

Association of Environmental and Engineering Geologists

The Rocky Mountain Section Newsletter

OCTOBER 2008

MEETING DATE

**THURSDAY
OCTOBER 9th, 2008**

TIME

5:45 p.m. Social Hour
6:30 p.m. Dinner
7:30 p.m. Presentation

LOCATION

**Berthoud Hall,
Colorado School of
Mines
1516 Illinois St.
Golden, Co 80401
Room 205
See Map Below**

COST

**\$25 Members
\$27 Non-members
Students, free first
time then \$10**

RESERVATIONS

Kristi Ainslie
(303) 440-5236
or
meetings@aegrms.org
or
WWW.AEGRMS.ORG

**BY NOON,
TUESDAY
OCTOBER 7TH**

The Formation and Failure of Natural Dams

John J. Clague
2008 Jahns Lecture
Centre for Natural Hazards Research, Simon Fraser University
Burnaby, Canada

Lakes dammed by landslides, moraines, and glaciers in high mountains have drained suddenly to produce floods orders of magnitude larger than normal nival or rainfall floods. Reservoirs that form behind landslide dams pose a threat to upstream infrastructure. In addition, most landslide dams fail soon after they form, typically by overtopping and incision; the failure may produce destructive downstream floods. Lakes dammed by Neoglacial end and lateral moraines are susceptible to failure because they are steep-sided and consist of loose, poorly sorted sediment that in some cases is ice-rich. Irreversible rapid incision of a moraine dam may be caused by a large overflow triggered by an avalanche or rockfall. As climate warms, lakes impounded by glaciers may drain suddenly and unexpectedly following a long period of stability due to progressive wastage of the glacier dam and the formation of subglacial, supraglacial, or ice-marginal channels.

Most outburst floods display an exponential increase in discharge, followed by a gradual or abrupt decrease to background levels as the water supply is exhausted. Peak discharges are controlled by lake volume, dam morphology and materials, failure mechanism, and downstream topography and sediment availability.

Climate is an important determinant of the stability of moraine and glacier dams. Most moraine-dammed lakes formed in the last century as glaciers retreated from bulky end moraines constructed during the Little Ice Age. The lakes soon began to fail as climate warmed. With continued warming and glacier retreat, the supply of moraine-dammed lakes that are susceptible to failure will be exhausted, and the threat they pose will diminish. Glacier-dammed lakes typically have gone through a period of cyclic or sporadic outburst activity, lasting up to several decades, since climate began to warm in the late nineteenth century. The outburst floods from any one lake ended when the glacier dam weakened to the point that it could no longer trap water behind it. However, with continued glacier retreat, the locus of outburst activity may, in some cases, shift up-glacier to sites where new lakes develop in areas that are becoming deglaciated.

Words from the Chair

First of all, let's give a heartfelt thank you to Steve Compton for providing outstanding leadership to the AEG Rocky Mountain Section over the past year as the AEG Chair. Thanks Steve! Steve worked very hard to ensure that the Rocky Mountain Section maintained its high standards of excellence. I'm very excited to take the reigns from Steve and lead this great section over the next year. Also, we will keep the new Student Night format going with poster sessions again this year as it has proven to be highly successful.



As for my background, I graduated from Fort Lewis College in Durango, Colorado with a BS in Geology in 2000. Fort Lewis College is located in Durango, Colorado and proved to be an outstanding place to study geology. Since then, I've worked on projects across the country for Denver area geotechnical engineering firms as a geologist and engineering geologist. For the past four years, I specialized in tunnel engineering and tunnel geology. Currently, I'm wrapping up a Masters degree in tunnel engineering and working full time on a Ph. D. in rock mechanics and underground support systems at the Colorado School of Mines. I'm looking forward to keeping my ties with geology and AEG while developing my new interests.

We are very busy this month with folks returning from the Annual Meeting in New Orleans and hosting the distinguished 2008 / 2009 Jahns Lecturer John Clague at the October meeting. John's presentation entitled "Formation and Failure of Natural Dams" will be quite interesting, so please help us honor him this month by attending his talk. I wish everyone a great season! Don't forget to RSVP for the meeting!

Sean Harvey, GIT
Chair, AEG-RMS

Dinosaur Ridge Girl Scout Discovery Day—October 4, 2008 10:00-2:30

The friend of Dinosaur Ridge will be having annual Dinosaur Discovery Day for the Girl Scouts on Saturday October 4, 2008 from 10:00 AM to 2:30 PM. If you are interested in volunteering please contact Clare Marshall at dinodiscovery@dinoridge.org. For more information visit www.dinoridge.org/

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Past Chair

Steve Compton

2008-2009 Upcoming Meeting Presentations

November 13, 2008	Paul Santi	New Zealand!
December 11, 2008	TBD	Family Night
January ____TBA____	AEG President	President's speech
February 12, 2009	<i>Open</i>	
March 12, 2009	<i>Open or Potential Student Night</i>	
April 9, 2009	<i>Open or Potential Student Night</i>	
May 14, 2009	<i>Open</i>	

If you are interested in Presenting at an AEG meeting contact Sean Harvey at chair@aeqrms.org

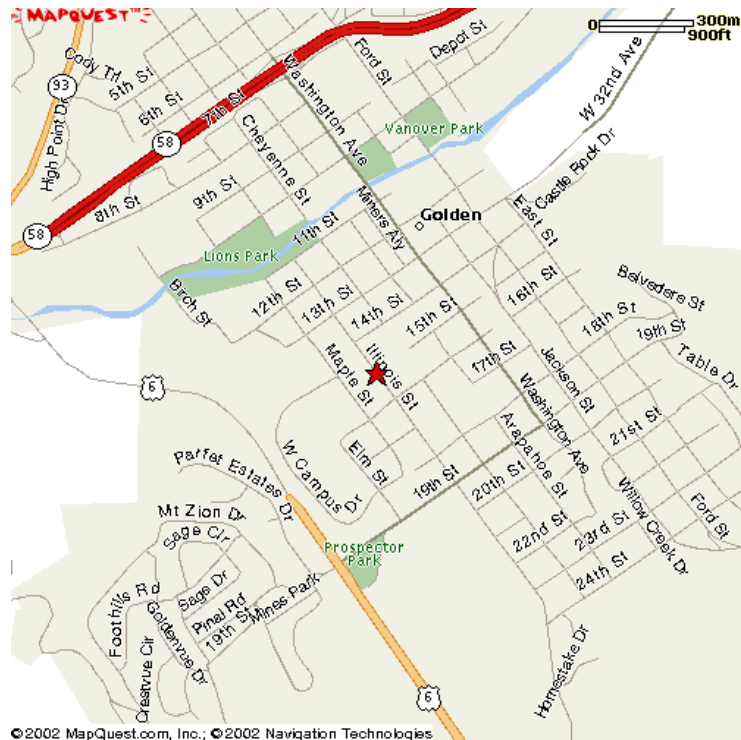
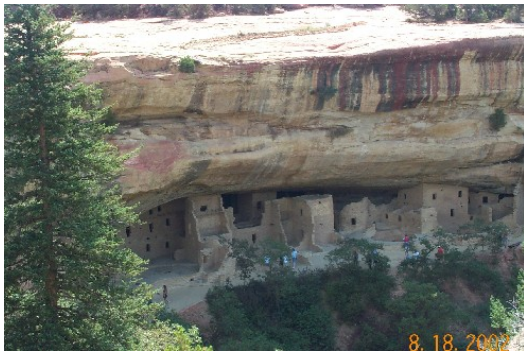
Earth Science Week 2008

Heading back to school? Now is the time to make plans for Earth Science Week 2008. The 11th annual Earth Science Week will celebrate the theme "No Child Left Inside" with a wide range of exciting activities, programs, and resources designed to help young people explore Earth science firsthand.

Pitch in to promote science literacy. Dig up fossil evidence of past life, record observations of cloud patterns, or visit science centers and parks. Conduct activities described on the Earth Science Week website at <http://www.earthsciweek.org/forteachers/index.html>. For more ideas, see recommendations at <http://www.earthsciweek.org/forplanners/index.html>.

This year's event is shaping up to reach even more than last year's total estimated audience of over 5 million people. For the past decade, AGI has organized Earth Science Week to foster public and professional awareness of the status of Earth science in education and society. To learn more or to order an Earth Science Week 2008 Toolkit, visit the event website at <http://www.earthsciweek.org>.

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