

AEG SAN JOAQUIN VALLEY CHAPTER

September 2014

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Kiersti Ford  
Staff Geologist  
Technicon Engineering Services,  
Inc., Fresno  
[kierstirae@gmail.com](mailto:kierstirae@gmail.com)

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Jerry DeGraff  
Engineering Geologist  
Sort of Retired  
[jdegraff@csufresno.edu](mailto:jdegraff@csufresno.edu)

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Geologist  
Caltrans  
[christopher.ogletree@dot.ca.gov](mailto:christopher.ogletree@dot.ca.gov)

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Rich Fink  
Principal Geologist  
Kleinfelder, Inc.  
[rfink@kleinfelder.com](mailto:rfink@kleinfelder.com)

### **Faculty Advisor, Newsletter Editor**

Chris Pluhar  
Professor, Earth and  
Environmental Sciences  
CSU, Fresno  
[cpluhar@csufresno.edu](mailto:cpluhar@csufresno.edu)

## **Hello to all of the new and returning members of the San Joaquin Valley Chapter of the Sacramento Section!!**

I hope each of you had a great summer and are enjoying the transition to a hopefully cooler Fall. For you scholastic types, I know it's winding UP for the new school year. To get this year started on a really enjoyable note, Greg Stock will be returning as guest speaker for our meeting on September 18<sup>th</sup> (remember, the third Thursday of each month!!). Greg is the first and current Park Geologist for Yosemite National Park. His adventures and interesting talks have given us a better understanding of rock fall and rock avalanche processes with Yosemite as the case study. Put this date on your calendar and come join the meeting.

We ended spring and early summer with elections for new chapter officers. As you see on the left, we have three newly involved people serving as chair, vice/co-chair and treasurer. If you can, reach out to these people with suggestions to make our group more responsive to your needs and interests. For example, if you can be a speaker or know of anyone who might be interested in speaking at one of our meeting, PLEASE, pass along the info.

ALSO, we are very open to suggestions for events, field trips, or other ways to get together and interact. Last year's hike to the top of Table Mountain was just the sort of thing we need more of. Good people, interesting geology, enjoying the outdoors...what could be better? So, please give it some thought and lets get out into our local geology this year!!

Hope to see more of you at our September meeting and get involved!!

Sincerely,  
Rich Fink  
Former Chair, current sponsorship coordinator

# Cosmogenic exposure dating of coseismic rock avalanches in Yosemite Valley

*Dr. Greg Stock, PG*

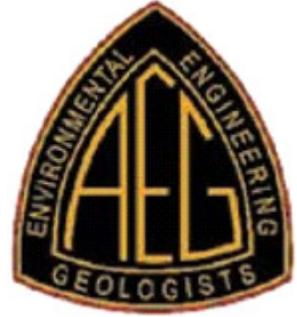
**September 18, 2014**

**Abstract:** The floor of Yosemite Valley preserves ten extremely large rock fall deposits, which are up to several million cubic meters in volume. These deposits extend far beyond the base of active talus slopes onto the valley floor and have occurred since the retreat of Last Glacial Maximum glaciers circa 15-17 ka. The hazard associated with rock avalanches depends in large part on the frequency of their occurrence, which was previously unknown for Yosemite Valley. We employed cosmogenic beryllium-10 surface exposure dating of boulders embedded within the rock avalanche deposits. Mean exposure ages for the various rock avalanche deposits indicate that failures occurred at 1.0, 1.8, 2.3, 3.7, 4.4, 6.4, and 11.6 ka. Statistical analysis suggests that at least three of the deposits represent two or more failures from the same location, separated in time by hundreds to thousands of years. Synchronous rock avalanches at different locations within the valley appear to have occurred at 3.7 ka, and possibly at 2.3 ka, suggesting coseismic triggering. Age correlations tentatively identify large earthquakes originating from the eastern Sierra Nevada and western Nevada as possible triggers for these rock avalanches. In Yosemite Valley, cosmogenic beryllium-10 exposure dating of rock avalanches provides robust age data essential for quantifying the hazard associated with these catastrophic events.



**Bio:** Dr. Stock is the first-ever Park Geologist at Yosemite. He has a Bachelor of Science degree in Geology from Humboldt State University, a Ph.D. in Earth Sciences from U.C. Santa Cruz, and is a licensed Professional Geologist in the state of California. Greg has worked as a geologist in the Sierra Nevada for more than ten years, and has experience in all aspects of geology, but his expertise is in geomorphology, the study of landscapes and the processes that shape them. Since arriving in Yosemite in 2006, Greg has focused on researching and mitigating geologic hazards such as rock falls and debris flows, mapping the park's bedrock and sedimentary geology, and assembling Yosemite's glacial history. He has authored or co-authored eighteen papers in peer-reviewed scientific journals, written more than 40 scientific abstracts, and recently completed a book on Yosemite's geology.

# September 2014 AEG Meeting RSVP Sheet



Fax or E-mail to the address below:

To: Richard Fink [E-mail: rfink@kleinfelder.com](mailto:rfink@kleinfelder.com)  
Office: 559.577.1451; Fax: 559.442.5081

From: \_\_\_\_\_ E-mail: \_\_\_\_\_

Subject: September AEG San Joaquin Valley Chapter Meeting

Date: September 18, 2014

Place: Elbow Room in Fig Garden Village, Shaw Avenue

Time: 6:00 - 7:00 PM - Sign in & Social hour  
7:00 - 8:00 PM - Dinner & Announcements  
8:00 - 9:00 PM - AEG meeting & Speaker presentation  
9:00 - 9:30 PM - Questions & Answers

On the Menu: several choices will be available to choose from

Cost (circle one): \$10 for students \$25 for non-students



Richard Fink, CEG  
[rfink@kleinfelder.com](mailto:rfink@kleinfelder.com)  
[kleinfelder.com](http://kleinfelder.com)

5125 N. Gates Ave.,  
Suite 102  
Fresno, CA 93722  
o/ 559.486.0750 ext. 1451  
c/ 559.709-2737  
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One-eighth page logo advertising in 2012 – 2013 newsletters

### **Gold - \$500/year**

Speak at one meeting for 10 minutes to describe company  
Set up a booth at one meeting  
One-half page advertising area in 2014 – 2015 newsletters

For more information contact  
Sponsor/Advertising, Rich Fink

## ***Calendar of Events***

**September 18<sup>th</sup>, 2014**

*Dr. Greg Stock, Yosemite National Park Geologist*  
**Elbow Room in Fig-Garden Village**

**October 16<sup>th</sup>, 2014**

*TBA*

**November 20<sup>th</sup>, 2014**

*TBA*

**December 18<sup>th</sup>, 2014**

*TBA*