

# ASSOCIATION OF ENGINEERING GEOLOGISTS

*"Serving Professionals in Engineering, Environmental, and Ground-Water Geology"*

## THE ROCKY MOUNTAIN SECTION NEWSLETTER

[www.aegrms.org](http://www.aegrms.org)

### MEETING DATE

**THURSDAY  
SEPTEMBER 8<sup>th</sup>, 2005**

### 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

\$20 Members  
\$22 Non-members  
**Students, Free first time,  
then \$10**

### RESERVATIONS

c/o AEG Reservation Line  
(303) 264-1002  
[meetings@aeqrms.org](mailto:meetings@aeqrms.org)  
**BY NOON, TUESDAY  
SEPTEMBER 6<sup>th</sup>**

### **Evaluating Rock Faces by Ground-based Laser Scanning Techniques**

Dr. A. Keith Turner, Emeritus Professor of Geological Engineering  
Department of Geology and Geological Engineering  
Colorado School of Mines

Population growth frequently causes expansion of urban populations and associated transportation facilities onto formerly uninhabited slopes, where naturally occurring and constructed rock faces present potential hazards from rock fall and rock face instability.

Rock fall management and mitigation programs are widely used to ensure public safety, to provide efficient rock face maintenance, and to proactively address potential rock fall hazards. These programs require comprehensive geologic characterization of individual rock slopes. New ways of collecting data are urgently required to accelerate field data acquisition, reduce identification difficulties, eliminate safety constraints, and remove human bias and subjectivity in the data.

Exposed rock surfaces can be scanned quickly and accurately using a ground-based laser scanner, resulting in a collection of millions of discrete points each having a 3D value relative to the scanner's position. These "point clouds" have high spatial resolution, with adjacent points often only a centimeter or two apart. Relatively small surface features and discontinuities are readily identified. Algorithms have been developed to support semi-automated processes for orienting the point cloud, creating a polygonal surface model from the point cloud, determining rock discontinuity information, and defining block size distributions.

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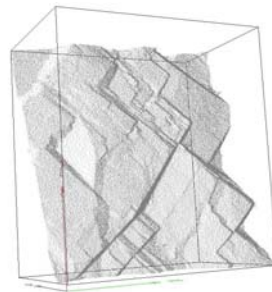
Angela Lemmerman

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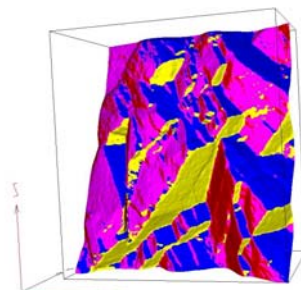
Field Scanning  
Experiments in  
Belgium



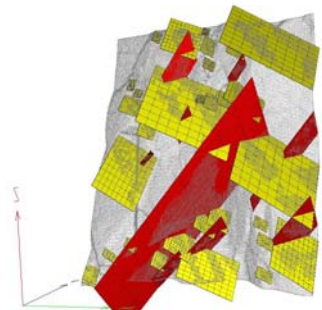
Point cloud of  
rock-face section



3D model of  
rock-face



Four identified  
joint sets



Two major joint sets as  
discontinuity planes defined by  
linear trend surfaces

## Words From the Chair

Greetings! I am expecting a great turnout at the upcoming Vegas Conference – it promises to be a good one!

Also, if you have not voted on the AEG name change, please do so. I believe the cutoff date for voting may have passed, but it was my understanding that less than 10% of the organization had voted at this time. *Send in your voting forms.*

This will be my last official letter as Rocky Mountain Chair. I appreciated all the effort and assistance everyone provided over the last year. I really enjoyed setting up the monthly speakers; I truly enjoyed all the presentations and would like to thank everyone who presented. I would also like to thank all the Rocky Mountain Section Officers and Newsletter Staff – I could not have done this without you!

I also look forward to another great year with Dwaine at the helm. I know Dwaine will be a great asset to the organization.

Thanks!

## Your Business Card Here

The section is looking for companies or individuals who would like to advertise their products or services in the section newsletter and on the website. This is anything from a business card (\$10/month), quarter page spread (\$20/month), to a half page exposition (\$40/month). If you are interested, contact Kristi Ainslie [newsletter@aeqrms.org](mailto:newsletter@aeqrms.org).

We had a couple of takers last year; that really helped fill out the newsletter and make it interesting for us all. Thanks! Hopefully past ads have drawn some more attention to this.

## Case Histories

We are always looking for individuals to provide their knowledge and experience to the AEG-RMS community through case histories and articles of interest. Please contact Kristi Ainslie at [newsletter@aeqrms.org](mailto:newsletter@aeqrms.org) if you have anything you would like to share. We have had good success with this in the past, so keep it going.

## Parting Words

Welcome back to another season of AEG-RMS meetings. We are excited to be back and of course about the upcoming annual meeting in Vegas!

A lot happens over the summer, so please remember to keep us up-to-date with your email and mailing addresses. That is the only way we can make sure the newsletter and other announcements get to you.

Another note, we have a **new RSVP phone number**. That number is **303-264-1002**. Please use this for phone reservations. The email address has not changed so please continue to send email reservations to [meetings@aeqrms.org](mailto:meetings@aeqrms.org).



**COLORADO SCHOOL OF MINES – BERTHOUD HALL**  
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