



Serving Professionals in Engineering, Environmental,
and Ground Water Geology

OREGON SECTION

NEWSLETTER

The Official Newsletter of the Oregon Section Association of Engineering Geologists

APRIL MEETING:

Speaker: Dr. Brian Atwater
U.S. Geological Survey, Seattle

Title: "Maximum size and condition probability of great earthquakes on the Cascadia subduction zone"

Date: Thursday, April 17, 1997

Times: 6:00 PM: Social Hour
7:00 PM: Dinner
8:00 PM: Talk

Where: Buster's Barbecue, Tigard

Menu: Buffet Style \$10.00 (students \$5.00) *Drinks are extra*
Do not Call in choice to AEG, just pick up your choice
In the buffet line at the meeting

Choose 1 of the following barbecue meats:

1. Beef Brisket
2. Pork Spare Ribs
3. Fresh Turkey Breast
4. Beef Ribs
5. Chicken Half
6. Link Sausage
7. Orange Glaced Ham

Reservations: Call receptionists at David Newton and Associates: 228-7718

Background on speaker:

Dr. Atwater is one of the leading authorities on subduction earthquakes in the Pacific Northwest. His discoveries of buried marshes along the Washington coast have led to the major discoveries and theories that subduction earthquakes are a possibility in this region of the country. Brian got his B.S. (1973) and M.S. (1974) from Stanford University. His Ph.D. is from the University of Delaware (1980). He has been working for the U.S. Geological Survey for 24 years. Projects that he has worked on during that period are: Quaternary geology of central California, bedrock and Quaternary geology near the Grand Coulee Dam, paleoseismicity in western Washington, and analog studies in Alaska and Chile.

ABSTRACT

Dr. Atwater will update us on the latest information related to the subduction earthquakes in the Pacific Northwest. In regards to the maximum size, he will report on the new tree-ring test of the hypothesis that a magnitude 9 earthquake at Cascadia generated a tsunami that struck Japan in January 1700. On probability, he will discuss results and limitations of using 3500 years of earthquake history in southern Washington to estimate probabilities that the next great earthquake at central Cascadia will occur in the next 50 years.

Message from the Chair:

This month we should have another well-attended meeting. Brian Atwater is a very good speaker and will present the latest on earthquakes along Cascadia. We are back at Buster's Barbecue which is the largest place we could get. It has lots of parking and a large room.

This past month's meeting was super! David Rogers captivated an audience of 52 while talking about the St. Francis dam disaster. It was a classic case history of intensive forensic engineering geology using many tools, especially basic geomorphology. David is a person of high integrity and I admire him quite a lot. I did not have time to mention when I introduced him that he made a move in his career that could have been devastating. He turned in his P.E. last year in California. The board did not want to accept it because he is one of the most respected P.E.'s in California. It meant the end to a lot of jobs in California and major cutbacks in his company of 24 people. When he had applied to take the P.E., he already had his Ph.D. in geotechnical engineering from one of the best programs in America, Berkeley. The application gives you four years of experience for a B.S. degree in civil engineering and only one year for a Ph.D.. His BS was in geology. He had met the spirit of the rule, but he could legally only count one year toward the P.E.. He needed five years to apply then so he said that he had a B.S. in civil engineering (which in spirit he did but on paper, no). It bothered him

for years that he had lied. So he told the board that he had lied and turned in the P.E.. His company has shrunk to 9 people, and he hopes it will stop there. Business is picking up again. He has a smile on his face, and most of all, he is content with himself .

I would like to toss out a couple of ideas that I would like to have you contemplate related to earthquakes. First of all, do you feel that we should ask DOGAMI to have their seismic hazard maps peer reviewed? Most of them came directly off of the computer from Mathew Mabey without any input/review from the rest of the geological community. At a METRO conference a couple of weeks ago officials from two local communities asked me questions about their local sites. I could not explain why they were in the red zone in both cases. The rating did not match the geology. One site was on bedrock yet had high ground amplification ratings. That does not seem correct. Another place had very tight, thin Willamette silts in an upland area yet had a high liquefaction rating. Again, I could not explain why. The ratings did not seem logical. I know that others of you have noted similar problems. Should we ask DOGAMI about their maps? I will bring it up at our meeting this month. Secondly, I would propose that we support a move to upgrade the seismic building code for the coast to zone 4. Any feedback would be helpful. The AEG book is almost done (come to the meeting for the latest outline), and the national meeting is looking great! See you at the meeting this month.

Scott Burns, Oregon Chair

AEG Case Histories Book:

The last editors meeting will be April 22 at PSU from 5:30 - 6:30 PM (note the change from April 15). As of today we have 62 of the 75 articles turned in with 51 of those totally reviewed (each by two people). I will be flying to San Francisco to turn in the disks and figures and hard copy on April 25 - that will be the final deadline. We will need all completed papers and disks back from the authors by April 21. The editors voted to dedicate the book to Herb Schlicker and Jasper Holland, two very important early engineering geologists in Oregon. The publisher will be returning galley proofs to authors over the summer.

Scott Burns, Editor

UPDATE OF NEWS FROM "NATIONAL AEG"

In two weeks we will have the mid-year board meeting of the national council for AEG, it will be held in Los Angeles. As the chair of the Oregon Section, I will be representing us there. Gary Peterson will also be there pumping people up about our meeting.

It was announced this week that the new executive director of AEG is Norm Tilford. I feel that he is an excellent choice. He is a professor of engineering geology at Texas A & M University. He has been the editor of the journal for over ten years. He will be presented at the mid-year board meeting.

Short news items:

1) Special April Meeting in Roseburg: Sue D'Agnes and Mike Long have to be thanked for a great meeting last week in Roseburg. John Seward joined Mike and Sue in presenting a super program on landslides (mainly debris flows and debris torrents) from this past year in southwestern Oregon. We had 17 people attend the meeting! There were friends from ODOT, U.S. Forest Service, a contingent from Eugene led by Doug Williamson and Ewart Baldwin, and a Portland contingent (Scott Burns, Dave Scofield, and Bill Hagge). There is talk of another meeting in June in Eugene. They named themselves the 541 subsection of the Oregon Section, and they hope to hold three meetings a year (one each in Eugene, Roseburg and Medford). It sounds like a great idea. We might try to get a couple of meetings going over in Boise, too, which is part of our section.

2) We need photos: Here is your chance to get a favorite photo that you have published. Contact Scott Burns, 725-3389 for details. Bring a slide or print to the next meeting. We have received some very good ones so far. We need cover photos for the AEG Case Histories book.

3) Check out AEG on the WEB: <http://geoweb.tamu.edu/aeg/>

4) Check out the Web Page for the Student Chapter at Portland State:

<http://www.geol.pdx.edu/AEG>

5) Job Openings:

a) Wanted: Geologist/hydrogeologist: small company in Salem area is seeking a geologist/hydrologist with 5-10 years of experience. Background should include construction management with UST, soil matrix and groundwater cleanup. Good knowledge of chemistry and soil science. Position will work into full time after 60 days; contact Michael at TCB Industrial Corporation, 503-788-8344.

6) Looking for Jobs:

a) Debra Doyle, 2015 Thompson Ave., Vancouver, WA 98660, telephone (360-750-1432); email: ddoyle@pacifier.com; Debbi just received her MS in geology from Portland State. Her experience is in the area of: shoreline erosion, soils, environmental geology.

7) Update from Salem: House bills that are of interest to geologists:

a) SB 198: requires seller of a home to disclose information on geotechnical hazards that affect property at time of sale or transfer.

b) SB 984: creates private sector landslide protection tax credit; it requires landowner to establish permanent easement on land to claim credit; requires State Forester to certify land as eligible for credit; requires State Board of Forestry to adopt rules; requires State Forester to develop Human Safety Impact Statement for certain forestry operations.

HB 2082: increases maximum fine for violation of statutes governing practice of geology to \$5000 for each offense (from \$1000).

HB 2083: eliminates requirement that State Board of Geologist Examiners publish annual roster of geology businesses; requires board to produce roster upon request and payment of cost of production.

HB 2448: allows DOGAMI to exercise discretion in issuing notice of violation of mining operation permit, reclamation plan, statutes and rules; allows DOGAMI to recover against bond, reclaim area and to impose civil penalty if operator fails to comply with department order to rectify deficiencies.

HB 2449: requires DOGAMI to consult with other state agencies to ensure consistency in regulation of surface mining monitoring wells; permits DOGAMI to enter into agreements to act on behalf of agencies with regard to regulation of surface mining monitoring wells.

8) News from the Board of Geologist Examiners: The board is looking for volunteers to proctor both the CEG and RG exams which will both be on April 18, 1996 in Salem. The telephone number for the board is 503-378-4180.

9) New members: We would love to welcome these new members who have joined AEG in the past month:

- a) Aisha Dennis, student at Portland State University
- b) Diana Baker, student at Portland State University

10) Review for the CEG Exam in Oregon. I generally get a few calls each year from geologists trying to review for the CEG exam. Since there are not enough people taking the exam each year to warrant a review course at Portland State, I recommend to them the following ways to review for the exam:

a) Take our course (or audit it) on Engineering Geology at Portland State. It will be offered next winter quarter (January - March) and it is offered in the evening. There are weekly problem sets which really help in review.

b) Buy the book used in the above class: R.B. Johnson and J.V. DeGraff, 1988, Principles of Engineering Geology, Wiley and Sons.

c) Buy the lab manual used in the above class: R.B. Johnson and J.V. DeGraff, 1994, Engineering Geology, a Laboratory Manual, Macmillan Pub..

d) Buy the study manuals, problem sets, and practice quizzes package put out by Reg Review Inc. of California for \$165. It is an excellent package! It has been developed for the California CEG which is very similar to the Oregon CEG. To order this package, call Lisa Dirth at 603-472-3050 or email (rgreviewnh@aol.com) or write Lisa (she has moved to New Hampshire) at : Reg Review, 37 Rosewell Road, Bedford, New Hampshire 03110.

11) Next ASCE Geotech Meeting: Wednesday, May 7, 1997 at the Sweetbriar Inn. The presentation will be a panel discussion of the "Changing Geo-Landscape for Education Practice" led by Dr. Trevor Smith of Portland State.

12) Early Bird Announcement of 23rd Northwest Geotechnical Workshop: It will be held this summer in Boise, Idaho from August 18-22, 1997. If you are interested in attending and presenting an abstract, call Barry Siel, 303-969-5772 or barry.siel@fhwa.dot.gov. Abstracts are due June 30, 1997.

13) Seismic Hazards Analysis Short Course in Menlo Park: The San Francisco Section of AEG is sponsoring a short course, May 3, 1997 from 8 AM to 5 PM in Menlo Park, California. Contact Jack Alt (510-791-1986). Cost is \$95 for members of AEG.

14) Seismic Rehabilitation Supplement Report: Contact Angie Karel (503-731-4100) if you are interested in receiving a copy of this report that was commissioned by the Portland Development Commission and the City of Portland Bureau of Buildings. It provides an analysis and estimate of the fiscal and economic impacts on the state and on local governments of implementing proposed seismic rehabilitation incentives. It is the final report of the Oregon Seismic Rehabilitation Task Force.

“AEG - OFFICERS”

1996 - 1998

(* - means area code 541)

(N.M. - means National Meeting)

Position	Name	Telephone		
		Daytime	Home	FAX
Chair	Scott Burns	725-3389	692-9618	725-3025
Chair-Elect	Dave Michael	359-7448	357-0238	357-4548
Newsletter	“			
Secretary	Charlie Hammond	452-1100	274-1437	452-1528
Treasurer	Diane Murbach	228-7718	538-8352	228-7781
Past Chair	Sue D’Agnese	*957-3595	*673-1797	*957-3604
N.M. Treasurer	“			
Membership	Ed Stearns		661-0462	
N.M. Tech. Sessions	“			
N.M. Chair	Gary Peterson	635-4419	697-3100	635-1430
N.M. Field Trips	T & D Kuper	228-7718	638-9722	228-7781
N.M. Publicity	Ken Walsh		652-6107	833-6844
N.M.Short Courses	Mei-Mei Wang	731-4100		731-4066

**Converging at
Cascadia**



PORTLAND, OREGON

Serving Professionals in Engineering, Environmental and Ground Water Geology

The Oregon Section of the Association of Engineering Geologists is proud to host
AEG's 40th Annual Meeting at the Portland Hilton Hotel.
Converging at Cascadia

The Portland Hilton is ideally suited, and completely remodeled, for the 40th Annual Meeting. With magnificent French windows, colorful awnings and Italian granite, the Portland Hilton is at the center of the vibrant downtown business and entertainment district. Located nine miles from Portland International Airport, the hotel is close (a short walk) to the performing arts centers, concert halls, museums, and features abundant shopping opportunities with Niketown, Nordstroms, and Columbia Sportswear merely out the hotel door. The Willamette River waterfront is a short walk, and since the AEG '97 visitor is located within the fareless downtown transit area, and 1-block from Portland's award winning light rail system, MAX, you can truly feel free to explore and enjoy, without the need of transportation. The Annual Committee cordially invites you to attend our meeting. Bring your spouse, your family, or a friend and enjoy all that we have to offer at our 40th Annual Meeting!

Geology Portland, Oregon lies at the confluence of the Willamette and Columbia Rivers, and encompasses a four-county area. The Portland landscape owes much of its form and beauty to catastrophic geologic events. Sixteen million years ago, lava of the remarkable Columbia River Basalt spread across the area enroute to the coast. About one to two million years ago, dozens of cinder and lava cones developed on the eroded surfaces of the ancient lava and through valley fills; Portland is the only city with a Pleistocene volcano within its boundaries. The great Cascades stratovolcanos near Portland, Mt. Hood, Mt. St. Helens and Mt. Adams, also grew to magnificence during this time. Twelve to Fifteen thousand years ago, Portland was inundated by glacial outburst floods from Lake Missoula. These repetitive floods created the channelled scablands of Washington, then rushed through the Columbia River gorge, tearing vigorously at the flanks of the volcanic hills and spreading thick sheets of sand and gravel across the area to form a great "delta" in the Portland Basin. More recently, geologic evidence has been unraveled that provides a record of great earthquakes, with magnitudes estimated up to 9 and above along the Oregon and Washington coast, just an hour from the Portland area. We invite you all to Converge on Cascadia, the home of many who enjoy the scenic wonder and geology of our great area. To acquaint you with our region, many **Field Trips** are being offered for your enjoyment:

South Oregon Coast Landslides--This two-day field trip will begin in Crescent City, California, and travel along the rugged Oregon coastline through melange terrain containing over 30 landslides. Highlights include slides made up one hundred million cubic yards of moving material, to a nearly completed drainage stabilization program including a 200 foot deep, 18-foot drainage shaft in the Arizona Inn landslide. An overnight stay in Gold Beach places you at the mouth of the famous Rogue River. The trip will end at the convention hotel in Portland.

North Oregon Coast Landslides--This one-day field trip will provide a flavor of the Oregon coast, as we traverse the coastal mountains to the ocean and back along key state highways that have experienced numerous large- and small-scale landslides and debris flows. Included in our visits will be the Wilson River Slide, a 40 year old tunnel suffering distress along U.S. 101, and major ocean front rockslide stabilization projects.

Mt. Saint Helens--In addition to the geology of the blast zone, this one-day field trip will focus on engineering geology of the new 38-mile highway constructed into the national monument. Included are a major sediment retention dam built to contain debris avalanche deposits, the Spirit Lake Outlet Tunnel, and David Johnston Ridge which provides dramatic views into the crater. Much of this area is newly opened to the public.

AEG 97 40th Annual Meeting, September 30-October 4, 1997

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Mel Mel Wang
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(503) 731-4100

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Sue D'Agnese
FINANCE
(541) 957-3595

Tom Kuper
FIELD TRIPS
(503) 228-7718

Dave Michael
EXHIBITORS
(503) 357-2191

Columbia River Gorge--This trip through the beautiful Columbia River Gorge Scenic Area will feature visits to the Bonneville Locks and Dam complex with emphasis on the extraordinary complex engineering geology faced by recent construction. In addition, you will stop at scenic viewpoints to discuss Columbia Gorge Geology and some of the 130 square kilometers of landslides in the gorge. We will also visit recently restored original gorge highway (including tunnels) that have been converted to pedestrian and bike pathways with tremendously scenic vistas.

Geologic Signs of a Great Earthquake--An earthquake near magnitude 9.0 struck western Washington and Oregon in 1700. This field trip, by bus and canoe, will inspect some of the geologic records that document this event, including marshes and forests that suddenly subsided, a sand sheet deposited by the related tsunami, and trees that date the subsidence to late 1699 or 1700. Recent geologic work will also be featured during this trip.

Portland Quick Trips-- Half-day "quick trips" will be offered during the conference to view **Portland's Westside Light Rail System (MAX)**. These short trips will include visits to the 3-mile twin tube tunnel and the deepest underground transit station in North America. This project includes a wide-range of engineering geology and geotechnical features, and will be nearing completion, but not yet in revenue service at the time of the meeting. Secondly, a **Portland Geology** field trip providing an overview of our city will include recent geologic problems generated by landslides, flooding and similar during recent winters.

Full, and half-day pre-meeting **Short Courses**, and in-meeting part-day computer lab courses will include:

Northwest Engineering Seismology	Seismic Hazard Mapping	8-hour OSHA Refresher
Rock Slope Engineering	Stream Restoration/Fluvial Geomorphology	Geoscience GIS
Geoscience on the Internet	Risk Based Corrective Action	Loss Prevention

The popular **Teachers Workshop** will be back, this time with an excellent curriculum that includes individual sessions on earthquake and volcanic hazards.

Along with an exceptional 3-day schedule of **Technical Sessions** emphasizing both environmental and engineering geology, we will have special **symposia** focusing on current "Hot Topics" of regional and national importance, including:

Earthquakes: Converging at Cascadia	Deterministic vs. Probabilistic Seismic Hazard Assessments
Well Head Protection Implementation	Risk Based Corrective Action Weathered Rock Materials
ASTM Standards: How much is enough?	Building Portland's Light Rail System

Casual and entertaining **Guest Activities** are planned:

Explore Downtown--Strolling the streets of Portland is a feast for the senses, where you will find quality shops, galleries, bistros, coffee shops, brew pubs, and major department stores and malls, all within a short walk from the Portland Hilton.

History, Roses and Tea--Visit Washington Park and the famous Rose Test Gardens, with tea at the turn-of-the-century Pittock Mansion. Delightful views of Portland and the Cascades will be found on this trip!

Get the Brews!--Portland has an unsurpassed reputation as the hottest craft beer scene in the country, as well as having more microbreweries than any other city in the nation! This is your chance to visit a variety of Micro Breweries and sample the region's award-winning brews, ales, lagers, porters, and stouts.

Spend a Day at the Beach--Visit the stunning ocean headlands at Ecola State Park, then walk the beach to Haystack Rock, Oregon's signature "sea stack" rock formation. Fine shopping, galleries, and dining await you in the nearby classy and quaint Cannon Beach.

“AEG” CALENDAR:

- April 17** Brian Atwater, “Probabilities of a Great Cascadian Earthquake in the Next 100 Years - the Latest Updates”
- April 22:** Editors meeting, Case Histories Book, PSU, 5:30-6:30PM
- May 15:** Eldon Gath, President of National AEG, “Seismic Hazard Investigation of the San Jacinto Fault through the San Bernadino Valley College” at McMenamins in Beaverton
- August 18-22** NW Geotechnical Workshop, Boise, Idaho
- September 18:** Mark Darienzo and Roger Redfern, Channel changes on the Clackamas River due to the great flood of 1996 and floodplain gravel mining; We will also have an awards ceremony for the AEG book to authors and editors.

MEMBERSHIP

For application forms for Membership in the National AEG, call Ed Stearns who is our membership chair at 661-0462 (h). He will also have copies at the monthly meetings. Membership is on a calendar year basis. Starting this year, if you are a national member, they will collect our local dues of \$10 which just covers our newsletter costs. If you would like to subscribe to the local newsletter (comes out 9 times a year) without being a national member, fill out the form below and mail to Charles Hammond. Note: the following form is only for people and organizations who wish to subscribe to the Oregon AEG Newsletter without being members of the national AEG.

APPLICATION FOR LOCAL MEMBERSHIP IN OREGON SECTION, AEG:

NAME _____

AFFILIATION: _____

MAILING ADDRESS: _____

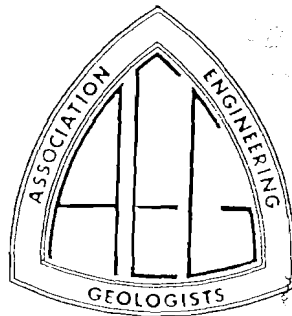
TELEPHONE: _____

Mail form and \$10 to Diane Murbach, David Newton & Associates, 1201 SW 12th. Ave. Suite 400, Portland, OR 97205.

ANNOUNCEMENT OF OUR NEXT EXCITING MEETING

APRIL 17, 1997

AEG



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