Serving Professionals in Engineering, Environmental, and Ground Water Geology

OREGON SECTION

# NEWSLETTER

The Official Newsletter of the Oregon Section Association of Engineering Geologists

Apr. 1996 VOLUME 96, NUMBER 4

## *NO APRIL MEETING:*

## *Cordilleran Section GSA Annual Meeting*

**Portland, Oregon: April 19 - 24**
**Red Lion Inn, Lloyd Center**

Program of events attached

*"See You at GSA!"*

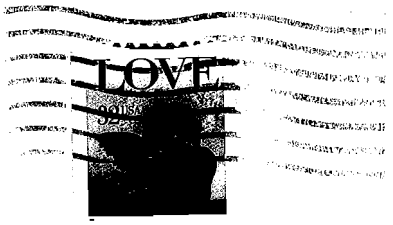
## *ANNOUNCEMENT OF OUR NEXT EXCITING MEETING*

***May 24, 1996***

# *AEG*

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

PORTLAND, OR
APR 13 PM
1996




APR 15 1996

Hammond, Charles M.
Cornforth Associates
10250 SW Greenburg Rd #111
Portland, OR 97223-5460

97223-5460 55

# *SHORT NEWS ITEMS:*

1) **Last month's mtg:** *Thank you to Erik Rorem for his talk*
***"Rock Fall Analysis and Stabilization Design"***

2)**Next month's mtg:**

Date: Thursday, May 23, 1996

Place: to be announced

Speaker: ***Susan Steil Weir***
AEG National President

3) **ASCE Geotech Group:**

Date: Wednesday, May 1, 1996

Place : *to be announced*

Program: ***"COLUMBIA SLOUGH CSO CONSOLIDATION CONDUIT"***

Speaker: ***BILL RYAN***
City of Portland

4) **GSA Annual Mtg.:** "Cordilleran Section of the Geological Society of America and Pacific Northwest Metals and Minerals Joint Conference" Portland Oregon April 19 - 24 @ Red Lion Inn, Lloyd Center

5) **AEG '97 Committee:** Dinner Meeting with ***Julie Keaton***
Red Lion Inn Lloyd Center 6:00 pm

6) **Chapter Editors Book Mtg:** May 14 5:30 pm - 6:30 pm PSU

7) **Field Trip to "Barney Reservoir:** June 23 ***Charlie Hammond***, Cornforth Consultants

# PROGRAM OF EVENTS

| EVENT | TIME | LOCATION |
|---|---|---|
| **FRIDAY, APRIL 19, 1996** | | |
| *Morning* | | |
| **Field Trips** | | |
| # 2—Applied Paleoflood Hydrology in North-Central Oregon | 8:00 a.m. | Red Lion Hotel–Lloyd Center |
| *Afternoon* | | |
| # 8—The Rattlesnake Tuff and High Lava Plains of Southeastern Oregon | 4:00 p.m. | Red Lion Hotel–Lloyd Center |
| **SATURDAY, APRIL 20, 1996** | | |
| *Morning* | | |
| **Field Trips** | | |
| # 1—The Building Stone and Landscaping Boulder Industries of Western Washington | 7:45 a.m. | Red Lion Hotel–Lloyd Center |
| # 3—Quaternary Crustal and Subduction Earthquakes in the Coos Bay Area, Southern Oregon Coast | 7:00 a.m. | Red Lion Hotel–Lloyd Center |
| # 4—Deschutes Basin, A Medial and Distal Record of Cascades Volcanism | 7:45 a.m. | Red Lion Hotel–Lloyd Center |
| # 5—Columbia River Basalt Intracanyon Flows in Western Oregon and Washington, Ginkgo, Rosalia, and Pomona | 7:00 a.m. | Red Lion Hotel–Lloyd Center |
| # 6—Landslides of the Oregon Coast Range | 8:00 a.m. | Red Lion Hotel–Lloyd Center |
| **Earth Science Education Field Studies** *(Being held at Portland State University)* | | |
| Geology and Eruption History of Mount St. Helens | 7:30 a.m. | Geology Dept., Cramer Hall |
| Geologic Evolution of the Columbia River Gorge | 7:30 a.m. | Geology Dept., Cramer Hall |
| **SUNDAY, APRIL 21, 1996** | | |
| *Morning* | | |
| **Field Trips** | | |
| # 7—Mount St. Helens Engineering Geology of Highway 504, Sediment Retention Structure and the Spirit Lake Tunnel | 8:00 a.m. | Red Lion Hotel–Lloyd Center |
| # 9—Geologic History of Mt. Hood Volcano | 7:30 a.m. | Red Lion Hotel–Lloyd Center |
| **Earth Science Education Field Studies** *(Being held at Portland State University)* | | |
| Hydrology, Geology, and Biological Productivity in a Constructed Wetland | 8:00 a.m. | Geology Dept., Cramer Hall |
| Engineering Geology of the Light Rail Tunnel Through the Portland West Hills | 8:00 a.m. | Geology Dept., Cramer Hall |
| Roy Shlemon Memorial Lecture—Applied Geology Program | 8:30 a.m. | Geology Dept., Cramer |
| **Earth Science Education Workshops** *(Being held at Portland State University)* | | |
| # 1 | 8:30 a.m.–10:00 a.m. | Geology Dept., Cramer |
| # 2 | 8:30 a.m.–10:00 a.m. | Geology Dept., Cramer |
| # 3 | 8:30 a.m.–10:00 a.m. | Geology Dept., Cramer |
| # 4 | 10:30 a.m.–12:00 noon | Geology Dept., Cramer |
| # 5 | 10:30 a.m.–12:00 noon | Geology Dept., Cramer |
| # 6 | 10:30 a.m.–12:00 noon | Geology Dept., Cramer |
| *Afternoon* | | |
| **Earth Science Education Field Studies (Repeats)** *(Being held at Portland State University)* | | |
| Hydrology, Geology, and Biological Productivity in a Constructed Wetland | 1:00 p.m. | Geology Dept., Cramer |
| Engineering Geology of the Light Rail Tunnel through the Portland West Hills | 1:00 p.m. | Geology Dept., Cramer |
| **Earth Science Education Workshops (Repeats)** *(Being held at Portland State University)* | | |
| # 1 | 1:00 p.m.–2:30 p.m. | Geology Dept., Cramer |
| # 2 | 1:00 p.m.–2:30 p.m. | Geology Dept., Cramer |
| # 3 | 1:00 p.m.–2:30 p.m. | Geology Dept., Cramer |
| # 4 | 3:00 p.m.–4:30 p.m. | Geology Dept., Cramer |
| # 5 | 3:00 p.m.–4:30 p.m. | Geology Dept., Cramer |
| # 6 | 3:00 p.m.–4:30 p.m. | Geology Dept., Cramer |
| Registration | 4:30 p.m.–8:00 p.m. | Ballroom Fo |
| Welcoming Reception | 6:00 p.m.–9:00 p.m. | Exhibit |
| Exhibits | 6:00 p.m.–9:00 p.m. | Exhibit I |
| **MONDAY, APRIL 22, 1996** | | |
| *Morning* | | |
| Registration | 7:30 a.m.–4:30 p.m. | Ballroom Fo |
| NAGT–Pacific Section Breakfast | 7:00 a.m.–8:30 a.m. | Washington Ro |
| Committee on Geology and Public Policy Breakfast | 7:00 a.m.–8:30 a.m. | Idaho Ro |
| Exhibits | 8:00 a.m.–5:00 p.m. | Exhibit I |
| **Oral Sessions** | | |
| Earthquake Potential in the Pacific Northwest – I | 8:10 a.m.–12:00 noon | Multn |
| Cordilleran Granites: A Symposium in Honor of Paul C. Bateman | 8:20 a.m.–12:00 noon | Ho |
| PNMMC: Energy, Materials and Technologies | 8:20 a.m.–12:00 noon | Bro |
| PNMMC: Environmental Compliance | 8:20 a.m.–11:30 a.m. | Ross |
| PNMMC: Economic Geology | 9:00 a.m.–12:00 noon | H |
| Engineering Geology/Environmental Geology | 9:00 a.m.–12:00 noon | W |

| | | |
|---|---|---|
| Roy Shlemon Mentors in Applied Geology Program | 8:30 a.m. | Geology Dept., Cramer Hall |

**Earth Science Education Workshops**
***(Being held at Portland State University)***

| | | |
|---|---|---|
| # 1 | 8:30 a.m.–10:00 a.m. | Geology Dept., Cramer Hall |
| # 2 | 8:30 a.m.–10:00 a.m. | Geology Dept., Cramer Hall |
| # 3 | 8:30 a.m.–10:00 a.m. | Geology Dept., Cramer Hall |
| # 4 | 10:30 a.m.–12:00 noon | Geology Dept., Cramer Hall |
| # 5 | 10:30 a.m.–12:00 noon | Geology Dept., Cramer Hall |
| # 6 | 10:30 a.m.–12:00 noon | Geology Dept., Cramer Hall |

Afternoon

**Earth Science Education Field Studies (Repeats)**
***(Being held at Portland State University)***

| | | |
|---|---|---|
| Hydrology, Geology, and Biological Productivity in a Constructed Wetland | 1:00 p.m. | Geology Dept., Cramer Hall |
| Engineering Geology of the Light Rail Tunnel through the Portland West Hills | 1:00 p.m. | Geology Dept., Cramer Hall |

**Earth Science Education Workshops (Repeats)**
***(Being held at Portland State University)***

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| # 1 | 1:00 p.m.–2:30 p.m. | Geology Dept., Cramer Hall |
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| # 4 | 3:00 p.m.–4:30 p.m. | Geology Dept., Cramer Hall |
| # 5 | 3:00 p.m.–4:30 p.m. | Geology Dept., Cramer Hall |
| # 6 | 3:00 p.m.–4:30 p.m. | Geology Dept., Cramer Hall |

| | | |
|---|---|---|
| **Registration** | 4:30 p.m.–8:00 p.m. | Ballroom Foyer |
| **Welcoming Reception** | 6:00 p.m.–9:00 p.m. | Exhibit Hall |
| **Exhibits** | 6:00 p.m.–9:00 p.m. | Exhibit Hall |

## MONDAY, APRIL 22, 1996

Morning

| | | |
|---|---|---|
| **Registration** | 7:30 a.m.–4:30 p.m. | Ballroom Foyer |
| **NAGT–Pacific Section Breakfast** | 7:00 a.m.–8:30 a.m. | Washington Room |
| **Committee on Geology and Public Policy Breakfast** | 7:00 a.m.–8:30 a.m. | Idaho Room |
| **Exhibits** | 8:00 a.m.–5:00 p.m. | Exhibit Hall |

| | | |
|---|---|---|
| Oral Sessions | | |
| Earthquake Potential in the Pacific Northwest—I | 8:10 a.m.–12:00 noon | Multnomah |
| Cordilleran Granites: A Symposium in Honor of Paul C. Bateman | 8:20 a.m.–12:00 noon | Holladay |
| PNMMC: Energy: Materials and Technologies | 8:20 a.m.–12:00 noon | Broadway |
| PNMMC: Environmental Compliance | 8:20 a.m.–11:30 a.m. | Rose Island |
| PNMMC: Economic Geology | 9:00 a.m.–12:00 noon | Halsey |
| Engineering Geology/Environmental Geology | 9:00 a.m.–12:00 noon | Weidler |

Afternoon

| | | |
|---|---|---|
| Oral Sessions | | |
| Earthquake Potential in the Pacific Northwest—II | 1:10 p.m.–5:30 p.m. | Multn |
| Cordilleran Granites: A Symposium in Honor of Paul C. Bateman | 1:30 p.m.–5:00 p.m. | Ho |
| PNMMC: Environmental Non-Compliance | 1:30 p.m.–5:00 p.m. | Bro |
| PNMMC: Waste Management and Reclamation in Manufacturing | 1:30 p.m.–4:30 p.m. | Ross |
| PNMMC: Northwest Area Reports: Geology and Mineral Resource Developments in Northwestern United States and Canada | 1:30 p.m.–5:00 p.m. | J |
| Structural Geology/Tectonics | 1:30 p.m.–5:30 p.m. | W |
| Ground Water Hydrology and Geology | 1:40 p.m.–4:40 p.m. | St. |
| Poster Sessions | | |
| PNMMC: Materials and Joining | 1:30 p.m.–5:30 p.m. | Exhib |
| Undergraduate Research | 1:30 p.m.–5:30 p.m. | Exhib |
| Engineering and Environmental Geology | 1:30 p.m.–5:30 p.m. | Exhib |
| Site Characterization and On-site Remedial Solutions | 1:30 p.m.–5:30 p.m. | Exhib |
| Using G.I.S. in Geologic Mapping | 7:00 p.m.–9:00 p.m. | Portland |

## TUESDAY, APRIL 23, 1996

Morning

| | | |
|---|---|---|
| Registration | 7:30 a.m.–4:30 p.m. | Ballroom |
| Committee on Education Breakfast | 7:00 a.m.–8:30 a.m. | Washington |
| Exhibits | 8:00 a.m.–5:30 p.m. | Exhib |
| Oral Sessions | | |
| Earthquake Potential in the Pacific Northwest—III | 8:00 a.m.–12:00 noon | Multn |
| Integrating Geomorphic Processes in the Management of Ecosystems—I | 8:00 a.m.–12:00 noon | Mt. Ba |
| PNMMC: Environmental Concerns of Mine Waste Disposal—I | 8:00 a.m.–12:00 noon | Three |
| Cordilleran Granites: A Symposium in Honor of Paul C. Bateman—III | 8:15 a.m.–12:00 noon | Ho |
| PNMMC: The Future of Aggregate in the Northwest—A Vital Resource to a Growing Area | 8:30 a.m.–11:40 a.m. | St. |
| PNMMC: Infrastructure: Design and Materials | 8:30 a.m.–12:00 noon | W |
| Geologic Evolution of the Oregon Plateau | 8:30 a.m.–12:00 noon | Mt |
| PNMMC: Materials: From cradle back to cradle | 8:50 a.m.–11:30 a.m. | Bro |
| Poster Sessions | | |
| NAGT: Educating Today for Tomorrow's World | 8:00 a.m.–12:00 noon | Exhib |
| Igneous Petrology | 8:00 a.m.–12:00 noon | Exhib |
| Volcanology | 8:00 a.m.–12:00 noon | Exhib |
| Accreted Terranes of the Western Cordillera | 8:00 a.m.–12:00 noon | Exhib |
| Tuesday Luncheon "Glaciers and Global Climate Change" | 12:00 noon–1:30 p.m. | Pacific Northwest Ba |

Oral Sessions

IEE: Site Characterization and On-site Remedial Solutions—I ..... 1:30 p.m.–5:10 p.m. ..... Multnomah

Accreted Terranes of the Western Cordillera—I ..... 1:30 p.m.–5:10 p.m. ..... Broadway

Integrating Geomorphic Processes in the Management of Ecosystems—I ..... 1:30 p.m.–4:10 p.m. ..... Mt. Bachelor

PNMMC: Environmental Concerns of Mine Waste Disposal—I ..... 1:30 p.m.–5:00 p.m. ..... Three Sisters

PNMMC: Failure Analysis ..... 2:00 p.m.–4:30 p.m. ..... Weidler

NAGT: Educating Today for Tomorrow's World ..... 1:30 p.m.–5:30 p.m. ..... St. Helens

Paleontology/Sedimentary Geology ..... 1:50 p.m.–4:10 p.m. ..... Mt. Hood

Quaternary Faulting in California and Nevada ..... 1:50 p.m.–4:50 p.m. ..... Holladay

Poster Sessions

Cordilleran Granites: A Symposium in Honor of Paul C. Bateman ..... 1:00 p.m.–5:00 p.m. ..... Exhibit Hall

Mesozoic and Early Tertiary Evolution of Southern California, Arizona, and Nevada ..... 1:00 p.m.–5:00 p.m. ..... Exhibit Hall

Earthquake Potential in the Pacific Northwest ..... 1:00 p.m.–5:00 p.m. ..... Exhibit Hall

Earthquake Hazards: Learning from Past Disasters ..... 1:00 p.m.–5:00 p.m. ..... Exhibit Hall

Informal Poster Presentations by K–12 Educators ..... 5:00 p.m.–7:30 p.m. ..... Exhibit Hall

**Paul C. Bateman Reception** ..... 6:00 p.m.–9:00 p.m. ..... Mt. Bachelor/Mt. Hood Rooms

**Tuesday Evening Gathering** ..... 6:00 p.m.–7:30 p.m. ..... Exhibit Hall

Award being given for "Best Poster" ($300) in Undergraduate Research Poster Session

**Earthquakes in the Pacific Northwest: Preparing for the Future** ..... 7:25 p.m.–9:30 p.m. ..... Multnomah/Holladay

## WEDNESDAY, APRIL 24, 1996

### Morning

**Registration** ..... 7:30 a.m.–11:30 a.m. ..... Ballroom Foyer

**Exhibits** ..... 8:00 a.m.–3:00 p.m. ..... Exhibit Hall

Field Trip

#10—PNMMC: Tour of Oregon Steel Mills ..... 9:00 a.m. ..... Red Lion Hotel–Lloyd Center

Oral Sessions

Earthquake Hazards: Learning from Past Disasters ..... 8:10 a.m.–12:00 noon ..... Multnomah

Site Characterization and On-site Remedial Solutions—II ..... 8:10 a.m.–12:00 noon ..... Holladay

IEE and Portland Water Bureau: Geoscience Input in Water Resources Decision Making: Case Studies from Portland, Oregon ..... 8:20 a.m.–12:00 noon ..... St. Helens

Igneous Petrology—I ..... 8:20 a.m.–12:00 noon ..... Three Sisters

Stratigraphy ..... 8:20 a.m.–12:00 noon ..... Mt. Bachelor

Mesozoic and Early Tertiary Evolution of Southern California, Arizona, and Nevada—I ..... 8:30 a.m.–12:00 noon ..... Mt. Hood

Accreted Terranes of the Western Cordillera—II ..... 8:40 a.m.–12:00 noon ..... Broadway

The Last Glaciation in Western North America ..... 8:50 a.m.–12:00 noon ..... Weidler/Halsey

Poster Sessions

Quaternary Faulting California and Nevada ..... 8:00 a.m.–12:30 p.m. ..... Exhibit I

Paleontology/Sedimentary Geology ..... 8:00 a.m.–12:30 p.m. ..... Exhibit I

Geologic Evolution of the Oregon Plateau ..... 8:00 a.m.–12:30 p.m. ..... Exhibit I

Business Luncheon of the Cordilleran Section ..... 12:00 noon–1:30 p.m. ..... Morrison Ro

### Afternoon

Oral Sessions

Earthquake Hazards: Learning from Past Disasters—II ..... 1:30 p.m.–5:10 p.m. ..... Multnom

Site Characterization and On-site Remedial Solutions—III ..... 1:30 p.m.–5:30 p.m. ..... Holla

Mesozoic and Early Tertiary Evolution of Southern California, Arizona, and Nevada—II ..... 1:30 p.m.–4:40 p.m. ..... Mt. H

Accreted Terranes of the Western Cordillera—III ..... 1:30 p.m.–5:30 p.m. ..... Broad

Igneous Petrology—II/Volcanology ..... 1:30 p.m.–5:10 p.m. ..... Three Sis

Quaternary Geology/Geomorphology ..... 1:30 p.m.–5:10 p.m. ..... Mt. Bache

Poster Sessions

The Last Glaciation in Western North America ..... 1:30 p.m.–5:30 p.m. ..... Exhibit H

Stratigraphy ..... 1:30 p.m.–5:30 p.m. ..... Exhibit H

Field Trip

#11—Geologic and Tectonic Evolution of a Middle to Late Jurassic Marginal Ocean Basin, Northern Klamath Mountains Province ..... 6:00 p.m. ..... Red Lion Hotel–Lloyd Cent

**Informal Evening at OMSI** ..... 6:00 p.m.–8:45 p.m. ..... Red Lion Hotel–Lloyd Cent

Shuttles leave every 10 minutes

## THURSDAY, APRIL 25, 1996

### Morning

Field Trip

#12—Evidence of the Missoula Floods and Quaternary Geology in the Portland Area ..... 8:00 a.m. ..... Red Lion Hotel–Lloyd Cent

GSA Technical Session: Earthquake Hazards, Learning from Past Disasters I and II
Portland Red Lion Lloyd Center
8:10 - 5:30 April 24, 1996
Chair- Yumei Wang

Morning Session Moderators- Yumei Wang and Robert Schuster

| Time | Title | Authors |
|---|---|---|
| 8:10 - 8:20 | Introduction | |
| 8:20 - 8:40 | Earthquake Ground Shaking in the Pacific Northwest: Past, Present and Future - 5940 | Ivan Wong |
| 8:40 - 9:00 | Surface-Exposure Dating of Precariously Balanced Boulders: An Application for Seismic Hazard Studies in California and Nevada - 28271 | John W. Bell, James N. Brune, Tanzhuo Liu, Marek Zreda, Ronald I.Dorn |
| 9:00 - 9:20 | Ground Failures Caused by the Robinson Point Earthquake, Southern Puget Sound Region, Washington - 27606 | Stephen Palmer, L J. Moses |
| 9:20 - 9:40 | Observations of Soil Deformation in Three Moderate Earthquakes in the Western US - 28665 | Matthew A. Mabey |
| 9:40 - 10:00 | Width Distribution of Clastic Dikes Generated by the 1964 Great Alaska Earthquake in the Portage-Twentymile River Area - 38759 | Timothy Walsh, Gerald L. Black, Rodney Combellick |
| 10:00 - 10:20 | BREAK | |
| 10:20 - 10:40 | Earthquake-Induced Landslides in South America - 2237 | Robert Schuster |
| 10:40 - 11:00 | Evaluating Direct and Indirect Hazards from Earthquake-Induced Landslides - 15002 | David Keefer |
| 11:00 - 11:20 | Tsunami Hazard Mapping on the Oregon Coast: Techniques Used by the Oregon Department of Geology and Mineral Industries - 14934 | George R. Priest, Antonio Baptista, Edward Myers, Curt Peterson, Mark Darienzo, Yumei Wang |
| 11:20 - 11:40 | Communicating Risk: The CDMG Cascadia Earthquake Planning Scenario and Public Awareness - 14242 | Lori Dengler, Kathy Moley |
| 11:40 - 12:00 | Earthquake Potential and Hazards in South Central Alaska - 6607 | Rodney Combellick |



GSA Technical Session: Earthquake Hazards, Learning from Past Disasters I and II
Portland Red Lion Lloyd Center
8:10 - 5:30 April 24, 1996
Chair- Yumei Wang

Afternoon Session Moderators - Yumei Wang and Joe Ritchey

| Time | Title | Authors |
|---|---|---|
| 1:30 - 1:50 | Intensity Maps for Scenario Earthquakes in the Bay Area - 14933 | John Boatwright |
| 1:50 - 2:10 | Liquefaction Hazard Maps for the Portland Quadrangle, Oregon, and Comparison of Hazard with Performance During Past Earthquakes - 14995 | Leslie T. Youd |
| 2:10 - 2:30 | Seismic Hazard Mapping in the Portland, Oregon Urban Area - | Ian P.Madin, M.A. Mabey |
| 2:30 - 2:50 | Applying Lessons Learned From the 1989 Loma Prieta Earthquake For a Seismic Vulnerability Assessment of a Regional Water Supply System - 27678 | Jeff L. Bachhuber, James Hengesh |
| 2:50 - 3:10 | Evaluation of Liquefaction Potential, Tacoma, Washington 14939 | Paul Grant, William J. Perkins |
| 3:10 - 3:30 | BREAK | |
| 3:30 - 3:50 | Use of GIS Earthquake Hazard Mapping for Pipeline Vulnerability Assessments - 14936 | Donald Ballantyne |
| 3:50 - 4:10 | Seismic Hazard Identification, Characterization and Mapping for the Development of a National Building Code - Nepal - 15003 | Donald West |
| 4:10 - 4:30 | The Seismic Performance of Large Earth Dams - 14928 | Stephen Dickenson |
| 4:30 - 4:50 | Near Fault Ground Motions From Parkfield, 1966 to Kobe, 1995: Implications for Structural Design - 14937 | J.P. Singh |
| 4:50 - 5:10 | Assessing Hazard From Crustal Earthquakes in the Northern Cascadia Region | Garry C. Rogers and Dieter H. Weichert |
| 5:10 - 5:30 | CLOSING REMARKS | |

Contacts:
The Geological Society of America (GSA) 800-472-1988
Mei Mei Wang, Oregon Dept of Geology (503) 731-4100

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## THEME SESSION: EARTHQUAKE POTENTIAL IN THE PACIFIC NORTHWEST
## FINAL PROGRAM

| No. | Title | Authors | Times |
|---|---|---|---|
| | INTRODUCTION | Ivan Wong | MONDAY, 22 APRIL 8:10-8:20 |
| 1 | Implications of Maximum Magnitude for the Cascadia Subduction Zone to Seismic Hazards in the Pacific Northwest (5938) | Ivan Wong* and Walter Silva | 8:20-8:40 |
| 2 | Checklist for Downsizing the Greatest Cascadia Earthquakes** (28182) | Brian Atwater* | 8:40-9:00 |
| 3 | The Rupture Area for Cascadia Great Earthquakes** (24463) | Roy D. Hyndman* | 9:00-9:20 |
| 4 | Estimates of Maximum Magnitude on the Cascadia Plate Interface Based on Rupture Dimensions** (5936) | K. Coppersmith* | 9:20-9:40 |
| 5 | Width of the Seismogenic Plate Boundary in Cascadia: Structural Indicators of Strong and Weak Coupling** (38623) | Chris Goldfinger*, Lisa C. McNeill, LaVerne D. Kulm, and Robert S. Yeats | 9:40-10:00 |
| | BREAK | | 10:00-10:20 |
| 6 | Thermal View of the Age-Rate Dependence of Subduction Zone Seismicity: How Cascadia Fits In (5591) | Robert McCaffrey* | 10:20-10:40 |
| 7 | Tsunami Heights Along the Pacific Northwest Computed from the M=9 Earthquake of January 1700** (1642) | Kenji Satake* and Yuichiro Tanioka | 10:40-11:00 |
| 8 | North to South Variation in Cascadia Basin Turbidite Event History: Implications for Paleoseismicity (38621) | C.H. Nelson*, C. Goldfinger, T. Vallier, M. McGann, and M. Kashgarian | 11:00-11:20 |
| 9 | A 7500 Year Lake Record of Cascadia Tsunamis in Southern Coastal Oregon** (2236) | Alan Nelson*, Harvey Kelsey, Eileen Hemphill-Haley and Rob Witter | 11:20-11:40 |
| | DISCUSSION | Brian Atwater | 11:40-12:00 |
| | LUNCH BREAK | | 12:00-1:10 |
| 10 | Paleotsunami Evidence of Subduction Earthquakes from Northern California** (14244) | G.A. Carver*, C.D. Peterson, C.E. Garrison, and R. Koehler | 1:10-1:30 |
| 11 | Repeated Abrupt Changes in the Depositional Environment of a Freshwater Marsh: A Record of Late Holocene Paleoseismicity at Euchre Creek, South Coastal Oregon (28155) | R.C. Witter* and H.M. Kelsey | 1:30-1:50 |
| 12 | Record of Plate Boundary Earthquakes Near Cape Blanco, South Coastal Oregon (24457) | H. Kelsey*, R. Witter, E Hemphill-Haley | 1:50-2:10 |
| 13 | Crustal Architecture of the Cascadia Forearc Updated (38626) | A.M. Trehu*, S. Fleming, T. Brocher, S. Clarke, J. Luetgert, T. Parsons, A. Meltzer, S. Gulick | 2:10-2:30 |
| 14 | The Next Earthquake Source Challenge in Cascadia: Estimating Hazards and Risks from Crustal Faults in Oregon and Washington** | Craig Weaver* | 2:30-2:50 |
| 15 | Crustal Block Motions in the Pacific Northwest: Implications for the Earthquake Potential of the Cascadia Forearc** (27497) | Ray Wells*, Craig Weaver, and Richard Blakely | 2:50-3:10 |
| | BREAK | | 3:10-3:30 |
| 16 | Recurrence Intervals for Shallow Crustal and Benioff Zone Earthquakes in the Pacific Northwest** (28186) | Tom Yelin* | 3:30-3:50 |
| 17 | Crustal Earthquake Hazards in Cascadia: Characteristics of Moderate and Small Earthquakes West of the Cascades Range** (28185) | Bob Crosson*, Shawn Dewberry, Neil Symons, and George Thomas | 3:50-4:10 |
| 18 | Late Holocene Deformation Along the Seattle Fault and Other Areas of the Puget Sound Region, Washington** (27826) | Robert C. Bucknam*, Brian L. Sherrod, and Estella B. Leopold | 4:10-4:30 |
| 19 | Triggering of Very Large, Deep-Seated, Bedrock Landslides by Concentrated, Shallow Earthquakes in the North Cascades, WA (4539) | D.C. Engebretson*, D.J. Easterbrook, D.J. Kovanen | 4:30-4:50 |
| 20 | Antecedent Stream at Stonewall Bank on the Central Oregon Continental Shelf (11813) | Bob Yeats*, LaVerne Kulm, Chris Goldfinger, and Lisa McNeill | 4:50-5:10 |
| 21 | Late Quaternary Faulting in the South Slough Area, Coos County, Oregon** (14994) | Ian Madin* and M.A. Hemphill-Haley | 5:10-5:30 |
| 22 | Faults and Earthquakes in the Willamette Valley and Portland Basin: A Regional Perspective from Newly Acquired Aeromagnetic Surveys (27519) | Rick Blakely*, Ray Wells, Tom Yelin, M. Dougherty, and Anne Trehu | TUESDAY, 23 APRIL 8:00-8:20 |
| 23 | Shallow Seismic Imaging of the Mount Angel/Gales Creek Fault System, Willamette Valley, Oregon (38625) | M.E. Dougherty, A.M. Trehu*, L.M. Liberty and R.J. Blakely | 8:20-8:40 |
| 24 | Paleoliquefaction Evidence for Two Late-Quaternary Earthquakes, Southern Williamette Valley, Oregon (4480) | Bradley Thurber* and Stephen Obermeier | 8:40-9:00 |
| 25 | Implications of the 1993 Klamath Falls Earthquakes on Earthquake Potential in Oregon** (27874) | Anthony Qamar*, Karen Meagher, and Tom Yelin | 9:00-9:20 |
| 26 | Evidence for and Likelihood of M~7 Earthquakes in the Arc and Backarc of Central Oregon** (7231) | Ray J. Weldon*, S.K. Pezzopane, M.A. Hemphill-Haley, R.M. Langridge, J.P. Stimac | 9:20-9:40 |



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| 27 | Late Pleistocene and Holocene Faulting and Volcanism along the Back-Arc and Intra-Arc Regions of the Cascadia Subduction Zone, Central Oregon (7226) | Mark A. Hemphill-Haley*, Ray J. Weldon, Robert L. Langridge, John P. Stimac, and Silvio K. Pezzopane | 9:40-10:00 |
| | BREAK | | 10:00-10:20 |
| 28 | Slip Rate and Recurrence Intervals for the Anna River Fault, Central Oregon (28176) | Silvio Pezzopane*, Andrei Sarna-Wojcicki, Ray Weldon, and Robert Langridge | 10:20-10:40 |
| 29 | Late Quaternary Faulting and Seismotectonics of East-Central Oregon and West-Central Idaho (27673) | K.L. Knudsen*, G.D. Simpson, T.L. Sawyer, I.G. Wong, J.D.J. Bott, and W.R. Lettis | 10:40-11:00 |
| 30 | Volcanic Earthquake Hazards in the Pacific Northwest** (27870) | Steve Malone* | 11:00-11:20 |
| 31 | New U.S. Geological Survey Probabilistic Ground Motion Maps for the Pacific Northwest** (27528) | David M. Perkins*, Arthur D. Frankel, Charles S. Mueller, E.V. Leyendecker, Stanley L. Hanson, Margaret G. Hopper, Erdel Safak | 11:20-11:40 |
| | DISCUSSION AND CLOSING | Ivan Wong and Brian Atwater | 11:40-12:00 |

* PRESENTER
** INVITED

POSTERS - Tuesday Afternoon, April 23

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| 1 | Earthquake and Thunder - Native Oral Histories of Paleoseismicity Along the Southern Cascadia Subduction Zone (3039) | D.H. Carver* and G.A. Carver |
| 2 | Active Faulting and Tufa Formation at Sawed Horn, Central Oregon: A Possible Kinematic Link Between the Abert Rim and Viewpoint Faults (6195) | Robert M. Langridge*, Ray J. Weldon, Silvio K. Pezzopane, A. Mark Jellinek |
| 3 | Offshore-Onshore Seismic-Reflection Studies Across the Central-Southern Cascadia Subduction Zone, Southern Oregon (5937) | Samuel H. Clarke*, Jr., Thomas M. Brocher, Eric L. Geist, Mark J. Davis |
| 4 | Preliminary Evidence for Subsidence and Tsunami Near Astoria, Oregon (7230) | Eileen Hemphill-Haley* |
| 5 | A New Database Catalog of Historic Earthquakes in the Cascadia Region, 1793-1929 (27869) | Ruth Ludwin* and Anthony Qamar |