

Association of Environmental and Engineering Geologists

The Rocky Mountain Section Newsletter

NOVEMBER 2007

MEETING DATE

THURSDAY
NOVEMBER 8TH,
2007

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
See Map Below

COST

\$25 Members
\$27 Non-members
\$10 Retired members
Students, Free first
time, then \$10

RESERVATIONS

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

BY NOON,
TUESDAY
NOVEMBER 6TH

Steeply Dipping Bedrock in My Rearview Mirror A Fifteen-Year Retrospective

David C. Noe,
Colorado Geological Survey

This presentation focuses on the research results of my recently completed doctoral thesis. Topically, it foreshadows a three-part series of papers that is being published in the November 2007 issue of the AEG journal, *Environmental & Engineering Geoscience*.

The "Dipping Bedrock Problem" was not well understood in 1991 when I began my research work for the Colorado Geological Survey. In terms of frequency and severity of damage, certain areas of the Front Range urban corridor were experiencing the highest sustained geologic-hazards losses in the nation. A few years later, key observations by Ed Weakly, CTL/Thompson, Mike West, myself, and others regarding damage characteristics and the inefficacy of drilled-pier foundations became the basis for the over excavation designs that were adopted by Jefferson County in 1995. This design approach has proven to be effective in mitigating differential ground deformations associated with dipping bedrock.

The *E&EG* papers and this talk cover pertinent observations about heave-feature morphologies, geologic framework, mineralogy, engineering properties, and an evaluation of environmental triggering processes and heave mechanisms, based on original research and compilations of work by others from the 1960s to 2000s. The observations are captured in a conceptual model for expansive, steeply dipping bedrock that considers both regional and site-specific geologic-framework characteristics. The evaluation of potential triggers and heave mechanisms considers unloading and rebound, pyrite oxidation and gypsum-crystal growth, and wetting and clay hydration. Using clues from the geologic framework and from observations of actual heaving events, we will see that only one of these processes is a viable cause of differential ground heaving in the Colorado Front Range area.

With the success of over excavation designs, it has become easy to overlook the unique and powerfully impactful characteristics of expansive, steeply dipping bedrock. However, many parts of Colorado and the nation have no regulations that govern site evaluations and building designs in dipping bedrock areas. It is important for engineering geologists to maintain a solid understanding of this potential hazard, particularly how to recognize and evaluate potential severity and triggering mechanisms. By maintaining a high standard of practice, we can influence the subsequent actions of engineers and builders to promote effective designs and reduce damage losses.

Words From the Chair

I begin this month's edition of Words with a word of thanks to David Cushman, Jill Carlson, and Julia Frazier for stepping into the various officer roles for the 2007-2008 AEG season. And of course much thanks goes out to Ed Friend and Kristi Ainslie for their continued hard work on the newsletter. The October meeting featured a great talk by the outgoing Jahns Lecturer John Moylan. It was truly an honor to have such a high profile speaker for my initial meeting as Chair! For those who were not able to make the October meeting you missed a great presentation and getting to look over the fantastic poster Jill Carlson and the folks at CGS put together for the annual meeting. We'll try to have it make a return appearance for Family Night in December.

I am very excited for our November speaker! None other than our very own Dr. Noe! Dave will be presenting a talk entitled "Steeply Dipping Bedrock in My Rearview Mirror -- A Fifteen Year Retrospective" which has been pulled from his doctoral thesis and is set to be published in a future issue of the AEG Journal, *Environmental and Engineering Geosciences*. Dave's experience with the dipping bedrock problem along the Front Range began during the study's infancy and continues through today. I expect the presentation will be insightful, educational, and entertaining as has become the norm anytime Dave presents.



Please join me in congratulating Dave on his recent doctorate and expanding your knowledge of the dipping bedrock issue by attending the November 8th meeting. Don't forget to RSVP by Tuesday at noon. See you at the meeting!

Steve Compton, PG
Chair AEG-RMS

2007-2008 Upcoming Meeting Presentations

Below is the tentative schedule of speakers for the 2007-2008 season. We will be adding presentation titles to future newsletters. As seen we have a few openings. If you are interested in giving a presentation please contact Steve Compton at chair@aegrms.org.

- Dec 13, 2007 **Family Night**- Clare Marshall — Dinosaur Ridge – Dinosaurs Shaped by Discovery
- Jan 11, 2008 (Friday) - Dorian Kuper — AEG President — Meeting at AEG headquarters
- Feb. 7, 2008 - Scott Walker
- Mar 13, 2008 - *Open*
- Apr 10, 2008 - Student Night

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720.201.4914
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Newsletter

Kristi Ainslie
GEI Consultants, Inc.
Ed Friend
RJH Consultants, Inc.
newsletter@aegrms.org

Website

Jill Carlson
Colorado Geological Survey
webmaster@aegrms.org

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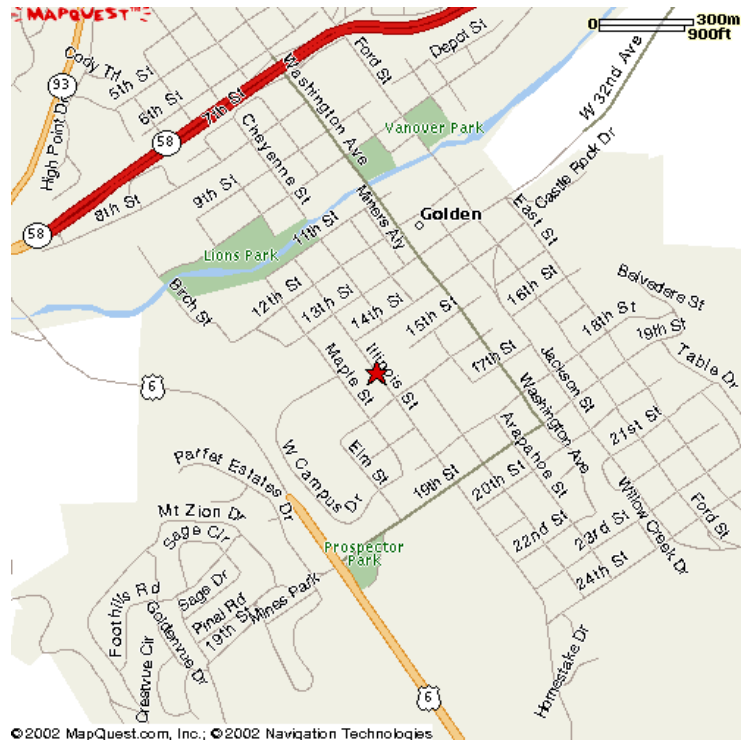
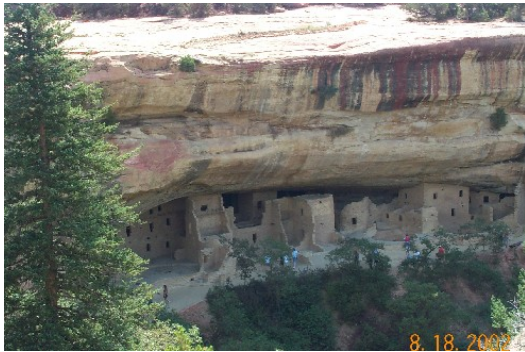
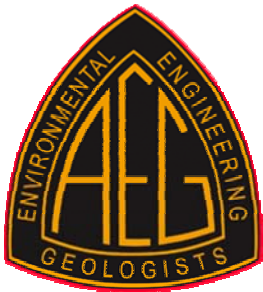
Liv Bowden

Summary of the 2007 BOD meeting, Los Angeles, CA

The BOD meeting was held on September 29-30, 2007 following the Annual Meeting. Highlights of this meeting follows.

1. The **Arizona Chapter** of the Southwest Section was elevated to Section status. The new Chair is Dan Burns. Jessica Humble (formerly of the Rocky Mountain Section) was instrumental in forming the new Section. The Puerto Rico Chapter failed to submit the paperwork in time. The **Arkoma Section** has become inactive.
2. The **AEG Foundation** has a matching challenge fund-raising drive underway. The daughters of the Marliaves have challenge the membership to contribute to the Marliave Fund and they have pledged to match. During the Board meeting, Bob Tepel challenged the Board with a pledge to match Board members contributions up to \$1000.00. The Board contributed over \$3000.00. Planned Giving is a new program.
3. **Headquarters** is working on updating a tri-fold for membership recruiting. This can be customized for each Section. **Becky Roland** has been named Chief Operating Officer.
4. Growth in **student membership** has become stagnant. Part of this is due to the decline in enrollment of geoscience students and part is due to the price of oil. Only one student chapter report (Portland) was received.
5. The **First North American Landslide Conference** was a huge success. This conference had a surplus of over \$64,000. The 2nd NALC will likely be held in Banff Alberta. A follow up symposia/workshop has been proposed to be held in Costa Rica possibly in early 2010. This proposal has received support from GSA and IAEG and may receive a grant from the Inter-American Development Bank. A committee is being formed with the goal of having a definite plan by the next EC meeting in January and a formal proposal presented at the mid-year Board meeting.
6. **Technical working groups** have been revitalized. Mandates for these groups include the submission of an article to AEG News once per year and organization of a symposia at the Annual Meeting.
7. A committee has been formed to create a **National Mentor Award**. Susan Steele-Weir is on this committee. A committee has been formed to evaluate the potential of creating **Fellow Membership Class** for members. A proposal to formalize the selection criteria for **Honorary Members** was defeated. A committee will be formed to explore the creation of an **Outstanding Journalism Award**. A committee is being formed to manage the newly created **Schuster Award**.
8. The **E&EG Journal** needs papers. They are seeing a 44% rejection rate. Discussions are underway on how and when to transition to digital publishing. The **AEG News** will likely expand from 32 to 36 or 40 pages provided they receive more articles. Alan Hatheway has announced his retirement as editor of the AEG News. A search for a replacement is underway. Perhaps the most contentious issue at this meeting involved a proposal from AIPG to merge AEG News with their publication, TPG. After much discussion, the Board decided to reply to AIPG with an offer to jointly produce a one-time, joint publication to be issued in January devoted to students.
9. The **Association Bylaws** have been rewritten. The Board voted to accept these changes. Look for these in the 2008 Annual Report and Directory. A committee is being set up to review/rewrite the Association's Operating Policies to ensure they conform to the new bylaws. New policies enacted during this Board meeting include a policy on Whistleblowers and a policy on document retention. *The document retention policy has very serious ramification on Section operations.*
10. **Upcoming Meetings:**
2008—New Orleans (LMV Section)
2009—South Lake Tahoe (Sacramento Section)
2010—(Carolinas Section)
2011—Anchorage (Alaska Section)
2012—Salt Lake City (Intermountain Section)
11. The Board attended a two-hour workshop on **Advocacy**. The focus of this workshop was to develop the "elevator speech"; a two-minute exposition of who and what AEG is. The workshop planned for the mid-year Board meeting will be a 1.5 day long session on leadership.
12. The mid-year Board Meeting is planned for May 16-18 in Portland OR.

GEI Consultants, Inc.
Attn: Kristi Ainslie
1790 38th Street #104
Boulder, CO 80301



Colorado School of Mines - Berthoud Hall
1516 Illinois Street
Golden, CO 80401