



CALIFORNIA SECTION NEWSLETTER – SPRING 2016

An Evening with Roy Shlemon



The California Section of AIPG and the UC Davis Student Chapter are pleased to announce our speaker for Thursday May 5, 2016 at 6 pm to 8 pm. The talk will be at the UC Davis Moores Conference Room in the Earth and Planetary Sciences Building.

Dr. Shlemon will talk about his professional career which spans over half a century. He will answer questions about interesting projects as a geologist.

About Dr. Roy J. Shlemon

**President and Principal of R.J. Shlemon & Associates, Inc., Newport Beach, California;
Consulting Services in the Geologic and Environmental Sciences**

Dr. Shlemon received his Ph.D. from UC, Berkeley in 1967.

Prior to his Cal-Berkeley degree, he received a M.S. in Geology from the University of Wyoming in 1958 and B.A. from Fresno State College in 1957.

Shlemon has held various academic positions at UC, Davis; LSU; Stanford University; UCLA; & several other institutions.

He has carried on a geological consulting practice for over 30 years specializing in Quaternary geology, geomorphology, geoarchaeology, and soil stratigraphy. Furthermore, he has been involved in many engineering geology projects in regard to seismic investigations for large dams and nuclear plants as well as applications of engineering geology to various mining applications.

Shlemon has been generous to a variety of universities and professional organizations; he has been a long-time supporter of the GSA through scholarships and support for the *Roy J. Shlemon Mentor Program in Applied Geology*. He also has been a major donor to the UC at Davis where he established an endowed chair and the University of Wyoming, among others.

Location:

University of California, Davis; Dept. of Earth and Planetary Sciences
3125 Earth and Physical Sciences Bld.; 462 Crocker Lane
Davis, CA 95616-5270

MARCH 2016 TALK BY BILL MOTZER RECEIVED WELL



In a presentation to the AIPG California Section and the U.C. Davis Student's Chapter, Bill Motzer gave a talk titled Geology and Geochemistry of Chromium Sources in California's Groundwater on Wednesday, March 10, 2016. Bill noted that "chromium including chromium (VI) species occur in California's groundwater from both anthropogenic and geogenic (natural sources). Past investigations largely focused on anthropogenic sources popularized by the 2000 movie Erin Brokovich. More recently, groundwater investigations have focused on geogenic sources with California having a unique geologic framework, including numerous areas of ultrabasic and serpentinized ultrabasic rocks. These contain abundant chromium and chromium minerals, which when weathered, can undergo transformation in the critical zone to Cr(VI) complex oxyanions."

RING MOUNTAIN AIPG FIELD TRIP

MAY 14, 2016

by **Bill Motzer**

The San Francisco Bay Area has several areas where ultrabasic and serpentinized rocks can be observed, including the Mt. Diablo ophiolite east of Danville and the Ring Mountain Open Space Preserve (RMOSP) in Marin County. In the critical zone, many RMOSP soil types derived from the underlying serpentine and ultramafic rocks are serpentine soils, having unusually high concentrations of iron, chromium, nickel, and cobalt, but are deficient in calcium and have low water holding capacities. Such soils can be very stressful for plant growth, consequently forming serpentine barrens commonly consisting of open grassland or savannas where the climate would normally result in forest growth. Serpentine barrens also result in unique eco- or model-systems for evolution, ecology, and conservation studies of rare plant communities. On RMOSP serpentine soils cover about 225 acres.

Groundwater in alluvial aquifers derived from ultrabasic and serpentinized terrain can contain Cr(VI) oxyanions, particularly CrO_4^{2-} and $\text{Cr}_2\text{O}_7^{2-}$, generally forming under alkaline pH and oxidizing (+Eh) conditions. In other areas, Cr(VI) oxyanions can sorb to hydrous ferrous oxide (HFO) coatings on quartz grains. For projects in which recycled water (RW) is introduced to replenish depleted groundwater supplies, changes in pH and Eh have the potential for liberating Cr(VI), arsenic, and lead. Prior leaching tests with pilot stabilized RW and geochemical modeling, using USGS PHREEQC and PHAST models can be used to determine possible impacts to groundwater by these constituents. The trip is free for AIPG and student members.

About William E. Motzer, PhD, PG, CHG, Senior Geochemist at Todd Groundwater
bmotzer@toddgroundwater.com

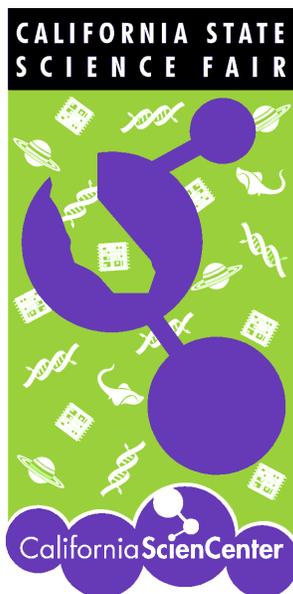
William E. (Bill) Motzer is a registered California Professional Geologist (PG) and Certified Hydrogeologist (CHG), with PG registrations in five other states. Bill has extensive experience in conducting surface and subsurface water quality chemistry and environmental forensic investigations. Bill is a recognized expert in water quality and forensic geochemistry, with particular expertise in stable and other isotopic “fingerprinting” and age dating techniques, water quality/contaminants, and emerging contaminant geochemistry. He has conducted numerous environmental projects, throughout California and other western states. He is a past President of the San Francisco Bay Branch of the Groundwater Resources Association of California (GRA), past Chair of the Northern California Section for the Society for Mining, Metallurgy & Exploration (SME), and contributing editor to the California Section of the American Chemical Society’s (ACS) newsletter – the Vortex (www.calacs.org).

GETTING CLOSER TO BROADCASTING “MEET YOUR MENTOR[®] INTERNET RADIO SHOW FEATURING GEOLOGISTS



California Section Student Mentor and Operation Unite[®] Founder Stephen Baker has been preparing internet radio shows that will encourage students in choosing a water related profession. Water is a critical player in many geologic environments. Our very own UC Davis Student Mentor Robert Campbell has been working with Operation Unite[®] in pre-recording nine of twelve programs in his series. The remaining three will be live productions. He also will provide all his listeners with two field trip experiences. He will take his listeners to one site where he is collecting hydrogeologic information for a possible law suit. The second field trip takes the listener to northern California community where Robert is drilling a municipal water well. Robert is showcasing the exciting opportunities in engineering geology that he has experienced throughout his professional career. A lot of wisdom and practical wisdom are shared. The Meet Your Mentor[®] show bridges the gap between the academic environment and the business world. Stephen will let everyone know when these very motivating shows are scheduled for broadcast.

2016 CALIFORNIA STATE SCIENCE FAIR, MAY 24, 2016



The California Section of AIPG will participate in the Earth Science category of judging of the California State Science Fair. The annual event takes place in the late spring of each year at the California ScienCenter. For more than a decade, David Sadoff has arranged and participated in the judging. Other AIPG members have also participated in the past include Mark Rogers, Mehmet Pehlivan, James Jacobs and others. If you are looking for general information about the Fair, please see the Fair's web site at <http://www.usc.edu/CSSF/> Newsletter Questions or Comments: James A. Jacobs, California Section President, Clearwater Group, 229 Tewksbury Ave., Point Richmond, CA 94801 jjacobs@clearwatergroup.com tel: 510-590-1098