



The Official

# Newsletter

of the Oregon Section Association of Engineering Geologists

Serving Professionals in Engineering, Environmental, and Groundwater Geology

## MARCH 2006 SECTION MEETING

**GUEST:** STEVE MUMMA, GEOBRUGG NORTH AMERICA

**PRESENTATION:** FLEXIBLE DEBRIS FLOW BARRIER DEVELOPMENT AND TESTING - CASE STUDY: SAN BERNARDINO MOUNTAINS, CA

Beginning in the early 1960's, Geobruigg pioneered the use of flexible barriers in catching and retaining rockfall. This technology has become very common throughout the world; and has been used by DOT's, railroads, hydro facilities, mines, residential developments, and numerous other locations. The initial application of flexible barriers to debris flow mitigation was largely accidental. Small snow avalanches as well as debris and mud flows would occasionally impact rockfall barriers installed in the field. Investigation of these occurrences illustrated that flexible barriers could effectively retain significant amounts of debris material. This observation prompted further testing into how flexible barriers behave when impacted by debris flows.

The first test of a flexible barrier specifically for debris flow was in Oregon in 1996. This series of tests comprised a variety of barrier designs all based on standard rockfall barriers. The results of this testing illustrated that flexible barriers could reliably retain moderately sized mud and debris flows. The final tests allowed only 0.05% of the released material to

pass through the barrier.

Further research was carried out in 2001 in Germany to investigate the behavior of ring netting being used for woody debris entrapment in a torrent. The results of this and other research enabled the development of a finite element modeling program that has been a valuable tool in developing new barrier designs, and understanding how the system components interact with each other. This has resulted in systems that can be refined and optimized for debris



flow impacts, including designs that can be placed directly into debris flow channels.

The San Bernardino Mountains in Southern California experienced severe wildfires in October of 2003 which stripped the landscape of much of its vegetation. The onset of the rainy season resulted in a series of debris flow events in late December, causing numerous road

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**This Month's Meeting is on Tuesday March 21**

**Old Market Pub  
6959 SW Multnomah Blvd  
Portland (Garden Home), OR**

6:00 pm Social  
7:00 pm Dinner  
8:00 pm Presentation

**Pizza and Salad**  
\$13.00 dinner (\$6.50 for students).

E-mail <glenda.christman@amec.com> with "AEG Reservations" in the subject line, or call 503-639-3400, by 4 pm Thurs. Mar 16. There is a \$2.00 surcharge for those who do not reserve by the deadline.

## MESSAGE FROM THE CHAIR

Greetings from Montana, I have been out of town for several weeks now working in the field. Unfortunately, I was unable to attend last month's meeting. I heard that we had a good turnout and I would like to thank all of our members who regularly attend our meetings. I would also like to thank Ian Madin from DOGAMI for his presentation on Oregon's new geologic map and database.

Our Program Chairs Lisa Glonek and Bill Burns have done a great job this year scheduling speakers for our section. They have assembled a diverse group of presenters from both the public and private sector whose subject matter has covered the broad spectrum of fields in our profession. Lisa and Bill are so good at scheduling

presenters. We have quite the treat for our section in April. In addition to the traditional Student Night, where students from our local AEG student chapters present posters of their research subjects or topics of interests and compete for scholarship funds provided by our Section; we also have the AEG Jahns Lecturer, Jerry Higgins from the Colorado School of Mines, coming to give a presentation. These two events are scheduled for April 18 and 19, so please mark both dates on your calendar. We are planning some special things for both events so look for next month's Newsletter for more details.

There has not been much news this month from the AEG Corporate office other than to mention that our mid-year board meeting is going to

be held this June in New Orleans. It was originally scheduled to be held on the Gulf Coast, unfortunately the area was so devastated by Katrina the venue had to be changed. AEG Corporate made what I feel is a great decision to still hold the mid-year board meetings in the Gulf area as a means of showing support for the region.

I hope to see you all at this month's meeting where we have a great presentation scheduled. Steve Mumma from GeoBrugg will be giving a presentation on debris flow barrier testing at a California site. I have worked with Steve on a number of projects and I'm really interested in the results of their research.

*Brent Black*

*AEG Oregon Section Chair*

## THANKS FOR SUPPORTING OREGON AEG!

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## AEG OREGON CALENDAR

**Apr 18:** Student Night

**Apr 19:** Dr. Jerry Higgins, Jahns Lecture

**May 16:** Dr. Darrel Schmitz, topic to be announced

OREGON SECTION AEG NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Section or other Sections, and other interested people who have requested and paid a local subscription fee of \$10.00. E-mail subscriptions are free.

News items are invited and should be sent to: Charlie Hammond, OR Section AEG Newsletter Editor, Cornforth Consultants, 10250 SW Greenburg Road, Portland, OR 97223, e-mail: <or.aeg.news@cornforthconsultants.com>, phone (503) 452-1100. Electronic media is preferred. Deadline for submittal is Friday three weeks before each meeting.

Advertising: business card \$10/mo, \$100/yr; ¼ page \$30/mo, \$200/yr; ½ page \$35/mo, \$350/yr.

Please notify Charlie if you have a change to your email or mailing address.

# FIRST NORTH AMERICAN LANDSLIDE CONFERENCE

## CALL FOR PAPERS

The “**First North American Landslide Conference**” will be held **June 3-8, 2007** in **Vail, Colorado**.

The Conference theme is “**Landslides and Society: Integrated Science, Engineering, Management, and Mitigation.**” The Conference is designed to provide a stimulating forum for geoscientists, engineers, planners, economists, program managers, and other decision makers concerned with landslide hazards and their impact on North American society. Principal professional society sponsors of the Conference are the Association of Environmental and Engineering Geologists, the American Society of Civil Engineers, the American Rock Mechanics Association, the Canadian Geotechnical Society, the Engineering Geology

Division of the Geological Society of America, and the Transportation Research Board.

The Geo-Institute of ASCE will publish the Conference proceedings. ASCE standards for publication will be followed – a minimum of two independent reviews of each submission. Abstracts may now be submitted electronically at the conference web-site:

<http://www.mines.edu/academic/geology/landslidevail2007/>

**ABSTRACTS ARE DUE MARCH 15, 2006**, but earlier submissions are encouraged. Decisions concerning acceptance of abstracts will be made within one month of receipt, and no later than April 15, 2006. Draft papers of approved abstracts are due August 1, 2006. Paper reviews will be

returned to authors by November 1, 2006.

Prospective authors are invited to submit abstracts of up to 500 words for papers to be considered for presentation/publication at the Conference. An individual may be a primary author and presenter for only ONE volunteered paper, but may co-author any number of abstracts/papers.

The abstract should include title of paper, names/affiliations of all authors and contact information for corresponding author, as well as which of the Conference topics/themes their paper specifically addresses. The website contains details of the conference themes and topics to guide those preparing abstracts.

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closures and one fatal accident. Caltrans chose to use flexible debris flow barriers at 10 separate sites to mitigate the hazard. Within a year of their installation, several of these barriers had been impacted by slide events. They performed as designed, and retained all of the slide debris without necessitating any road closure.

Bio: Mr. Mumma has a BS in Civil Engineering from Cornell University (1995). He joined Geobruigg North America in 2000 as the Regional Manager for the NW USA and Western Canada. He works with consultants, DOT's, and others to help them solve their problems with rockfall, debris flow, unstable slopes, and avalanche.

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