



## Association for Women Geoscientists

Puget Sound Chapter

Spring 2007

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

Greetings! I hope everyone is staying on top of their new year's resolutions. One of mine was to get the website back up and running with all new information for the New Year. I checked that one of my list so take a look at: <http://www.awg-ps.org> Getting a newsletter out in the right quarter I will have to keep working on. ☺

As usual if you have any interesting information you want to share in the next newsletter (promotions, publications, book reviews, and interesting websites) or time sensitive meeting notices or job announcements please send them off to me at [blaesis@wsdot.wa.gov](mailto:blaesis@wsdot.wa.gov)

Have a wonderful rest of your spring and may summer be soon on its way!

Sincerely,

Shawn Blaesing-Thompson

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

Hello AWG-PS chapter members:

There are specific topics that I want to bring to the attention of the chapter members:

(1) We understand that the AWG Spokane chapter is dissolving. The Spokane chapter encompasses the Tri-Cities and the Northern Idaho Panhandle. The Columbia and Okanogan Rivers define the boundary of the two chapters.

I am proposing to the membership that we incorporate the Spokane chapter members into our chapter and redefine our chapter boundaries. I need to know whether there is support from the membership to move forward with this plan, or whether there are serious concerns and issues that need to be discussed among the membership. Your feedback is important. There are a significant number of higher education facilities with faculty and students that we would be able to incorporate to our existing programs. Please contact me or any of the board members about your view on this topic.

(2) I am doing some groundwork for developing an AWG-PS chapter sponsored program that would operate as a clearing house for connecting geoscience employers that have temporary work/research needs with appropriate interns from high school, college level students. This clearinghouse would connect the working geoscience community with young people who would like the work experience and associated mentoring. Do any of the AWG-PS chapter members have some ideas on this topic?

(3) During our professional careers we all do some mentoring and are mentored, and we know the value and importance of this process. The board has discussed looking at the possibilities of an AWG presence in student science clubs at the middle school, high school and college level. Do you have any ideas about this? Are there ways we can strengthen and develop this process?

(4) This is my third and final year as president of the AWG-PS chapter. I am looking for someone to take the lead. If you are interested in this opportunity or have questions about duties, please contact me. There is a great board in place to keep you on track.

Sincerely,  
Lynn J. Moses  
President, AWG-PS

### Upcoming Programs:

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#### *May 2007 Program:*

- May 4-6 Geological Society of America Cordilleran Section Meeting, Bellingham WA – We are also planning a joint reception with AWG/AEG Friday evening the 4<sup>th</sup>.  
<http://www.geosociety.org/sectdiv/cord/07cdmtg.htm>

***We need volunteers to help with the GSA event as well as to volunteer at the AWG booth during the meeting. This is a great networking opportunity!! Please contact Lynn Moses if you are interested. W: (360) 709-5462 [president@awg-ps.org](mailto:president@awg-ps.org)***

#### *June 2007 Program:*

- 2006 AWG Iceland Field Trip Slide Show

#### *Late Summer 2007 Field Trip:*

- Possible suggested locations are the Oregon Coast, Mount St Helens, or the Wallowa Mts. in NE Oregon.

#### *September 2007 Program:*

- NWGS 20th anniversary event – See below for more information

#### *October 2007 Program:*

- Crafty Geoscientists – Knitting/Crochet or Jewelry Making – We are looking for a centralized venue for either of these activities if you would like to host and share or learn new talents.
- Joint Meeting with AWEP focusing possibly on groundwater remediation - Anne Udaloy, Suzanne Dudziak, Heather Vick and Marcia Knadle will be the organizers and likely speakers. The focus should be new approaches to GW investigation and remediation.

### **What other programs would you like to see us offer in 2007?**

- 2005 AWG Grand Canyon Field Trip Slide Show - Postponed

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### **NORTHWEST GEOLOGICAL SOCIETY 20 TH ANNIVERSARY SYMPOSIUM & RECEPTION**

Program: A full-day symposium and a reception are planned to commemorate the re-founding of the NWGS in 1987. The program will include 8 to 12 invited talks, posters, morning and afternoon

coffee breaks, box lunches, and an early evening wine and beer reception. The major focus of the program will be on the Pacific Northwest.

Topics currently being considered for talks are:

- geology of certain areas (including major engineering and environmental projects);
- Future challenges and opportunities (including geosocietal issues).

Speakers will be invited. If you have a suggestion for a speaker or topic, contact Darrel Cowan (see below) soon. Some travel funds will be available.

Posters will be accepted only after review of an abstract of less than 330 words. Submit your abstract to Darrel Cowan (see below) by 1 June 2007. We especially seek posters that describe the geoscientific contributions of individuals, corporations, or institutions (living or dead) in the Pacific Northwest. We will accept a maximum of 20 posters from students and 20 from others.

*Date:* 9 AM to 7:30 PM, 13 October 2007 (a non-football Saturday at UW)

*Venue:* 102 Johnson Hall (renovated home of ESS), University of Washington.

Parking in the nearby central underground garage is \$6.

*Participants:* We anticipate 100 to 150 attendees.

*Printed program:* The program of the proceedings will include abstracts of talks and posters, recognition of sponsors, history of NWGS, etc.

*Sponsors to date* (January 30, 2007)

Analytical Resources Inc., Aspect Consulting, Inc., Associated Earth Sciences, Inc.  
Department of Earth and Space Sciences, University of Washington Catherine Ellis, Landau Associates, Inc.

Phoinix, Inc., Shannon & Wilson, Inc., Washington DNR, Division of Geology and Earth Resources  
We welcome additional sponsors. Please contact Brian Butler (see below).

Registration Fees: Make checks in US funds to NWGS Symposium and mail to:

Dan Smith, Secretary NWGS  
10203 40th Ave. SW  
Seattle, WA, 98146

The deadline for early registration is 1 September 2007. Even those who qualify for free registration must register.

- Member of  
NWGS AEG, AWG \$25
- Students \$5
- Speakers and Sponsors free

Booths: Space for display tables is available for \$200 (contact Virginian Agnew). If your organization wants a more elaborate display, become a sponsor (contact Brian Butler, see below).

Chairpersons of Organizing Committee:

General Chairman	Eric Cheney - vaalbara@u.washington.edu
Fund Raising	Brian Butler - bbutler@landauinc.com
Speakers	Darrel Cowan - darrel@u.washington.edu
Treasurer	Virginia Agnew - agnewv@msn.com
Registration	Dan Smith - nwgeo@yahoo.com
Catering	S-C Bradford - scb@jenacom.com
Historian	Donn Charnley - donncharnley@verizon.net

### **Science Fairs: (by Shawn Blaesing-Thompson)**

This year with travels, conferences and jury duty our usual group of judges was unavailable. Unfortunately we were unable to secure a new group of volunteers and DID NOT send any representatives to any of the three fairs listed below. This is not a great representation of what our chapter can do to Encourage, Enhance and Exchange information with young women in the area. Please if you are interested in participating as a volunteer for these fairs in the future I am collecting a list. Contact me at [blaesis@wsdot.wa.gov](mailto:blaesis@wsdot.wa.gov)

We receive a grant from AWGF to cover half of our expenses. If you would like to contribute to the grant (any amount helps \$5, \$10, etc.) you can either contribute to AWG-PS\_Sage\_05-0001r by sending a check to AWG Foundation, Attn: AWG-PS\_Sage\_05-0001r / Lorraine Manz, PO Box 7364, Bismarck, ND 58507-7364

**CALL FOR SCIENCE FAIR VOLUNTEERS** (Please volunteer – Instructions will be sent along with a packet for each judge for each fair.) The fairs are in March each year so take a look at the links below and please pick one to put on your calendar for next year.

[Mid Columbia Science Fair – Kennewick](#)

[South Puget Sound Science Fair – Tacoma – PLU](#)

[State Science and Engineering Fair – Bremerton](#)

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### **Scholarship Award for 2006:**

We had a competitive group of submissions for the scholarship this fall. The scholarship will be awarded at the Regional GSA AWG/AEG dinner on May 4<sup>th</sup> in Bellingham. Jennifer Fernandes expects to graduate from Western Washington University with a BS in Sciences and Technology in 2007 and plans to attend graduate school. She transferred from Clark College to Western Washington and subsequently pursued a rigorous course of study in geosciences and supporting coursework, including chemistry, physics, and advanced mathematics. She has excelled at her coursework and has committed to completing a senior thesis in volcanology. She is described as "a cheerful person with high standards" and "a hard-working young woman (who is) singularly unafraid of challenges".

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: AWG Foundation, Attn: **Puget Sound Scholarship** / Lorraine Manz, PO Box 7364, Bismarck, ND 58507-7364

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! Contact Anne Udaloy if you have scholarship questions at W: (206) 362-0295 or [scholarship@awg-ps.org](mailto:scholarship@awg-ps.org)

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## MEETING RECAPS

### **March 2007 AWG Program** (Submitted by Shawn Blaesing-Thompson)

Viewing of *An Inconvenient Truth*

We had a handful of folks come to Tumwater to watch *An Inconvenient Truth*, a documentary about Al Gore's talks on Climate Change. The movie was excellent and shocking even in my third viewing (one of them live).

If you have not yet had a chance to watch the movie let me know and I would be happy to mail my spare copy to you. It is my personal goal to get as many people as possible to see this movie and start a real dialog about changes that can be made. In the next newsletter I will add some information about little things you can do in you life to minimize your impact on the Earth.

### **November 2006 AWG/NWGS Joint Program**

Abstract provided by Amelia Shevenell

Is there a relationship between middle Miocene Antarctic ice sheet development and the Columbia River Flood Basalts?

Amelia E. Shevenell\*, James P. Kennett, and David W. Lea

\*Postdoctoral Fellow, Program on Climate Change, University of Washington, Seattle, WA 98195-7940; ashevenell@ocean.washington.edu

The geologic record reveals that Antarctic ice sheets did not become a permanent feature on Earth until the middle Miocene (~14 million years ago (Ma)), suggesting a fundamental reorganization of the global climate system at this time. Over the past quarter century, the processes influencing Antarctic ice sheet growth in the middle Miocene have been the subject of scientific debate. Much of what is known about the development of Antarctic ice sheets comes from the oxygen isotope ( $\delta^{18}\text{O}$ ) record of fossil foraminifer shells preserved in deep-sea sediments. Although the global oxygen isotope record has been essential for determining the general trend of climate evolution during the Cenozoic (0-65 Ma),  $\delta^{18}\text{O}$  is often difficult to interpret because it contains information about both ocean temperature and ice volume.

Recent geochemical advances have made it possible to separate ice volume and temperature signals contained in the oxygen isotope record by pairing  $\delta^{18}\text{O}$  measurements with measurements of the magnesium/calcium (Mg/Ca) content of the same foraminifer shells, a proxy for ocean temperature. Paired  $\delta^{18}\text{O}$  and Mg/Ca measurements from surface and deep dwelling foraminifers preserved in Southern Ocean sediments were used to assess the phasing of Antarctic ice growth, temperature change, and global carbon cycling during the Middle Miocene climate reorganization. Data reveal that Antarctic ice growth comprises the majority of the global  $\delta^{18}\text{O}$  signal at ~14 Ma and that expansion of the ice sheet commenced during a period of relative warmth and low atmospheric carbon dioxide. Invigorated oceanic/atmospheric circulation, related to the developing ice sheet, may have isolated Antarctica from low-latitude heat and moisture sources and acted as a negative feedback to slow ice sheet expansion. Results suggest that Antarctica was especially sensitive to heat and moisture availability during this interval of low atmospheric  $\text{CO}_2$  conditions, reinforcing the fundamental role of  $\text{CO}_2$  in the global climate system.

## October 2006 AWG/AEG Joint Program

### SHALLOW-LANDSLIDE HAZARD MAP OF SEATTLE, WASHINGTON

By Edwin L. Harp and John A. Michael[1] and William T. Laprade[2] October 19<sup>th</sup>, 2006

#### ABSTRACT

Landslides, particularly debris flows, have long been a significant cause of damage and destruction to people and property in the Puget Sound region. Following the years of 1996 and 1997, the Federal Emergency Management Agency (FEMA) designated Seattle as a "Project Impact" city with the goal of encouraging the city to become more disaster resistant to the effects of landslides and other natural hazards. A major recommendation of the Project Impact council was that the city and the U.S. Geological Survey (USGS) collaborate to produce a landslide hazard map of the city. An exceptional data set archived by the city, containing more than 100 years of landslide data from severe storm events, allowed comparison of actual landslide locations with those predicted by slope-stability modeling. We used an infinite-slope analysis, which models slope segments as rigid friction blocks, to estimate the susceptibility of slopes to shallow landslides which often mobilize into debris flows, water-laden slurries that can form from shallow failures of soil and weathered bedrock, and can travel at high velocities down steep slopes. Data used for analysis consisted of a digital slope map derived from recent Light Detection and Ranging (LIDAR) imagery of Seattle, recent digital geologic mapping, and shear-strength test data for the geologic units in the surrounding area. The combination of these data layers within a Geographic Information System (GIS) platform allowed the preparation of a shallow landslide hazard map for the entire city of Seattle.

[1] U.S. Geological Survey, Golden, Colorado 80401

[2] Shannon and Wilson, Inc., Seattle, Washington 98103

#### INTERESTING INFORMATION

##### **TV show on the Travel Channel** Submitted by Amanda Taub

It is called *The Best Places to Find Cash & Treasures* and is hosted by Becky Worley. New episodes are shown on Tuesdays at 10 PM ET/PT. There are reruns on the weekends and other times during the week. She has gone hunting for prehistoric shark teeth (which I am watching right now), amethysts, fluorescent minerals, opals, aquamarines and so much more all here in the US. Check out the web site at <http://travel.discovery.com/tv/cash-treasures/cash-treasures.html>.

##### **Planet Earth on the Discovery Channel** Submitted by Shawn Blaesing-Thompson

More than five years in the making, PLANET EARTH redefines blue-chip natural history filmmaking and continues the Discovery Channel mission to provide the highest quality programming in the world. The 11-part series will amaze viewers with never-before-seen animal behaviors, startling views of locations captured by cameras for the first time, and unprecedented high-definition production techniques. *Planet Earth* filmmakers went, literally, to the ends of the earth to capture the essence of our planet, spending 2,000 days in the field. They lived for weeks or months at a time in remote locations, both awe-inspiring and brutally difficult to reach. Award-winning actress and conservationist Sigourney Weaver is the series' narrator.

<http://www.nature.org/earth/>

<http://dsc.discovery.com/convergence/planet-earth/planet-earth.html>

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## Book Review

*Evidence From the Earth: Forensic Geology & Criminal Investigation*

Raymond C. Murray

Mountain Press 2004

198 pp. text plus glossary and resources

\$20

I recently came upon this gem\* from 2004. If you haven't yet unearthed it, dig it up and make it required reading. Especially, if you are a young geology student looking for a challenging career specialty or an experienced pro looking to change fields, this one could whet your appetite.

Forensic (investigative) Geology can involve geochemistry, geophysics, soils, mineralogy, historical geology, and good mapping skills. And just about any other earth science specialty you could name. It's CSI with rocks! The use of geology to investigate evidence of criminal activity actually goes back over a hundred years, but with the advent of 20th and 21st century technology/tools it has become a reliable weapon for finding and identifying whodunnit.

Murray cites examples and case histories to explain the many procedures used to establish the suspect's presence at (or absence from) the crime scene. If you've ever been interested in detective work, this could be the job you're looking for.

Janet Tanaka

AWG Puget Sound

\* All puns intentional--it's been that kind of day.

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Here is an interesting article that ran a year or so ago.

Here is the link again if anyone is interested.

**The Super Flood - Forget an eruption. The real threat of Mount Rainier is a surging wall of mud that could bury the suburbs and splash Seattle.**

<http://www.seattleweekly.com/2005-10-19/news/the-super-flood.php>

### **AWG Puget Sound Officers and Chairs, 2005-2006**

President:	Lynn Moses	W: (360) 709-5462	president@awg-ps.org
Vice President:	Suzanne Dudziak	W: (253) 266-2838	vpresident@awg-ps.org
Secretary:	Marcia Knadle	W: (206) 553-1641	secretary@awg-ps.org
Treasurer:	Wendy Gerstel	H: (360)754-2409	treasurer@awg-ps.org
Publications Chair:	Shawn Blaesing-Thompson	W: (360) 709-5524	editor@awg-ps.org
Scholarship Chair:	Anne Udaloy	W: (206) 362-0295	scholarship@awg-ps.org
Web Mistress:	Shawn Blaesing-Thompson	W: (360) 709-5524	webmistress@awg-ps.org
Regional Delegate:	Paula York	H: (253) 847-1698	

**AWG-PS Website: [www.awg-ps.org](http://www.awg-ps.org)**

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