North Creek called "The Power of a Penny -- the Influence of Penny Creek on North Creek." She took samples at several locations on both creeks above and below their confluence and looked at temperature, pH, dissolved oxygen, ammonia, nitrate, and Daphnia survival. (Daphnids are freshwater microcrustacians -- water fleas -- that are commonly used for freshwater toxicity assays. Hannah's mother said the house was cluttered with bowls of them for a week!) She used a statistical method to weight the various parameters as to their overall affect on stream health, charted the results, and determined that the bad influence of Penny Creek didn't persist for long after the confluence. It was all pretty impressive for an 8th grader, especially doing Daphnia survival assays. We awarded her a \$50 savings bond, a copy of "Glacial Lake

Missoula and its Humongous Floods" by David Alt, and a certificate.

Grades 9-12 -- Morgen Anyan, from Naches and an 11th grader at Selah High School, had an especially impressive poster called "Immobilization of Hazardous Materials Utilizing Klebsiella sp., Gallionella sp., and Desulfovibrio sp. Bacteria," which focused on the ability of various types of slime algae to take up metals in surface water. She took samples of slimes from local rivers and pond waters, and centrifuged them to concentrate the desired genera. She then simulated river environments in bottles filled with gravel and Yakima River water. She added the algae and aerated the bottles with tubes of flowing air at the water surface (to simulate flowing water mixing with air at the surface). Different types of algae grew at different levels within the gravels (depending on how aerobic conditions were) and removed different metals. She sampled the waters from the bottles once a day for several days and analyzed the concentrations of copper, zinc, boron and nitrate. Charts of the results showed that most of the removal occurred within a day or two. The Washington State Dept. of Ecology in Spokane is interested in her research, which could be used for in-stream remediation of mining-impacted streams, presumably by raising these slimes along stream reaches and periodically harvesting them. We awarded her a \$100 savings bond, a copy of "Hiking Washington's Geology" by Scott Babcock and Bob Carson, and a certificate.

We judged a total of 9 exhibits for AWG awards, and then did a little general judging in various categories. It's fun to see how creative students can get with their exhibits and gratifying to get a chance to encourage them.



**Scholarship Change and Funds Reminder**

We have been ok'd by the AWGF to move our scholarship from May to October. We will be receiving applicants in late October and will need to have contributions in to AWGF by September to be able to give out our scholarship. If you or your employer would like to contribute please consider sending a tax-deductible contribution made payable to the

"AWG Foundation" (be sure to write "**Puget Sound Scholarship**" on the memo line) to:

Ann Guhman, AWGF Treasurer  
Attn: AWG-PS Scholarship  
P.O. Box 620158  
Middleton, WI 53562-0108

Even small contributions add up and make a big difference to a struggling student. Individual contributions assist AWGF maintain its 501(c)3 status by helping meet the requirement that the Foundation receive at least 33% of its income from individual contributors. Also, if your employer is interested in providing or matching a donation that would be great as well. Thank you for your generosity and support in the past years!

Please contact Shawn Blaesing-Thompson if you have comments or questions at scholarship@awg-ps.org. Thank you.



**Remember the board cannot keep our chapter running alone. We need support from our members, and we want our members to feel like they benefit by being members. Look for a chance to sound off and make suggestions in our summer newsletter. Your chance to vote for new officers will also be in the same newsletter.**

**As always if you have something to add to a newsletter, or need to contact us see our phone numbers and email addresses at the end of this newsletter.**



**Membership Renewal Reminder**

I would also like to add that several of last years member have yet to renew. If you intend to renew and time got away from you please download the form from <http://www.awg.org/about/membership.html> We have a membership goal over the next two years to get 45 to 50 members in our chapter. Remember that you do not have to be female to join. ☺

## **AWG Puget Sound Officers and Chairs, 2004-2005**

President:	Lynn Moses	W: (360) 709-5462	<a href="mailto:president@awg-ps.org">president@awg-ps.org</a>
Vice President:	Paula York	H: (253) 847-1698	<a href="mailto:vpresident@awg-ps.org">vpresident@awg-ps.org</a>
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Publications Chair:	Shawn Blaesing-Thompson	W: (360) 709-5524	<a href="mailto:editor@awg-ps.org">editor@awg-ps.org</a>
Scholarship Chair:	Shawn Blaesing-Thompson	W: (360) 709-5524	<a href="mailto:scholarship@awg-ps.org">scholarship@awg-ps.org</a>
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