

# Association of Environmental and Engineering Geologists

The Rocky Mountain Section Newsletter

MARCH 2007

## MEETING DATE

**THURSDAY  
MARCH 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) 264-1030  
or  
[meetings@aegrms.org](mailto:meetings@aegrms.org)  
or  
[WWW.AEGRMS.ORG](http://WWW.AEGRMS.ORG)

**BY NOON,  
TUESDAY  
MARCH 6<sup>TH</sup>**

## SHALLOW-LANDSLIDE HAZARD MAP OF SEATTLE, WASHINGTON

**Edwin L. Harp and John A. Michael**

U.S. Geological Survey, Golden, Colorado 80401

&

**William T. Laprade**

Shannon and Wilson, Inc., Seattle, Washington 98103

Landslides, particularly debris flows, have long been a significant cause of damage and destruction to people and property in the Puget Sound region. Following the years of 1996 and 1997, the Federal Emergency Management Agency (FEMA) designated Seattle as a "Project Impact" city with the goal of encouraging the city to become more disaster resistant to the effects of landslides and other natural hazards. A major recommendation of the Project Impact council was that the city and the U.S. Geological Survey (USGS) collaborate to produce a landslide hazard map of the city. An exceptional data set archived by the city, containing more than 100 years of landslide data from severe storm events, allowed comparison of actual landslide locations with those predicted by slope-stability modeling. We used an infinite-slope analysis, which models slope segments as rigid friction blocks, to estimate the susceptibility of slopes to shallow landslides which often mobilize into debris flows, water-laden slurries that can form from shallow failures of soil and weathered bedrock, and can travel at high velocities down steep slopes. Data used for analysis consisted of a digital slope map derived from recent Light Detection and Ranging (LIDAR) imagery of Seattle, recent digital geologic mapping, and shear-strength test data for the geologic units in the surrounding area. The combination of these data layers within a Geographic Information System (GIS) platform allowed the preparation of a shallow landslide hazard map for the entire city of Seattle.



See Page 2 for a second abstract  
on another landslide!

## Words From the Chair

Dear AEG-RMS Members,

The Lake Pleasant Water Tunnel presentation by David Kwietnewski and Dr. Ray Henn was great! Thanks Dave K and Ray for a very personable and engaging presentation that really conveyed how the rubber meets the road. Be sure not to miss this month's presentation by Ed Harp. Ed's presentation will contrast two landslide projects, one in the Seattle, Washington area where a significant amount of existing information is available and the second in Micronesia where the lack of existing information necessitates a different project approach. The new Student Night Sponsor Form is available on the website. I encourage each of you to print it and talk to your employer and anyone else that you feel it appropriate to approach to help generate funding for this important and beneficial event. It is important that potential sponsors understand the importance of helping those coming up behind us in our profession and what a great networking/recruiting opportunity student night can be. I look forward to seeing you at Ed Harp's presentation in March.



## 2007 Upcoming Meeting Presentations

**April 13, 2007 - Student Night!** *New Poster Session Format*

**May 10, 2007 - TBD**

### LANDSLIDES TRIGGERED BY TYPHOON CHATA'AN IN CHUUK STATE, FEDERATED STATES OF MICRONESIA

**Edwin L. Harp and, Mark E. Reid, and John A. Michael**

Several hundred landslides were triggered within the eastern volcanic islands of Chuuk State in the Federated States of Micronesia by torrential rainfall from tropical storm Chata'an on July 2, 2002. Nearly 20 inches of rainfall in less than 24 hours resulted in 43 fatalities and the destruction of 231 structures, most of which were homes but also included schools and dispensaries. The landslides triggered by the rainfall ranged in size from a few cubic meters volume to over 1 million cubic meters. Most of the failures began as slumps and transformed into debris flows some of which had runout distances of several hundred meters. A reconnaissance overflight was taken to observe and photograph as many of the landslides triggered by the storm as possible. A landslide inventory map was produced from this photography and from additional mapping done from boat. Using the digitized inventory map, a susceptibility map was prepared using a slope map calculated from an existing digital elevation model of the islands and from assuming typical shear strength parameters for deeply weathered volcanic rocks. Comparing the susceptibility map with actual mapped source areas, a hazard analysis was performed on a GIS platform to construct a landslide hazard map for the islands where landslides were triggered by the tropical storm.



## Monthly Meeting Fee Increase

Yikes! I hate to bring this up but a fee increase for our monthly meetings is long overdue. The fees of \$20 for members and \$10 for students have not been increased for over 10 years. Everyone is enjoying the new caterer which is a bit more expensive but the fact of the matter is that an increase is needed for the same reasons everything else has from 10 years ago and we need to provide a leg up for those coming up behind us. Subsidizing student attendance at monthly AEG section meetings is an important way to do this. Beginning with the March meeting, members will pay \$25 and students will pay the same \$10. As gratitude to our members who have contributed to and managed to survive the profession to reach retirement, retired members fee will be \$10. Thanks Bill Smith et al. Thanks very much to each of you for understanding and supporting your Rocky Mountain Section of AEG.

Thanks,  
Liv Bowden, AEG-RMS Chair

## AEG-RMS Annual Ski Day

**Monday, February 26, 2007—Loveland Ski Area**  
See website ([www.aegrms.org](http://www.aegrms.org)) for more details and to RSVP



Photo taken from [www.skiloveland.com](http://www.skiloveland.com)

## AEG Student Night

**Student  
Night—  
Request for  
Sponsors!**

AEG Student Night will be held on Friday, April 13th, 2007 in the Student Center at CSM. This year, the format will be a student poster session. Please consider participating as a sponsor for this popular event. Sponsors are not expected to set up booths this year; instead, attendees will circulate among the students presenting their posters. After dinner, the top poster presenters will

receive awards and give brief discussions of their work.

The new format should encourage greater student participation, and Student Night always provides excellent recruiting and networking opportunities. Students receive complimentary banquet admission, and we are hoping to award generous prizes to the top poster presenters, so please be

generous with your sponsorship contribution!

The sponsorship form is attached. Please fill out and fax to Chair-Elect Steve Compton at 303-657-4037 as soon as possible (no later than March 23, 2007) to have your sponsorship recognized in the Student Night Program.

Thank you for your support!

## Board of Directors

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Jill Carlson  
Colorado Geological Survey  
[webmaster@aegrms.org](mailto:webmaster@aegrms.org)

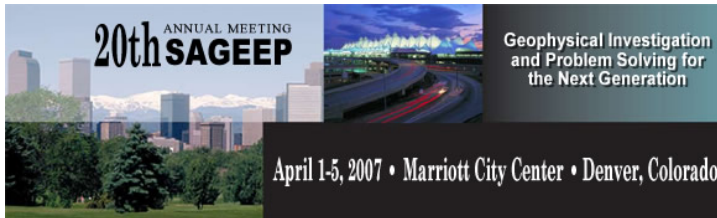
### Student Chair

Adam Prochaska  
[student-chair@aegrms.org](mailto:student-chair@aegrms.org)

### Past Chair

Dwayne Edington

# SAGEEP 2007—Denver Colorado



## Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP) 2007 20<sup>th</sup> Anniversary

April 1-5, 2007  
Denver, Colorado

**Pre-registration deadlines are drawing near** - Now is the time to **register** for this informative and no doubt memorable conference. **Online registration is open** at <http://www.eegs.org/sageep/index.html>. Visit [www.eegs.org](http://www.eegs.org) and select SAGEEP 2007 to download a printable program brochure and faxable registration form. Also make plans to secure your hotel reservations soon!

**Read on** for more about these Pioneer Panel characters and other **Conference Highlights**.

### Program:

We are featuring a session on **Pioneers in Engineering and Environmental Geophysics - 20 years of progress**. The **Keynote Presentation** this year will take a different shape to reflect this theme. A panel of speakers - including some from the first SAGEEP! - will discuss the **History of Near-Surface Geophysics**, the background on the planning of the first SAGEEP meeting, and the evolution of EEGS from SAGEEP.

Of particular note is our **special session on humanitarian uses of geophysics**. **Technical Luncheon** speaker, **Yogadhis Das, Ph.D.**, will discuss his experiences in the area of humanitarian de-mining.

**Melinda Truskowski** is our guest speaker for the **Business Luncheon: "The Consulting Industry in near-Surface Geophysics"**. She will review the economic factors such as economic conditions, personnel availability, and technological development influencing our businesses today as well as some of the challenges facing us as we look into the future.

**Students:** Are you interested in SAGEEP 2007 Scholarships? If so, visit Geometrics' website at [www.geometrics.com](http://www.geometrics.com) and under "What's Hot", click on the link to student scholarships. Interested in volunteering at SAGEEP 2007? Contact EEGS (contact information below - we'll have a special section for Student Volunteers on our website soon!).

### Social Event:

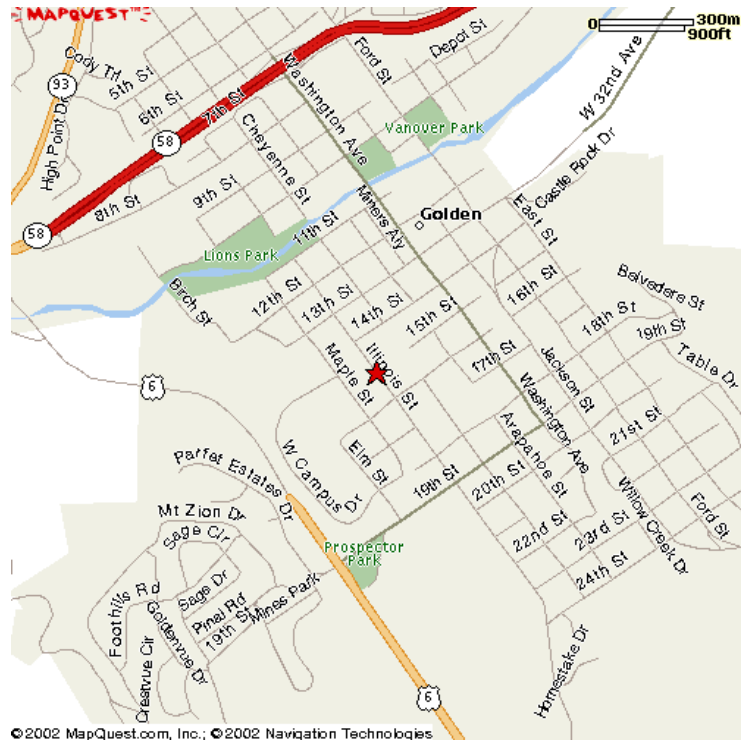
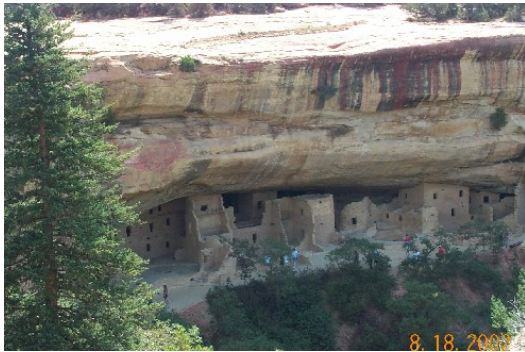
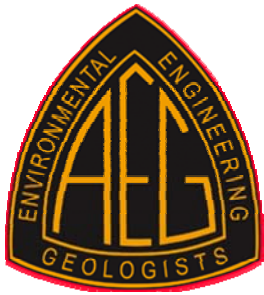
#### Special SAGEEP 20th Anniversary Gala at Denver's Red Rocks Park

Join colleagues for a not-to-be-missed celebration of SAGEEP's 20th Anniversary at Denver's Red Rocks Park, where attendees will enjoy cocktails, a Colorado-themed dinner, and spectacular views from this renowned outdoor music amphitheater set in natural red rock formations. An evening to remember...and a conference you can't miss!

For For SAGEEP 2007 **details and a printable symposium preliminary program**, please visit <http://www.eegs.org/sageep/index.html>.

EEGS/SAGEEP 2007  
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GEI Consultants, Inc.  
6950 S. Potomac St. Suite 300  
Centennial, CO 80112



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



ASSOCIATION OF ENVIRONMENTAL & ENGINEERING  
GEOLOGISTS

# AEG Student Night

Friday April 13, 2007

5:30-8:30 PM

Student Center, Colorado School of Mines, Golden, CO

The Association of Environmental & Engineering Geologists (AEG) represents professionals in the field of environmental and engineering geology in the greater Denver area and throughout the Rocky Mountain region. AEG is hosting our Annual Student Night Banquet, where students from across the Rocky Mountain region will present their research as part of this well-attended networking event.

We would like to invite you to participate as a sponsor for the event. This event also serves as an excellent recruiting opportunity, as the region's top students will be in attendance. You may participate at the following levels:

<b>SPONSORSHIP OPPORTUNITIES</b>	
<b>Student Award Sponsor</b>	<b>\$400</b>
<b>Platinum Level</b>	<b>\$200</b>
<b>Gold Level</b>	<b>\$100</b>
<b>Silver Level</b>	<b>\$50</b>
<b>Bronze Level</b>	<b>\$25</b>

Sponsors will be recognized on a poster board displayed at the meeting as well as published in the Section newsletter and posted on the Section website ([www.aegrms.org](http://www.aegrms.org)). To encourage participation, students receive complimentary banquet admission; all other attendees pay the usual meeting fee of \$25. This event would not be possible without the support of our sponsors. From all of us at AEG, thank you for your generous donation!

## SPONSORSHIP PLEDGE

<input type="checkbox"/>	Student Award (\$400)	Name of Company	_____
<input type="checkbox"/>	Platinum Level (\$200)	Name of Contact	_____
<input type="checkbox"/>	Gold Level (\$100)	Address	_____
<input type="checkbox"/>	Silver Level (\$50)		_____
<input type="checkbox"/>	Bronze Level (\$25)	Phone	_____
		E-mail	_____

Please fax this completed form to **303.657.4037, Attn: Steve Compton**  
No later than **March 23, 2007** (To ensure publication of your sponsorship)

Payment can be made at the banquet meeting, or by sending a check to:  
AEG-RMS  
P.O. Box 280663  
Lakewood, CO 80228-0663