

New Feature - Job Openings



# AEG SACRAMENTO

Quarterly Bulletin

Our August Section Meeting Was Held On: **Tuesday, August 31, 2010**

Meeting Location: **The Aviator, Sacramento Executive Airport**  
6151 Freeport Blvd., Sacramento, CA.

**Our speaker for the evening was:**

**Dr. Roy J. Shlemon, Honorary Member  
of AEG, who discussed “A Proposed  
Mid-Holocene Age Definition for  
Hazardous Faults in California”**

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## Job Openings

*Fisher & Strickler Rock Engineering, Prescott, AZ - (current as of 9 Sep 10) [www.fsrengineering.com](http://www.fsrengineering.com)*

Project Geotechnical Engineer - Full Time Position

Project Engineering Geologist - Full Time Position

*URS Corporation, Sacramento, CA - (current as of 14 Sep 10) [www.urscorp.com](http://www.urscorp.com)*

Hydraulics/Hydrology Project Manager - Full Time Position

Senior Geotechnical Engineer - Full Time Position

Staff Engineer - Geotechnical - Full Time Position

# AEG Sacramento 2010

## Event Calendar

- January 26th  
Sudwerk, Davis      **speakers:** Gerald Montgomery, Interwest Consulting Group and Kim Schwab, Central Valley Regional Water Quality Control Board:  
*New Stormwater requirements and management techniques.*
- January 27  
Sacramento      BPELS Board Meeting
- February 23rd  
Aviator, Sacramento Executive Airport      **Speaker:** Dave Wagner, California Geological Survey:  
*The Oak Creek Debris and Mudflow, July 12, 2008 - Inyo County, California*
- March 30th (Mon)  
Aviator, Sacramento Executive Airport      **Speaker:** Will Arcand, State Mining and Geology Board  
*Roles of the Engineering Geologist Under California's Surface Mining and Reclamation Act of 1975 (SMARA)*
- April 27th (Tue)  
Sudwerk, Davis      **AEG's Annual Student night. Speakers:** Student Speakers TBD and Dr. Greg Stock, Park Geologist, Yosemite National Park: *New Tools for Understanding and Mitigating Rockfall Hazards in Yosemite National Park*
- May 1-2      Spring Field Trip to Yosemite National Park - view current research on rock fall, glaciers, and floods)
- May 15-19      AEG North Central Section Short Course  
A New World in Geophysics
- May 25th  
Aviator, Sacramento Executive Airport      **AEG Foundation Fund Drive Speaker:** Duane Kreuger, AEG National President: *Environmental consulting - where we are and where we are going.*
- June 18-19      **2010 AEG San Francisco Section Short Course:**  
**Glen Borchardt's SOIL STRATIGRAPHY for TRENCH LOGGING**  
For more information please go to:  
[http://www.aegsf.org/short\\_course.html](http://www.aegsf.org/short_course.html)
- WHEN: Friday and Saturday,**  
**June 18 (Classroom) and 19th (Fieldtrip-Point Pinole Regional Shoreline),**



# AEG Sacramento 2010

## Event Calendar - Continued

June 29th Aviator, Sacramento Executive Airport	<b>Speaker:</b> Mark Stanley, Kleinfelder: <i>Sacramento Levees – Ongoing Improvements Challenges and Evolving Levee Design</i>
July 22 Raddison Hotel, Sacramento	<i>Deep Foundations Institute Technical Lectures Use of Slurry Walls for Cut-Offs (watch the DFI website for more details: <a href="http://www.dfi.org">www.dfi.org</a>)</i>
July 27th	No Meeting
August 31st Aviator, Sacramento Executive Airport	<b>Speaker: Dr. Roy J. Shlemon</b> <i>A Proposed Mid-Holocene Age Definition for Hazardous Faults in California</i>
September 18	NCGS Fieldtrip: <i>Geology and Tectonics of the Smartville Complex, NW Sierra Nevada, California</i> , Field Trip Leader: Dr. Elridge Moores
September 16-19	Friends of the Pleistocene Fieldtrip, The four-day trip will be led by Dr. Steve Wesnousky at UNR. For additional information visit: <a href="http://neotectonics.seismo.unr.edu/0_FOP2010/FOP2010.html">http://neotectonics.seismo.unr.edu/0_FOP2010/FOP2010.html</a>
September 20-25	AEG 2010 Annual Meeting, Charleston, South Carolina <a href="http://www.aegweb.org/files/public/2010_Annual_Meeting_Brochure.pdf">http://www.aegweb.org/files/public/2010_Annual_Meeting_Brochure.pdf</a>
October 26th Location, TBD	<b>Speaker:</b> Dr. Paul Marinos, AEG/GSA 2010 Richard H. Jahns Distinguished Lecturer in Engineering Geology
November	No Meeting
December Aviator, Sacramento Executive Airport	Annual Joint AEG/GRA holiday meeting

# CHAIR'S MESSAGE

**Greetings AEG Sacramento Section Members.** I address you as your new Acting Chair, stepping in as John Pfeiffer steps aside. John has served us very well for almost three years as our Section Chair. I know you join me in expressing thanks to John for this great service to us. I hope that sometime in the future John will be considering invitations now being extended to him for service to AEG at the National-level. This is a reflection of the fine job he did for us, and how he is viewed in those ranks. It has been a job well done John!

We have a great deal of activity in the section these days. Our meeting on August 31 was very well attended (over 50) with I think around 20 students. Thanks to sponsorships from various members and companies most if not all of the large number of students ate for free, and heard a thought-provoking talk from Dr. Roy Shlemon. A lively debate ensued, showing the students how geologists participate in shaping public policy and how our work directly affects public safety. You will hopefully be hearing soon about a field trip to a dam site in the Sierra, pending the approval of the owner and their contractor for our proposed visit. I am working with others on a workshop tentatively scheduled for next spring (possibly this winter) on advances in drilling and sampling technologies. This is a repeat of a very well-attended workshop we did about 5 years ago. There are constant advances in downhole instrumentation, both for geotechnical and for environmental site characterization, along with new developments in analytical lab work. The vendors of such services provide great support, and there will be technical talks throughout the day-long workshop. More info to follow.

I am off to Charleston on Sept. 21 for the AEG National Meeting, and I do hope to see some of you there. I am particularly pleased to attend this year, as our own past Chair Bruce Hilton will be assuming office as AEG's President. I do enjoy seeing my friends achieve such things! I will also be attending the AEG Board of Directors Meetings in Charleston and will bring back the latest and greatest to you all in October.

Younger members, many of whom I have known since your undergrad days, I want to open a dialog with you about service roles that need filling in the coming year. I will be e-mailing some of you directly, so prepare yourselves! We have a lot of fun. At my age, I don't undertake things unless they are fun. Happy fall everyone!

Eric Chase  
Chairman, AEG Sacramento Section

[Eric.Chase@hdrinc.com](mailto:Eric.Chase@hdrinc.com)

Abstract of Presentation  
Association of Engineering Geologists, Sacramento Section  
31 August 2010

## **A Proposed Mid-Holocene Age Definition for Hazardous Faults in California**

**Roy J. Shlemon**

Newport Beach, California

A Technical Advisory Committee (TAC) for the State Mining and Geology Board is reviewing “lessons learned” since passage of the Alquist-Priolo (AP) Act in 1972. The aim is to recommend changes and generally improve regulations and geologic practice concerning public health, safety and welfare as potentially impacted by surface-fault rupture. An “active fault” was initially defined as surface or near-surface rupture within about the past 10 ka. This deterministic number evolved to ~11.5 ka (Pleistocene-Holocene transition) and now, locally, to ~13 ka when expressed in calibrated radiocarbon years. However, engineering mitigation is now often cost-effective and technologically practical; and the TAC will likely recommend that “active fault” be replaced by the terms “hazardous” and “non-hazardous” faults, respectively.

On other issues, TAC discussions have been less than harmonious, if not downright contentious. Healthy debate is good for the growth of our profession and ultimately for the public well being. Accordingly, several TAC members now generally conclude that: (1) the potential for direct, fault-induced ground rupture be compared with recurrence and risk considered acceptable for mitigation of other natural hazards; (2) ideally, no specific deterministic number should define a hazardous fault, which may be practically mitigated based on professional judgment, cost, available technology and societal constraints; and (3) owing to some regulators and consultants “need” for deterministic numbers, the existing active-fault definition be realistically changed from ~11.5 ka to a mid-Holocene (~4-6 ka range), a non-specific interval that can be periodically revised with technological advances in the geologic and engineering sciences.

The proposed “mid-Holocene” age recognizes site-specific uncertainties, and closes the gap between the present 11.5 ka, active-fault criterion and the typical ~100 to 500-yr recurrence of other natural hazards typically mitigated by engineering design. Change in public policy and related regulation does not come easily, and may be detrimental to the economic livelihood of some geologists. Regardless, despite inherent uncertainties in all our work and conclusions, for the public good, as practicing geologists we should learn from new science, experience and common sense, and hence adjust accordingly. Are we brave enough to try?

**Speaker Bio: Roy Shlemon** received his Ph.D. from the University of California at Berkeley during the late Pleistocene. Dr. Shlemon was formerly on the faculty of the University of California at Davis and the Louisiana State University at Baton Rouge.

His consulting practice for the past 40 years centers on Quaternary geology, geomorphology and soil-stratigraphy as applied to engineering-geologic practice. He is an Honorary Member of the AEG, the AIPG; and a member of seemingly countless professional societies and pays dues accordingly. He currently serves on the Foundations of the University of California at Davis and the University of Wyoming at Laramie, as well as on a myriad of professional-society and academic committees.

His presentation to the AEG, Sacramento Section focuses on “lessons learned” since passage of the Alquist-Priolo Act in 1972, on acceptable risk for surface faulting, and on suggestions for practical mitigation of ground rupture.

# NORTHERN CALIFORNIA GEOLOGICAL SOCIETY



**NCGS FIELD TRIP - Saturday, September 18, 2010**

## “GEOLOGY AND TECTONICS OF THE SMARTVILLE COMPLEX, NW SIERRA NEVADA, CALIFORNIA”

**Leader: Dr. Elridge Moores, Distinguished Professor Emeritus  
University of California, Davis**

### Abstract

The Smartville Complex comprises a north-trending submarine intrusive-extrusive (ophiolitic) complex, approximately 100km long by 40km wide in the northwestern Sierra Nevada Foothills. Generally from bottom to top, rocks comprise serpentinite (a few exposures), olivine gabbro, and layered gabbro, varitextured massive pyroxene and hornblende gabbro, plagiogranite, massive diabase, sheeted diabase, pillow lava, and volcanoclastic sediments. A few massive sulfide deposits are present in the volcanoclastic sediments. Rocks range from nearly undeformed--perhaps the best-preserved sheeted dikes and pillow lavas in North America--to highly schistose. Structure is complex, but rocks describe approximately a north-trending antiform that structurally overlies mélangé and associated sediments of the Central Belt of the Sierra Nevada. Dikes intrude both igneous rocks and here and there Central Belt sedimentary rocks. Dikes are mostly north-trending, but curve to NE-trending towards the N. In places (Stanfield Hill, Marysville Road) the dikes are nearly undeformed, trending NNW and dipping steeply E. In other places, e.g. in Auburn, Oroville Dam south abutment, and along the E. side of the complex, dikes and other rocks are highly foliated.

Volcanic rocks compositionally are mostly island-arc tholeiites and oceanic andesites, although MORB compositions have been reported in a few places. Tectonic relations with underlying rocks include a tectonic window near Higgins Corner, a half-window north of Lake Oroville and the high-angle Wolf Creek Fault zone and continuations on the eastern side. On the west, the Smartville and associated rocks are covered by Great Valley deposits and/or intruded by subsequent granitic plutons. Associated ophiolitic rocks include the older Lake Combie Complex, east of SR 49, and the approximately 200 Ma Jarbo Gap and Slate Creek Complexes N and NE of the Smartville complex.

The Smartville complex and associated ophiolites may have been emplaced by collision of one or more west-dipping subduction zones with the North American Continental Margin (or with the western margin of the "Rubia" ribbon continent" of Hildebrand, 2009 GSA Sp. Pap. 457.

\*\*\*\*\* **Field Trip Logistics** \*\*\*\*\*

**Time & Departure:** 7:30 am Saturday September 18, 2010,

Sun Valley Mall Sears Parking Lot, Pleasant Hill (corner of Contra Costa Blvd and Willow Pass Road)

**Cost:** \$65/person includes transportation by chartered bus, guidebook, morning coffee & pastries, lunch, and refreshments.  
A list of participants will be circulated so that you can arrange carpools to the departure location.

\*\*\*\*\***REGISTRATION FORM (Smartville Complex Field Trip)**\*\*\*\*\*

Name: \_\_\_\_\_ E-mail: \_\_\_\_\_

Address: \_\_\_\_\_ Phone : \_\_\_\_\_ Phone (cell): \_\_\_\_\_

Please mail a check made out to NCGS to: **Tridib Guha**  
**5016 Gloucester Lane,**  
**Martinez, CA 94553**

Questions: e-mail: [tridibguha@sbcglobal.net](mailto:tridibguha@sbcglobal.net) Phone: (925) 370-0685 (evening), (925) 451-1999 (day)

**LIST OF AVAILABLE PUBLICATIONS  
AEG SACRAMENTO SECTION  
2010**

**Note: All suggested donation amounts are for section members in good standing.**

**\* Suggested donation (S.D.) amounts do not include postage/shipping/handling  
Non-members should contact the Section Chair as to prices and availability.**

1. **“Quaternary Geology of the Sacramento Area”**, Guidebook for March 2000 Field Trip; Trip Leaders Dr. Roy Shlemon, Dr. Tim Horner, and Dr. Joan Florsheim; 38 pages with two color photomicrographs plus appendices covering Quaternary channels; economic implications; Pleistocene channels of both the American and Cosumnes Rivers; Stratigraphic settings; Topographic inversions; Fracture Traces. **Suggested Donation (S.D.): \$10 \***
2. **“Engineering Geology Practice In Northern California”**; AEG Special Publication 12, Published 2001, Editors Horacio Ferriz and Robert Anderson, 658 pages, 7 Sections: 1. Overview of Northern California Geology/Groundwater Resources; 2. Landslides; 3. Faults; 4. Facilities; 5. Tunnels & Transportation; 6. Residential; 7. Kaleidoscope **Suggested Donation (S.D.): \$70 \***
3. **“Auburn Damsite Field Trip”**; CD Compilation for 2002 Field Trip; Trip Leaders Joel Sturm and Wendell Carlson of USBR and Brent Smith of PCWA; CD includes Field Trip Introduction; contacts list; 11 PDF articles covering damsite investigation, geohazards and regional geology; 3 PowerPoint presentations of damsite evolution including rare aerial photos; 2 large USBR geologic compilations drum-scanned as JPG’s with legend and rock explanations/descriptions (pdf’s). **Suggested Donation (S.D.): \$15 \***
4. **“Wine & Rocks 2004 Field Trip”**, Guidebook for Spring 2004 Field Trip through Sierra foothills of Sacramento, El Dorado, and Amador Counties; Field Trip Leaders George Wheeldon & David Sederquist; Guidebook includes Road Log; Overview of the Geology (Rocks) including 4 black-and-white geologic map excerpts and 4 color excerpts courtesy of CDMG; 1990 reprint of AAPG Field guide of the Mother Lode Mines in the Sierra Nevada; Wines Section includes background descriptions and wine offerings of 5 Amador/El Dorado County Wineries. **(S.D.): \$20 \***
5. **“Geographic Information Systems (GIS) for Practicing Geologists”**, 2005 Professional Development Workshop; Ringed Binder with tabbed sections presenting talks by 11 Speakers from State and Federal Agencies, Private Consulting Firms, Universities, and Software Vendors. Print-outs and 2 CD’s provide practical examples and applications of GIS techniques to common geologic mapping and hazards evaluation projects. Techniques to store, manipulate and analyze spatial data for geologic applications are described in detail for various projects. Software packages and the capabilities are also explained. **Suggested Donation (S.D.): \$20 \***
6. **AEG – GRA 1995 Field Trip Guidebook**, CD Compilation of Field Trip Guidebook for Joint Annual Meeting, held in Sacramento, CA; 4 Subject Sections, 26 PDF Papers total with graphics: 1. Flood Hazards & Protection Measures for the Sacramento Area; 2. Geology & Geotechnical Aspects of the Lone Formation; 3. Geology & Engineering Geology of the Sacramento Valley to Napa Valley; 4. Geology of the Sacramento Area, Foothills, & Sierra Nevada Mtns. **(S.D.): \$20 \***
7. **Schlemon Conference 2008 Field Trip Guide CD** Compilation of Field Trip Guidebook for Conference held in Folsom, CA; Conference theme was “Overview of Naturally Occurring Hazardous Geologic Substances”; Trip through the Sierra foothills included geologic stops in Amador, El Dorado, Placer, and Nevada Counties showcasing potential radon, naturally occurring asbestos, lignite, chromite, copper, gold (cyanide), arsenopyrite (arsenic) in tailings, cadmium, lead, mercury, barium, cobalt, nickel, selenium, and zinc. **Suggested Donation (S.D.): \$10 \***
8. **“Engineering Geology and Geologic Hazards in the Pit River Area, Eastern Shasta County, California.”**; CD Compilation of 2009 Summer Field Trip Guidebook; Editors Kelly Tilford and Eric Chase; Field trip focused on Modoc Plateau, Cascade Range, and Basin & Range along the Pit River near Burney, California. The trip included case studies of slope stability, paleoseismicity and recent construction challenges. **Suggested Donation (S.D.): \$10 \***

**AEG Sacramento Section – Publications Order Form  
Spring 2010**

(Section Members in Good Standing Only\*)

<u>Summary Description</u> (details in List of Available Publications)	<u>Suggested Donation*</u>	<u>Quantity</u>
“ <b>Quaternary Geology of the Sacramento Area</b> ”, Guidebook for March 2000 Field Trip	\$10	_____
“ <b>Engineering Geology Practice In Northern California</b> ”; AEG Special Publication 12, Published 2001, 658 pages	\$70	_____
“ <b>Auburn Damsite Field Trip</b> ”; CD Compilation for 2002 Field Trip; 11 PDF Articles, 3 PPT, 2 geologic maps	\$15	_____
“ <b>Wine &amp; Rocks 2004 Field Trip</b> ”, Guidebook with maps for Spring 2004 Field Trip through 3 Sierra Foothill Counties	\$20	_____
“ <b>GIS for Practicing Geologists</b> ”, Ringed Binder and 2 CD’s for Spring 2005 Workshop: examples, techniques, software	\$20	_____
“ <b>AEG – GRA 1995 Field Trip Guidebook</b> ”, CD Compilation of Field Trip Guidebook for Joint Annual Meeting in Sacramento, CA: 26 PDF Papers graphics, maps	\$20	_____
“ <b>Schlemon Conference 2008 Field Trip Guide</b> ”, CD Compilation of Naturally Occurring Geologic Hazardous Substances	\$10	_____
“ <b>Pit River 2009 Field Trip Guide</b> ”, CD Compilation of Engineering Geology and Geologic Hazards, Eastern Shasta County	\$10	_____
<b>Order Total**</b>	\$	_____

\*\*Postage/Shipping/Handling \$ \_\_\_\_\_

Member Name \_\_\_\_\_ Member will pick up \_\_\_\_\_  
Initials date

**\*\* Suggested Donation Amounts do not include postage/shipping/handling**  
**AEG Special Publication 12: P/S/H is currently \$13**  
**All other available publications, P/S/H is \$6 each**  
**Note: Pick-up at AEG Sac Section Meeting waives P/S/H**

*\* Proceeds from donations tendered by A.E.G. members are used to fund annual academic scholarship awards for deserving Geosciences Students in the greater Sacramento area.*

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 P/S/H to:

Tim McCrink  
 AEG Sac Section Treasurer  
 c/o California Geological Survey  
 801 K Street, MS 12-31  
 Sacramento, CA 95814-3531  
**Tim.McCrink@conservation.ca.gov**

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Advertisements may be full color and include logos and other artwork. The digital format specifications and advertising rate structure are currently being developed and will be included in the next newsletter. Questions regarding advertising may be directed to Garry Maurath, [gmaurath@urscorp.com](mailto:gmaurath@urscorp.com), 916-679-2002

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