

Serving Professionals in Engineering, Environmental,
and Ground Water Geology

OREGON SECTION

NEWSLETTER

The Official Newsletter of the Oregon Section Association of Engineering Geologists

Mar. 1999

VOLUME 99, NUMBER 03

MARCH MEETING:

Speaker: ***Yumei Wang***
President ASCE Geotech group
DOGAMI "Director of earthquake programs"

Title: ***"Earthquake Loss Estimates for Oregon"***
(+ Update on Oregon Earthquake Projects)

Date: **Thursday, March 18, 1999**

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

Where: ***The Old Spaghetti Factory***
715 SW Bancroft
Portland, OR 97201

Located in the Johns Landing area along the Willamette River. On the east side of I-5 access off of Macadam north bound south of Ross Island Bridge meeting room is in the large banquet room on the ground floor behind the lobby

Cost: **\$10**

Meal: Spaghetti with Italian sausage and meat sauce, salad, bread, non-alcoholic beverage and spumoni ice cream.

Reservation: Call the receptionist at David Newton and Assoc., (503) 228-7718. by noon Tuesday, ***A reservation made is a reservation paid.*** Please call to cancel if you cannot attend.
Thank You!

Background on speaker:

Ms. Yumei Wang (Mei Mei) is very active in the Portland geotechnical community. She is currently the ASCE Geotechnical Group President. She is the "Director of Earthquake Programs" for Oregon Department of Geology and Mineral Industries. She is a Registered professional engineer in Oregon. She is a State Commission member of Oregon Seismic Safety Policy Advisory Commission. She is also a member of American Society of Civil Engineers: National council member on technical committee on mitigation, National council member on technical a committee on hazard characterization, National member of earthquake investigation committee of technical council on lifeline earthquake engineering. She is a member of the following organizations: Earthquake Engineering Research Institute, Association of Engineering Geology, Oregon Academy of Sciences, Association of Women Geoscientists, and Advocates for Women in Science, Engineering and Mathematics.

Mei Mei earned a BA in Geological Science, computer science minor, from the University of California Santa Barbara in 1985. She earned an MS in Civil Engineering, geotechnical engineering emphasis, from the University of California, Berkeley in 1988.

She has been a liaison for formulating earthquake hazard reduction policies and educating the professional, public, and private sectors on earthquake hazards. She has worked with media coverage including Associate Press, Oregonian, Oregon Public Broadcasting, and Channel 12 Newsmaker. She has been lead engineer on a landslide, dam and liquefaction project, risk assessments, and earthquake hazard maps involving geological, geotechnical, and geophysical investigations and engineering analyses. She has written earthquake hazard-reduction publications on damage and loss assessment for Oregon: Salem, Oregon maps; and Siletz Bay, Oregon maps. Her consulting projects include liquefaction evaluation at 22 of PG&E's substations in the San Francisco Bay Area, 2-yr. Belden siphon landslide and Echo Lake dam investigation and construction. She had done research on earthquake-induced landslide prediction utilizing GIS. She has published proceeding papers in Earthquake Engineering Research Institute, National Institute of Standards and Technology, Association of Engineering Geology, and Oregon Geology. And she manages an 8 person multidisciplinary staff.

She has organized and conducted numerous conferences and workshops for "Seismic hazard and mitigation" for many groups including the following list. Oregon Building Officials Association, Oregon Planning Institute, Oregon Construction Institute, Geologic Society of America Cordilleran Section 1996, American Society of Civil Engineers Oregon Geotechnical Section 1996, Association of Engineering Geologist 1997 & 1998, Oregon Institute of Technology 1999.

She has made numerous presentations and has published many professional journal articles on the subject of "Earthquake Engineering."

Abstract:

“Earthquake loss estimates for Oregon”

Yumei Wang (Oregon Department of Geology and Mineral Industries, 800 NE Oregon Street #28, Portland, OR 97232; 503-731-4100; meimei.wang@state.or.us).

Oregon is especially vulnerable to earthquake hazards because of its plate tectonic setting on the Pacific ring of fire. Paleoseismic evidence for prehistoric Cascadia subduction zone earthquakes associated with the Juan de Fuca and North American plates include buried marsh soils and drowned forests by coseismic subsidence, tsunami sand deposits, and liquefaction features. Japanese historic documents and Native American legends indicate that the most recent subduction zone earthquake occurred on January 26, 1700. To better prepare the public from future earthquake damage, a quantitative seismic risk assessment was conducted in terms the public can understand: casualties and dollars. Expected ground motions, building damage, and social and economic losses are estimated for two scenarios, (1) a magnitude 8.5 Cascadia subduction zone earthquake off the coast of Oregon, and (2) statewide probabilistic ground motions for a 10% probability of exceedance in 50 years developed by the U.S. Geological Survey. The analyses was conducted using geographic information system (GIS) based HAZUS97 software. It included geologic influence using a 1997 Uniform Building Code soil map based on shear wave velocities. Ground motion maps for peak ground acceleration, peak ground velocity and spectral responses were developed. Expected losses for the magnitude 8.5 earthquake show about 35,000 buildings severely damaged, about 12 billion dollars (\$US) of building damage, and over 7,700 casualties. Expected losses from the probabilistic study are over 80,000 buildings destroyed, over \$30 billion of building damage, and over 24,600 casualties. For each scenario, Oregon counties were ranked according to highest expected losses and loss ratios. Results are being used to help increase earthquake awareness and stimulate risk reduction action.

Message from the Chair:

In February we had a very good talk from Dr. Ken Stokoe II, University of Texas, at the "joint meeting" of the ASCE & AEG. The topic of "In Situ Characterization of Geotechnical Systems with Shear Waves" was very interesting and applicable to many situations. Thanks to ASCE Geotechnical Group for inviting Dr. Stokoe and organizing this meeting.

As I stated last month, Charlie Hammond and I will be off to Vicksburg, to represent Oregon at the national AEG mid-year board meeting in April. Please contact either of us with any section concern or questions that you want us to take to national with us at that time. This is your association and we are your representatives, help us do a good job.

The next two months we will meet at "The Old Spaghetti Factory" again on the third Thursday. We have a very good program planned for this month from Mei Mei Wang (DOGAMI) on "Earthquake loss estimates for Oregon." Mei Mei will also update us on the earthquake projects for Oregon that DOGAMI has been working on. Make sure to attend and hear Mei Mei's talk. Many of you know her and realize how important she is to Oregon's geotechnical community. She will be in her element in this talk with the "earthquake loss" topic.

Next month we hope to have Dave Rankin from Golder Associates (Portland office) speak on the Sunset Tunnel "Forensic Geology Investigation." Dave worked with Duncan Wiley on this investigation for Oregon Department of Transportation. This investigation was just released and the topic should be very interesting to Oregon professionals. The timing is very opportunistic for AEG, since we had an opening just as this project was completed. Dave is checking his availability for the April 15th date and will advise us soon. Thanks to Mike Long of Oregon Department of Transportation for recommending Dave for this talk.

In May we have another great topic, "The Aldercrest – Banyon landslide of Kelso Washington." Ken Buss, A Principle Engineer of GeoEngineers Inc. from Redmond Washington will make this presentation. The meeting will be held in the St. John's McMenamins (address in next month's newsletter). Be sure to spread the word and attend this talk.

I will bring the copies of the AEG correspondence with the Oregon Building Codes Division to this month's meeting for those with interest in that topic.

Dave Michael, Oregon Section Chair 1999

Short news items:

New Metro publication now available: "Landslides in the Portland, Oregon Metropolitan area resulting from the storm of February 1996: inventory map, database, and evaluation" by Scott Burns, Bill Burns, David James and Jason Hinkle of PSU.

a) To order the map and the report/database, the cost is \$20 and you can pick it up at the Data Resource Center at Metro, order it over the phone (797-1725), or order it off of the homepage on the internet: www.metro-region.org.

b) The electronic GIS database (very accurate) of all 705 landslides is almost ready. You can order it on CD for \$20 from Metro (797-1742) or can get an FTP file downloaded from the internet by calling Steve Erickson for further details (797-1595).

Update on the Oregon AEG book: Scott just talked with the publisher from Star Publications in Belmont, California, and he has said that our book, **Environmental, Groundwater and Engineering Geology: Applications from Oregon**, has now sold half of the supply. We originally printed 500 and there are still 250 left. You can purchase it for \$79.95 locally at the Nature of Oregon bookstore, 800 NE Oregon Street in Portland or at the Portland State Bookstore on the PSU campus in Portland on 6th Avenue across from the Cheerful Tortoise Pub. If you don't have a copy, you need to purchase one and have it in your library!

Membership Chair: Tim Blackwood is the new Membership chair. Tim works for Geo-Engineers and can be reached at (503) 603-6663 at work.

Pacific Northwest Mining and Metals Conference April 11-13, 1999 in Portland at the Oregon Convention Center (777 NE Martin Luther King Jr. Blvd). AEG will participate in this conference. We will host two sessions in environmental geology and one in aggregate mine reclamation. Our two groups combined with the GSA group of Portland State to put on a fine meeting in the spring two years ago at the same place call Dave Michael 359-7884 or David James 252-3940 if you have interest and or questions.

AEG Homepage: check it out: [http:// www.aegweb.org](http://www.aegweb.org)

Now available at Portland State: Graduate Certificates in Engineering Geology, Environmental Geology, Hydrogeology, and Hydrology. These certificates are between a BS and an MS degree. They take only 18 hours of graduate work in the subject matter and have no thesis with them. Most of the courses are in the evenings. Call Scott Burns for more information: 725-3389.

The Board of Geologist examiners has relocated as of January 4, 1999, the new information is as follows: 707 13th. St. SE, Suite 275 Salem, OR, 97301 Phone (503) 566-2837, Fax (503) 362-6393 Please contact Administrative Assistant to the Board **Susanna R. Knight** for assistance with Board issues.

NOTICE

Public review of new Portland area earthquake maps April 6th 1:00 to 2:30

Portland State Office Building, Lloyd District
800 NE Oregon St., room 140

Ivan Wong from URS Greiner Woodward Clyde and colleagues are developing earthquake scenario and probabilistic ground shaking maps for the Portland metropolitan area. These GIS-based maps display color-contoured ground motion values in terms of peak horizontal acceleration and horizontal spectral accelerations at 0.2 and 1.0 sec periods. The maps depict ground shaking at the ground surface and thus incorporate the site response effects of soils and near-surface unconsolidated sediments. The scenario maps are for a moment magnitude (MW) 9.0 earthquake on the Cascadia subduction zone and a MW 6.8 event on the Portland Hills fault. The probabilistic maps are for the two return periods of building code relevance, 500 and 2,500 years. The maps will be published by the Oregon Department of Geology and Mineral Industries (DOGAMI). The maps can be used by local government agencies, the engineering, urban planning, emergency preparedness and response communities, and the general public.

For questions, call Ivan Wong 510-893-3014 or Yumei Wang 503-731-4100.

Yumei Wang
Oregon Department of Geology and Mineral Industries (DOGAMI)
800 NE Oregon Street #28
Portland, OR 97232
(503) 731-4100 ext. 226

“AEG CALENDAR”

March 18, 1999: AEG Section mtg. Yumei Wang PE “Earthquake loss estimates for Oregon”
 (= update on Oregon’s earthquake projects)

April 15, 1999: AEG Section Mtg. ?? Dave Rankin ?? Sunset Tunnel ?? (to be confirmed)

April 28-30, 1999: 34th Engineering Geology and Geotechnical Engineering Symposium, Utah State University, Logan, Utah

May 20, 1999: AEG Section Mtg. Ken Buss PE “Aldercrest – Banyon landslide of Kelso WA”

June 6-9, 1999: Rock Mechanics for Industry Symposium, Vail, Colorado

Sept. 18-19, 1999: Friends of the Pleistocene trip in the Columbia Gorge

Sept. 26 – 29, 1999: AEG National Meeting in Salt Lake City

1999 AEG - OFFICERS

Position	Name	Telephone		
		Daytime	Home	FAX
Chair	Dave Michael	359-7448	357-0238	357-4548
Newsletter	“			
Chair-Elect	Charlie Hammond	452-1100	274-1437	452-1528
Secretary	Diane Murbach	538-8352	538-8352	538-8353
Treasurer	Monte Murbach	228-7718	538-8352	228-7781
Past Chair	Scott Burns	725-3389	692-9618	725-3025
Membership	Tim Blackwood	603-6663	236-7792	620-5940

MEMBERSHIP

For application forms for Membership in the National AEG, call Tim Blackwood the membership chair at (503) 606-6663 (w). He will also have copies at the monthly meetings. Membership is on a calendar year basis. 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 Monte Murbach. Note: the following form is only for people and organizations that 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: _____

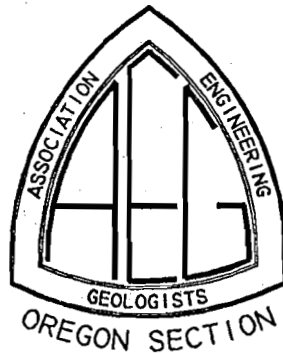
TELEPHONE: _____

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

ANNOUNCEMENT OF OUR NEXT EXCITING MEETINGS

MARCH 18, 1999

AEG



Dave Michael, Editor
Oregon Chapter, AEG
c/o ODF NWOA
801 Gales Creek Rd.
Forest Grove, OR 97116



MAR 11 1999

Charles M. Hammond
Cornforth Associates
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