



Association for Women Geoscientists Pacific Northwest Chapter Spring 2012 Newsletter

President's Message – Confessions of an AWG Junkie

Marcia Knadle, AWG-PNW Chapter President

As I write this, I'm contemplating retiring from my job of 26 years at EPA. I had settled on June 1, but as that date rapidly approaches, I'm realizing that I'm not emotionally ready to disengage from my work quite yet. It's not that I'd be casting about for things to do in retirement – I'll have **plenty** to keep me busy. But I think I'll really miss doing geoscience work on a day-to-day basis and interacting with my colleagues. Plus, I want to know how things turn out with my projects, some of which I've had since the day I was hired, but at the rate things move at Superfund sites, indulging that curiosity could keep me working for decades more.

Thinking about retirement brings on career reflection, and when I went to AWG's 35th Anniversary Convention last month, I realized that AWG has been my companion throughout nearly my entire professional career. For most of that time, I've been an active member, either on the AWG Board of Directors or as a chapter officer, and I have no doubt that I've gotten more out of AWG than I put into it, mainly in the form of collegial friendships and the opportunities to build organizational and leadership skills. I took the time and expense to travel to Hartford, CT for two reasons. One was that I believe I'm the only person who has attended all six AWG conventions ever held, and I wasn't ready to blow that record. But the main draw was the chance to briefly reconnect with old AWG friends as well as to build relationships with current leaders. It was especially great to see Shawn Blaesing-Thompson, who is now doing a bang-up job as AWG Secretary. I also enjoyed the chance to room with and get better acquainted with our Pacific Region Delegate, Lina Ma. I also attended part of the Board of Directors Meeting, which these days are far more efficient than they were when I first started on the Board in 1985.

There was some discussion at the convention about how things have changed for women geoscientists over the course of AWG's existence, starting in 1977. In many ways, women's participation, opportunities, and work environments have improved dramatically, although there are still some "glass ceiling" advancement issues. I think the big remaining challenges for women geoscientists are mostly related to work/life balance, whether it's the way the tenure clock and the biological clock confound each other or the loss of young women deciding not to put up with the sometimes punishing work and travel schedules

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demanding by consulting firms. Fortunately, men are realizing that these policies also hurt them, so I believe improvement is happening, albeit slowly. (It was with no small amount of satisfaction that I listened to the keynote address by Marcia McNutt, geophysicist and current chief of the USGS – only 26 years after I left the USGS feeling thoroughly stymied professionally.) However, I find the pleasure and usefulness of friendships and acquaintances with a broad network of women geoscientists to be just as satisfying now as it was 30 years ago. I expect I'll continue to feel its importance long after geology has transitioned for me from vocation to avocation.

I have no plans to retire from AWG, but we can always use new people on our board. The chapter offices on the ballot this summer include secretary (Suzanne Dudziak has reached her term limit and must be replaced), president (I'm willing to continue one more year but would be happy to hand over the reins), and vice-president. In addition, we can always use people who are interested in short-term contributions – helping with the scholarship(s), giving a presentation on an interesting project, or helping lead or organize a field trip, including local one-day trips. Please let me know if you're interested in taking a more active role in the chapter at marciaAWG@aol.com.

AWG GOALS

- **Encourage** the participation of women in the geosciences
- **Exchange** educational, technical, and professional information
- **Enhance** the professional growth and advancement of women in the geosciences

Message from the Editor – What does a Scientist Look Like?

Jenny Saltonstall, AWG-PNW Newsletter Editor

Welcome to the Spring 2012 Edition of the AWG-Pacific Northwest Chapter newsletter!

I was surfing through a listserv, and saw this tag line “What does a scientist look like?” The post had some before-and-after pictures of what a scientist looks like or does, drawn by 7th grade girls taking a “science is a girl thing” summer camp. The left set of pictures is from the first day and the right set is from the last day of the camp. I loved the difference, just after a few days of camp.

How many people think of you as a scientist?

Please keep up the good work just being who you are. Simply letting people know what you do for a living can expand people’s perception of ‘normal.’ And of course, if you can spare some energy and time, talk with young people in your life about science or volunteer with a local school on career day.

On a similar vein Allie Wilkinson started a website “This Is What A Scientist Looks Like” as a project developed to challenge the stereotypical perception of a scientist.

<http://lookslikescience.tumblr.com/>

From the website:

“This website is dedicated to changing the overwhelming stereotype that science is conducted behind closed doors by unapproachable old, white men. While some scientists do work in a lab, others spend their days traveling the world looking for rare insects, or underwater studying sharks, or up a volcano collecting rocks. Scientists enjoy food, dancing, music, and traveling. There are many women in science, and the number of minorities in the field is steadily increasing.”

Standard Plug: Please let me know if you have any announcements or would like to submit articles on local earth sciences issues/events, articles on related to the participation of women in the geosciences, or even book or movie reviews. If you have ideas for how to improve or expand this newsletter or ideas for AWG events, please drop any of us a line and let us know your ideas!

Before:



(i) “He is fat because he doesn’t have time to exercise. His close are small and ripped because he doesn’t have time to shop”



(ii) “Because he stays a hermit in his lab experimenting potions and stuff”



(iii) “A scientist is someone who asks a question and does an experiment and studies to find the answer.
Scientist’s Name: Michel Riest”

After:



(iv) “They learn!!!”



(v) “Scientist can do a lot of things”



(vi) “A scientist is someone who asks a question then studies and experiments to find the answer.
Scientist’s Name: Gabriela Quintana”

Micromorphological Analysis of a Stratigraphic Profile at the Paleolithic Site of Bear Creek, Redmond, WA, – March Meeting: Featuring Brandy Rinck, Geoarchaeologist, SWCA, Inc.

Meeting Review By Shari Silverman, AWG-PNW Chapter Vice-President

The Pacific Northwest Chapter of the Association of Women Geoscientists (AWG-PNW) meeting held its spring meeting on March 1, 2012. The meeting occurred in Bellevue, Washington at Mary Lynne Poole’s house, which she graciously offered. SWCA, Inc.’s geoarchaeologist, Brandy Rinck, presented a talk about her micromorphology studies of an archaeological site on Bear Creek, north of Sammamish Lake, Redmond,

Washington. The presentation followed pizza, salad and dessert, all of which were incredible.

The talk, titled *Micromorphological Analysis of a Stratigraphic Profile at the Paleolithic Site of Bear Creek, Redmond, WA*, briefly summarized the site’s archaeological findings, then focused on Rinck’s thin-section study. Artifacts included a variety of rhyolite tools and debitage (tool manufacture waste). Analyses of

artifacts revealed that a variety of plants and animals were used at or occupied the site.

Most of the presentation focused on soil micromorphology, from which Rinck learned other aspects of site use and supplemented its formation history. The soil profile measured 30 vertical centimeters. It extended from an upper layer dating from 9840 calendar years ago downward to a base layer of fluvial reworked glacial deposits. To prepare for her analysis, thin-sections were created for study.

Rinck passed around samples of the thin-sections as she discussed them. She hypothesized that fine-grained alluvium indicated a transition between a lake shoreline in a changing glacial environment to a wetland (suggested by overlying peat). This alluvium contained the artifacts. Diatomaceous earth blanketed the peat, indicating deposition in a slackwater environment. Bear Creek alluvium and modern fill capped the diatomaceous earth.

Rinck answered questions and took comments throughout and after the presentation, many about the extent and protection of similar sites in the vicinity. Everyone seemed very interested that the artifacts were made from rhyolite.

Here are a few review questions:

Question: *What is diatomaceous earth?:*

Composed of diatoms, which are a fossilized, hard-shelled algae generally deposited in lake or marine environments, it is a soft, sedimentary rock.

Diatomaceous Earth: Photo from:



http://en.wikipedia.org/wiki/Diatomaceous_earth

Question: *What is that purple item in the thin-section?:*

It was vivianite, which is a ferrous mineral. Rinck hypothesized that it may have replaced calcium in a potential piece of bone.

Vivianite: Photo from:

<http://en.wikipedia.org/wiki/Vivianite>



Notes from the 2012 Spring National Board of Directors Meeting

Lina Ma, Pacific Region Delegate

It is amazing that spring is already here and summer is just around the corner! This time, the Board of Directors (BOD) meeting was held in Hartford, Connecticut on March 16th prior to the 35th Anniversary Convention events and the Northeast section meeting of the Geological Society of America. The BOD held a relatively quick meeting (3 hours compared to the usual 2 day affair) with much of the discussion revolving around the association's chapters and its membership.

Currently, there are 11 AWG chapters, including one student chapter and the International Region. Most chapters are faring well, although there are some becoming less active and others have even dissolved in recent years. However, there is a growing interest in many other areas to revive old or less active chapters, or to create a new one. This includes another group of dedicated students who are looking to form another AWG student chapter. Even with the increasing interest in building more chapters, a number of inquiries were made about the chapter organization. Some of the main questions raised were- Would AWG fare better with regional chapters, rather than with localized chapters? How does AWG best serve those (At-Large) members who live in areas where chapters do not exist? Perhaps, a representative in each state is needed? Does AWG even need chapters?

There may not be a good, single answer to any of these questions, although one common factor that determines how AWG functions lies in the support, efforts, and dedication through its membership. So PLEASE, do not

forget to renew your membership, remind those around you to renew their membership or even join AWG, and become more involved. Your efforts and support not only provide you with the benefits that AWG offers, but it also allows the association to provide the same support to other women geoscientists, including those from around the globe.

Recently, AWG has been working to build a more visible presence in the international community by reaching out to also support women geoscientists outside of the United States. This presence will allow women geoscientists to expand their horizons even further from the U.S. and beyond. International members reside in countries such as Australia, Canada, Colombia, Egypt, England, Germany, Iceland, Ireland, Mexico, New Zealand, Nigeria, Norway, Pakistan, Russia, United Arab Emirates, and the Commonwealth of Puerto Rico. However, AWG would like to expand this list of international members and countries, so beginning in 2012, members from countries listed by the World Bank as anything other than "high-income" have a new membership rate of \$10 for professionals and \$5 for students. For more details on international membership and benefits, visit the International members section on the AWG website (<http://awg.org/Members/international.html>).

Lastly, officer elections to serve on the BOD will be coming up again later this year. Regional delegate positions for many of the AWG regions across the country will be available for someone interested in serving on the BOD. These are volunteer positions with a few general

requirements– 1) you must be a current AWG member, 2) you must reside in the region of your delegate representation, and 3) you must be able to attend the BOD meetings, typically twice in one year, to participate in issues regarding the association. Regional delegates along with an alternate serve a three-year term before election of that position is replaced on the ballot. If you are looking for an opportunity to become more involved with AWG at the national level, would like to meet other AWG members from across the nation, or work with a

group of passionate women in a formal, yet easygoing atmosphere, serving on the BOD is an excellent chance to take full advantage of these experiences. Also, feel free to send in a nomination to the AWG office (office@awg.org) for someone you think might make a great candidate to serve on the BOD as a delegate. A delegate can come from any sector of the geosciences community, from academia, government or industry. And students are welcome to serve on the BOD as well!

AWG Oregon Activities

AWG is active in Oregon. We had a joint meeting with AEG in November, featuring Anne MacDonald from GeoEngineers discussing "Stream Crossings at Pipelines – what guidance does an engineering geologist provide?", and had a couple of mixers/social gatherings recently in downtown Portland. Plans are also in the works for a hike at Mount St. Helens this summer. More details to follow as they become available.



Janet Cullen Tanaka Scholarship Winners - 2012

Review By Pat Reed, AWG-PNW Scholarship Chair

First Place Winner, Symone Stinson

Symone Stinson raised children for 22 years, and then went back to school. She is in her junior year at Western Oregon University, with her daughter. First she went for a transfer degree at Linn-Benton Community College. If all goes well both she and her daughter will be graduating in the Spring of 2013. Symone plans to continue a Master's degree in volcanology or structural geology.

During her time at Linn-Benton she worked on an internship with Increasing Diversity in Earth Sciences (IDES) on a project to digitize and analyze LiDAR data (with Arc GIS) of the slopes, age, and morphology of cinder cones in the Newberry Caldera. The IDES program pairs students with a mentor to gain practical experience with conducting a research project. Symone said that she joined the Linn-Benton Remotely Operated Vehicle (ROV) team to gain experience with the challenges facing research beneath the surface of the oceans. The team took 3rd place in the International competition held at NASA's Neutral Buoyancy Lab in Houston in June 2011. According to one of her advisors on the project, her design was the only one that worked all the time in the competition. Her advisors call her "a good role model" for leadership, work ethic, and team building. Another said that he had "rarely seen a student out for so long have such confidence and take initiative for her education."

Symone was able to maintain a 4.0 grade point average (except for one quarter) at Linn-Benton, and was on the Honor Roll when she received her Transfer degree. In a recent conversation, she said that her GPA at WOU was 3.5 in the Fall term, which was disappointing. She said it was a good challenge for doing better in Winter term.

In her application statement she said: "It is my goal that once I finish my education to be able to find a position within the Geosciences that will help to broaden the understanding of Earth systems. I look forward to the challenges that these fields will contain, as well as working with new technologies as they become available. I strive for complete comprehension of the subjects that I study, and feel this along with my deep curiosity about geologic processes will help me when I reach the workforce."

Symone and her daughter drive from Philomath to Monmouth every week day. That's about 54 miles and an hour and a half, so part of our assistance may take the form of gas for her car. If Symone's name is familiar, it was because she was our second place winner in last year's scholarship. We're proud to be able to help her out again on her way through her education!

Second Place Winner, Bridget Smith

"Education is a privilege" she once told a friend.

Last year Bridget Smith was a hardworking single mother. In the Fall of last year she was laid off. There was no family support. She says that she realized she needed

more education to support herself and her son. So she began Winter quarter at Clackamas Community College in Oregon as a Sophomore. Although she has Pell grants and student loans, it isn't enough to live on. She and her son have come to rely on friends and the Food Bank. When they both got sick this winter, there was no choice but to go to a doctor. Medical bills have sunk the Budget ship.

Bridget's friends say that she has always been interested in learning, especially about geology, mathematics, and the environment. She plans a career in geosciences. Her advisors say that she helps other students, is a good student herself, and is eager to learn. Her grades in geology classes have been good, considering illness and motherhood.

In a recent email she said that her son "William plays and I do my homework with sword fight and snack breaks."



Photos: Symone Stinson (left) and Bridget Smith (right)

Central Sound Regional Science and Engineering Fair, AWG Award Winners 2012

Review By Pat Reed, AWG-PNW Scholarship Chair

My husband Alan and I attended the Fair as Special Award judges, and had an excellent time. The organization of the Fair was even better than the State Fair! We were very impressed. I decided that since it was a smaller fair, we would give out only one award, and a \$25 gift card to Barnes and Noble. Several women were participating with earth-science or environmental entries. The first place entry stood out clearly.

FIRST PLACE:

Anjani Patel, Cedarcrest High School, Senior. "Cleaning Up Various Oil Spills Using Bioremediation"

Anjani did a study of bioremediation in salt water (she did fresh water last year) using *penicilla* fungus versus *pseudomonas* bacteria. She looked at the effect of each on both beach and open water environments using both methods. She put seawater and saturated beach sand in each sample jar and also used a petri dish for each sample.



The sampling went on for four days, with her opening four of 16 tests each day (2 jars, 2 petri dishes), to observe the effect of each day without disturbing the longer tests. She had done a statistical analysis of the 16 tests, looking at efficiency of breakdown, temperature, and environment. Her conclusion was that the fungus did a more thorough

job of breakdown on the beach, but was less predictable in the open water and that the fungus was less persistent in the environment afterwards.

Other candidates:

Samantha Gossage, Monroe High School, Senior. "Tsunami Sea Wall"

Samantha was studying the effect of sea wall height on protection of the shore. She made a model using a flexible swimming pool, and tried different wall and wave heights. Her analysis suffered from the lack of quantifiable data, and her conclusion was vague.

Caitlin Gard, Cedarcrest High School, "How Healthy is the Snoqualmie River?"

Caitlin created a water sampler using rope, a plastic container, and tape to obtain a sampling device she could throw into the river to get a mid-stream sample. She used disposable test equipment to monitor salinity, clarity, and pH. She took two samples at two locations on the river, and returned a month later to take two additional samples. It was an interesting display, but we would have liked to see more tests, and comparison to other rivers.

Other interesting subjects:

- "Tracing Ancestry through DNA"
- "Green Refrigeration by Application of the Magnetocaloric Effect" (The overall winner)
- "The Effects of Mozart on Mice"
- "Celiac Disease and genetic testing"

We were quite delighted to see so many interesting topics, and had a great time talking to the ladies. I presented Anjani with the book card, as we could not stay for the presentations of the awards. She was delighted. She is planning to go to college and study bioremediation. She has a great start!

2011-2012 Contact Information

*Association for Women Geoscientists Pacific Northwest Chapter,
Established in 1985 as the Puget Sound Chapter*

Mailing Address

AWG – Pacific Northwest Chapter
P.O. Box 28391
Seattle, WA 98118

Office	Name	Contact Phone	Contact Email
President	Marcia Knadle	(206) 553-1641	president@awg-ps.org OR marciaAWG@aol.com
Past President:	Heather Vick	(206) 850-9248	ppresident@awg-ps.org
Vice President	Shari Silverman	(206) 343-0226	vpresident@awg-ps.org
Secretary	Suzanne Dudziak	(253) 266-2838	secretary@awg-ps.org
Treasurer	Heather Vick	(206) 850-9248	treasurer@awg-ps.org
Newsletter Editor	Jenny Saltonstall	(425)827-7701	jsaltonstall@aesgeo.com
Webmaster	Keith Olson	(541) 669-0326	webmistress@awg-ps.org
Scholarship Chair	Pat Reed	(206) 391-6609	scholarship@awg-ps.org
Pacific Region Delegate	Lina Ma	(971) 673-1545	pac-del@awg.org

About AWG

The Association for Women Geoscientists is an international organization devoted to enhancing the quality and level of participation of women in geosciences and to introduce girls and young women to geoscience careers. Membership is open to anyone who supports AWG's goals. Our members include:

- professional women and men from industry, government, museums, academia, and K-12 teachers
- students
- retirees
- others interested in supporting our goals.

Our diverse interests and expertise cover the entire spectrum of geoscience disciplines and career paths, providing unexcelled networking and mentoring opportunities. Our membership is brought together by a common love of earth science and the desire to ensure rewarding opportunities for women in the geosciences.