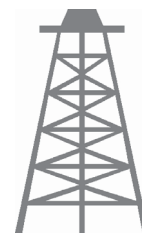




# Pacific Petroleum Geology



NEWSLETTER

Pacific Section • American Association of Petroleum Geologists

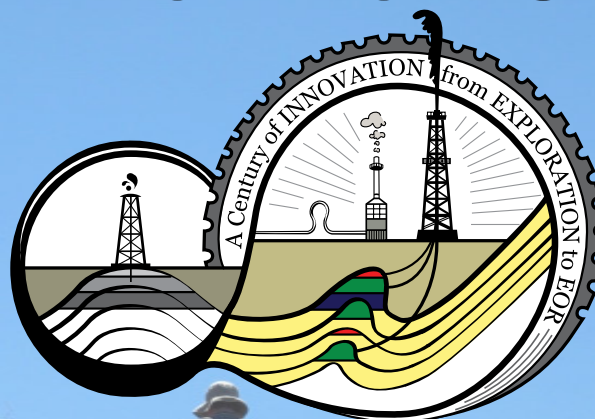
November & December 2013

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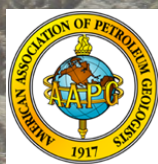
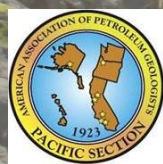
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- Scanned photos, illustrations (line art) or logos should preferably be submitted as a .tif, .gif, .eps, or .bmp.

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Dear Pacific Section and Affiliated Society members.

As we move from summer to autumn, the activities of the Section and our Affiliated Societies have a burst of energy prior to the Holidays. I would like to utilize this Presidents Letter to give you a flavor of what is happening and encourage you to participate in events and communicate with Society and Section leaders.

There have been great speakers at our Society meetings (I was able to attend Don Clarke's talk on induced seismicity at the San Joaquin Geological Society Meeting in October), fun golfing and BBQ events, and an outstanding Student Expo at Cal State University Northridge. I encourage you to read the summary report of the event written by Kathleen Marsaglia, included in this newsletter. I know from personal experience how much work goes into this event and how much we all get out of participating. Please take the opportunity to contact Kathie and thank her for the outstanding job she does. The Expo will take place again next October.



Planning for our Pacific Section AAPG Annual Convention is fully underway. Kevin Weberling and his team are pulling together the technical and social program for the meeting that will be held in Bakersfield from the 27th to 30th of April, 2014. The Technical Program includes several field trips to key outcrops around the San Joaquin Valley (Westside oilfields, Eastside heavy oil, clastic reservoirs, and injectites.) These will be led by an impressive mix of very experienced and less experienced geologists. Two days of oral and poster sessions are planned, covering a range of pertinent topics; heavy oil, fractured reservoirs, siliciclastics, fine-grained reservoirs, and regional geology/tectonics. Short courses will also cover a broad range of subjects, including core workshops, "ancient" well logs, and image log interpretation. Announcements and the Call for Papers will be coming soon. Please make plans to join us in Bakersfield.

Over the past five years, PS has been supporting University teams to participate in the Imperial Barrel Awards competition. At the Monterey Convention, we had an outstanding five team competition, eventually won by the University of Alaska, Fairbanks. We are getting prepared for another competition in 2014. Unlike the last event, we will be having the competition in Bakersfield in March, 2014. Our Annual Section Convention takes place after the AAPG National Convention, and the winning PS team needs to be ready to go for the finals on the 4th and 5th of April in Houston.

Teacher of the Year nomination requests have been sent to our Affiliated Society Presidents. This program extends and strengthens our Section / Society links but more importantly builds links into local communities. We encourage all members to contact their Society leaders with recommendations from your Society for the TOTY award.

PSAAPG Scholarships are available for 2014. These are matching funds provided to Society nominated students. Here is another opportunity for us to reach out to the community and provide funding to deserving students. Please contact your Society reps to learn about their scholarship programs. You can also contact the Pacific Section AAPG IBA and Scholarship Chair, Cynthia Huggins for more information.

AAPG National is trying a new information tool, the AAPG Advisory. This is a monthly information "dump" that consolidates all of the news about all the activities, events, deadlines, and happenings that used to hit AAPG members on a daily if not hourly basis. The Advisory is a one stop shop of AAPG info. In preparing the PS submittal for the Advisory, I went onto the Society websites to see what was happening. I was greatly impressed with the programs coming up in Northern California and Alaska.

The Northern California Geological Society is having their monthly meeting on November 20, 2013 at 7:00 pm at Orinda Masonic Lodge. The presentation will be given by James J. Rytuba, Victoria E. Langenheim, and Daniel N. Goldstein, of the USGS, Menlo Park. Their presentation is entitled: Effects of the Paso Robles Geothermal System on water quality and availability in the Paso Robles Groundwater Basin, California. If you would like more information, please see <http://www.ncgeolsoc.org/meetings.htm#Meetings> for details.

***Continued on page 4***

## KEN WAINWRIGHT

Ken Wainwright, a long-time San Joaquin Geological Society and PSAAPG member, unexpectedly passed away August 31, 2013 at age 77. Ken resided in Bakersfield, Ca. He is survived by his wife Sharon, a daughter, Beth and granddaughter, Katie, of Beaverton, OR; a sister, Barbara Ginther of Garden City, KS, and a brother, Francis, of Yakima, WA.



Ken was a native of Kansas, and received an undergraduate degree in Geological Engineering and a master's degree in Geology from the University of Kansas. Ken served his country with active duty in the Navy for two years in the early 1960's. Following that active duty, he was in the Naval Reserves for several years.

Ken's professional career as a geologist began in 1962 with ARCO in Dallas, TX. After stops in Denver and Roswell, he and Karen were transferred by ARCO to Bakersfield in 1970. After retiring from ARCO in Bakersfield in 1985, he worked as a consulting geologist in Bakersfield.

Ken is remembered as a faithful member of First United Methodist Church, a former President of Kern Kiwanis, and a strong supporter of the University of Kansas.

---

### ***President's Message, continued from page 3***

Alaska Geological Society luncheon meetings are held at the BP Energy Center in Anchorage, Alaska. The meetings are scheduled on the 3rd Thursday of each month 11:30 AM – 1:00 PM, and everyone is invited. Here is the information on the November and December meetings: November 21, 2013, John Decker, NICO will speak about Seabed mapping and the search for oil and gas seeps offshore. On December 12, 2013, Greg Wilson with ConocoPhillips Alaska will speak about "Devil's Paw Prospect, Chukchi Sea Alaska." This is a joint meeting with the Geophysical Society of Alaska. If you would like more information, see <http://www.alaskageology.org/index.html> for more details.

Communication and participation. These are key activities for all of us. Please let us know if you have any questions or issues you feel we need to address.

Have a wonderful holiday season.

Dan




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*EDITOR'S NOTE: This article on the Black Gold exhibit at the Kern County Museum in Bakersfield is the fourth and final segment in an ongoing series highlighting California museums that celebrate a significant relationship to petroleum. The West Kern Oil Museum in Taft was featured in the Jan-Feb 2013 PSAAPG Newsletter, the R.C. Baker Memorial Museum in Coalinga was featured in the March-April 2013 newsletter, and the California Oil Museum in Santa Paula was featured in the July-August 2013 newsletter. The author thanks former SJGS President Frank Cressy for providing information about early efforts to raise money for and create the exhibit.*



"Black Gold: The Oil Experience" is an exhibit at the Kern County Museum in Bakersfield that celebrates the industry which put Kern County on the map over 100 years ago, and which still is a significant part of the county's economy, and America's oil production. Kern County remains far and away the leading county in California for petroleum production, accounting for 72% of all California oil production and 85% of gas production.

The \$4 million "Black Gold" exhibit combines aspects of oil drilling, exploration, production, transportation, refining, and marketing to help visitors understand the role that petroleum plays in everyday life. "Black Gold" opened in 2002, and has seen 550,000 visitors from around the world. Nearly 33% of these visitors have been school children. Museum Arts, Inc. of Dallas, Texas designed and fabricated the exhibit, which was six years in the making.

A committee of Museum and local oil industry personnel worked to raise "seed money" in the mid 1990's. Those funds allowed negotiations and planning/design with Museum Arts to commence. Local professionals also consulted with Museum Arts personnel to make sure the exhibit portrayed not only "generic" oil field and refining activities but things unique to Kern County production. Oil companies and oil field service companies contributed money and display items. Many PSAAPG and San Joaquin Geological Society members helped fund the exhibit financially in those early years. Their names are recognized with granite plaques outside of the Black Gold exhibit. SJGS now honors long time members by having a plaque with their name created and installed.

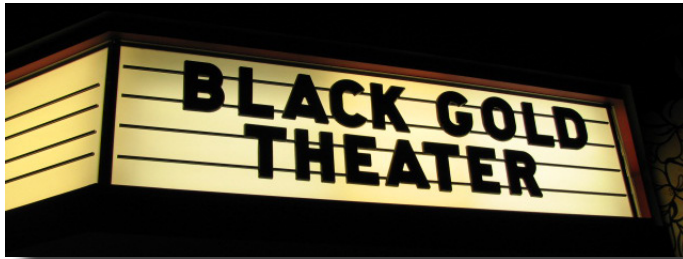
"Black Gold" is technically an inside exhibit area of 9,640 square feet. Outside the exhibit, the surrounding 2.3 acres show relics from Kern County's oil industry. This area was refurbished by local professionals coincident with the creation of the adjacent Black Gold exhibit. Inside highlights include

- a simulated undersea diving bell that goes beneath an ocean floor to show how sediment collects and oil is formed and trapped.
- An exit from the simulated diving bell into "underground passageways" show
  - o how oil-related rocks form, what they look like, and how oil is trapped
  - o the role of microfossils in oil exploration
  - o how seismic waves are created and propagate; these waves provide data used by geologists and geophysicists in searching for oil.
  - o How the earliest Kern County oil explorers were "miners" who worked underground
  - o How oil is pumped to the surface
- lots of lights, sound, animation, and colors that help sensory learners, and make exhibits very interactive.
- a theatre, which has a short film that orients visitors to local oil industry history and importance
- displays that show oil field life in the early days...not only for the workers, but their families.

Outdoors, there are 1) a wooden derrick powered by a steam engine, 2) a jack-line system of simulated pumping wells, 3) oil-field equipment, signs, and vehicles, 4) a 1944-vintage service station.

A visit to Kern County Museum and "Black Gold: The Oil Experience," is worthwhile. Find out Museum admission cost, location, hours of operation, etc., at [www.kcmuseum.org](http://www.kcmuseum.org).

***Continued on Page 6***



Theatre marquee



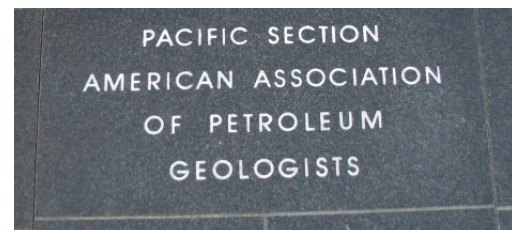
Interactive signage exhibit



Light simulates oil travel up a well



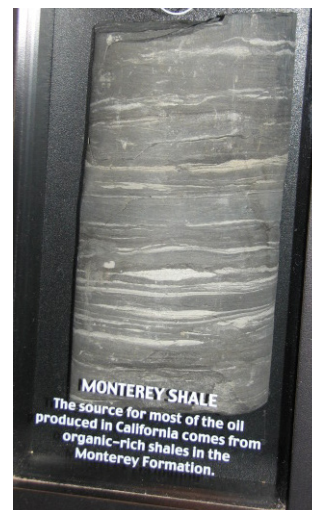
3-D Map of oil, natural gas, and petroleum products pipelines



Granite Plaques outside the exhibit recognize significant financial donors



An "underground" geologic passageway



Cores of important San Joaquin Basin stratigraphic units are displayed



## 2014 PSAAPG CONVENTION- April 27-30

How time flies! It seems like just yesterday that we were wrapping up our highly successful 2013 Convention in Monterey, CA. The end of the year and holidays are already upon us and the 2014 PSAAPG Convention Committee is busy planning next year's conference.

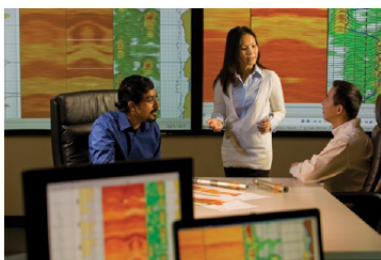
I am pleased to announce that the 2014 PSAAPG Convention will be held in downtown Bakersfield at the Marriott Convention Center from April 27th – 30th. Mark these dates on your calendars! The Convention will be held jointly with the Pacific Section- SEPM and the Pacific Coast Section- SEG. Many exhibitors and students will be there as well, so it will be a great opportunity to learn and communicate with others about the latest technical ideas and innovations in our industry. Learning is reflected in our Convention theme: **A Century of Innovation – From Exploration to EOR.**

The Convention will kick-off with an ice-breaker on Sunday evening followed by technical sessions on Monday and Tuesday. The planned technical themes offer a variety of topics for Pacific Section members to present papers in their respective areas of expertise. Short courses, field trips, and workshops will take place in the days immediately surrounding the technical sessions. Numerous social activities are also being planned for participants, guests, and spouses (see attached infographic on themes, short courses, field trips, workshops and activities).

Abstracts for technical papers are being accepted until Friday, January 31st. The abstract submittal process is currently being finalized, and Convention and field trip registration will begin shortly. Updated announcements will be posted on the PSSAAG.org website. Stay tuned!

-- Kevin Weberling – 2014 Convention General Chair

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# 2014 PSAAPG Convention - Bakersfield, Ca.



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## Field Trips, Short Courses & Activities:

Heavy Oilfields and Outcrops of the Eastside San Joaquin

Reservoir Plumbing in the Injectites of Panoche Hills

Giant Oilfields of the Westside San Joaquin Basin

Cuyama Basin in Memory of Gene Fritsche

Core Examples of San Joaquin Clastic Reservoirs

Fracture Characterization Core Workshop

Basic Image Log Interpretation

Working with Ancient E-Logs

Sequoia National Park  
Kern River Rafting  
Wine Tasting

... and more!



## Technical Themes:

Celebrating Century Fields from Discovery to EOR

Fine-grained Biosiliceous Rocks; the Monterey and Beyond

Structure, Tectonics, and Regional Geology of Western North America

Understanding Fractured Reservoirs: Characterization, Geomechanics, & Completions

Heavy Oil Development: How Technology Has Made the Unconventional Conventional

From Fluvial to Deepwater, Clastic Reservoirs and Depositional Systems of the West Coast



**EDITOR'S NOTE:** As PSAAPG earth scientists, many of us traverse the 110 miles between Bakersfield and Los Angeles on Interstate 5. The geology and scenery, from the San Joaquin Valley through the Tehachapi/San Emigdio Mountains, into the Transverse ranges, Ridge Basin, eastern Ventura Basin, and finally the Los Angeles Basin, represent beautiful areas of differing geologic origin. Regardless of your occupation...between Bakersfield and Los Angeles you see features which mimic the diversity and uniqueness of California. **NEXT ISSUE: PART 2- The Ridge Basin and the Ridge Route.**

### FRAZIER MOUNTAIN

Many geologic features converge in the Frazier Mountain/ Frazier Park area. Norris and Webb, in their classic text "Geology of California," called the area "the Structural Knot of Southern California," (Norris and Webb, 1990.) That is because four major California faults converge to flank a high topographic point...Frazier Mountain, elevation 8013'. (Dibblee, 1982) Figure 1 from Kellogg, 2004, is a generalized geologic map of the area. These four high-profile ...and earthquake-prone...faults are: 1) The San Andreas Fault, 2) two strands of the Garlock Fault, 3) the San Gabriel Fault, and 4) the Lockwood Valley/Big Pine Fault. Geologic maps also show that Frazier Mountain is almost completely surrounded by a thrust fault ring (Dibblee, 1982, Kellogg, 2004). Tectonic stress and strain are resulting in Frazier Mountain being elevated at about 0.4-0.8 cm/year (Kellogg, 2004.) Kellogg, 2004, gives a fascinating discussion of the genesis and ongoing evolution of Frazier Mountain, including its' numerous landslides.

The Frazier Park area is the point of inflection on the Big Bend segment of the SAF...where a restraining bend...to the south...curves northward via many releasing bends (see Figure 2). The turtleback-shaped mountain has elevated late Pleistocene terraces...one of which is shown in Figure 3. A high terrace, named the Riverbank Terrace, is capped by a gravel layer which overlies argillaceous deposits. It lies just west of the San Andreas Fault, close to Frazier Mountain High School. (Davis and Duebendorfer, 1982). Ironically, the Riverbank Terrace is not named for the genesis of the feature, but rather for possessing fauna and flora of the same age seen at the town of Riverbank...near Modesto.

The Garlock Fault has a sketchier earthquake history than the San Andreas. But, left-lateral displacement on the fault adds to the geologic complexity and stress and strain in the Frazier Park area. Dawson, et.al. (2007) document yearly (6.3 mm +/- 2mm) displacement rates and per earthquake (minimum 2.75-3.75 meter rupture offset) displacement rates for the western segment of the Garlock Fault. The average time between events on the Garlock Fault approximately 1100 years. (Dawson, et. al., 2007)

Frazier Mountain was named by/for the Frazier (or Fraser) brothers, who discovered gold high on the north-east flank of the mountain in the 1860's. Gold was mined...albeit in likely modest quantities...between 1865-1894 (USBM, 1983). A fire in 1894 effectively ended mining operations there (USBM, 1983, Kane, 2008).

The north side of Frazier Mountain borders the San Andreas Fault. There, Precambrian Pelona Schist (which includes multiple metamorphics...particularly gneiss) and lower-middle Miocene Plush Ranch Formation and Caliente Formation are juxtaposed against Late Cretaceous granite/granodiorite of the eastern San Emigdio Mountains, including Tecuya Ridge (Davis and Duebendorfer, 1982). The San Andreas Fault trace here, though narrow, is effectively obscured by alluvium. Still, Frazier Mountain and Tecuya Ridge show great examples of rock- type influenced vegetation differences. The differences are easily seen driving on Frazier Mountain Park Road two miles west of Frazier Park (see Figure 4).

### THE 1857 FORT TEJON EARTHQUAKE

The last large earthquake in on the San Andreas Fault in southern California was the 1857 Fort Tejon Earthquake. The earthquake was named for a small, strategic fort along the "grapevine" section of I-5, just south of the southern end of the San Joaquin Valley. Although its' epicenter and magnitude (7.9) may be debated, there is general agreement that the 1857 earthquake occurred along the Big Bend segment of the San Andreas Fault. Right lateral offset during this event has long been thought to be 31' over much of the Big Bend (Lynch, 2009).

**Continued on page 10**

For many years, the Big Bend segment was considered to be the most “at risk” segment for another San Andreas Fault earthquake. This was particularly true after the Palmdale Bulge scare of the 1970’s. Recent work has emphasized risks of the southern segment of the San Andreas Fault (between Cajon Pass and the Imperial Valley), which hasn’t experienced a major earthquake in over 300 years (Jones, et. al., 2008).

Some recent workers, using LIDAR for detailed topographic resolution and counting the number of earthquakes capable of causing strike-slip ground rupture, suggest 1857 offset was as little as 16 feet....in areas where 31 feet has been generally accepted (Zielke, et.al., 2012).

Regardless of the exact offset distance, there are several geomorphic features that represent 1857 ground rupture. Along Cuddy Valley Road, west of I-5, scarps and a few V-shaped openings in pressure ridges define the plane of 1857 offset (Figure 5), (Lynch, 2009.) At Tejon Pass, pulverized (extremely gouged) granite, juxtaposed against a sliver of sedimentary rock of uncertain age (Figure 6) defines the rupture plane. Road cuts along Interstate 5 and Old Highway 99 (now known as Peace Valley Road) at Tejon Pass show how abrupt contacts between vastly different rock types can be within the San Andreas Fault Zone (Lynch, 2009). One can easily imagine slivers of rock bodies have moved different distances at different times along different planes within the zone.

Another easily seen feature generated by the 1857 earthquake is damage to the Whitener Tree (Figures 7,8.) The Whitener Tree is within Pine Mountain Club, about 20 miles west of Tejon Pass and a stones’ throw from Mil Potrero Highway (Davis, et.al., 1986). The tree, a large girth Ponderosa pine approximately 500 years old, is one of several large trees that shook violently and snapped, or “topped” during the 1857 quake (Meisling and Sieh, 1980.) The timing of damage is known because of the Whitener Tree’s strategic position on an old Spanish road at the head of San Emigdio Canyon. Eight topped trees, from Pine Mountain Club southeast to Wrightwood were researched by Meisling and Sieh, 1980. Several of the trees continue to live today. Coring these trees and the use of dendrochronology has assisted seismologists in understanding earthquake effects and frequency.

A 1916 earthquake, the magnitude 5.6 (*M* 5.6) Tejon Pass/Lockwood Valley quake, possibly showed evidence of surface rupture near the intersection of the Lockwood Valley (also known as Big Pine) Fault and the San Andreas Fault. The exact epicenter and magnitude are uncertain, but in 1916, cracks appeared on the ground in Lockwood Valley and roads that crossed the San Andreas Fault (Meltzner and Rockwell, 2004.)

### **GORMAN POST ROAD**

Gorman Post Road, five miles long, traverses in and out of traces of the San Andreas Fault. It connects uninhabited Gorman... barely more than an exit off I-5 just south of Tejon Pass... with HWY 138, an east-west road that leads to Lancaster. Gorman Post Road is aligned with several sag ponds within the fault zone. Year-round, it is common to see wet spots on the road within Gorman.

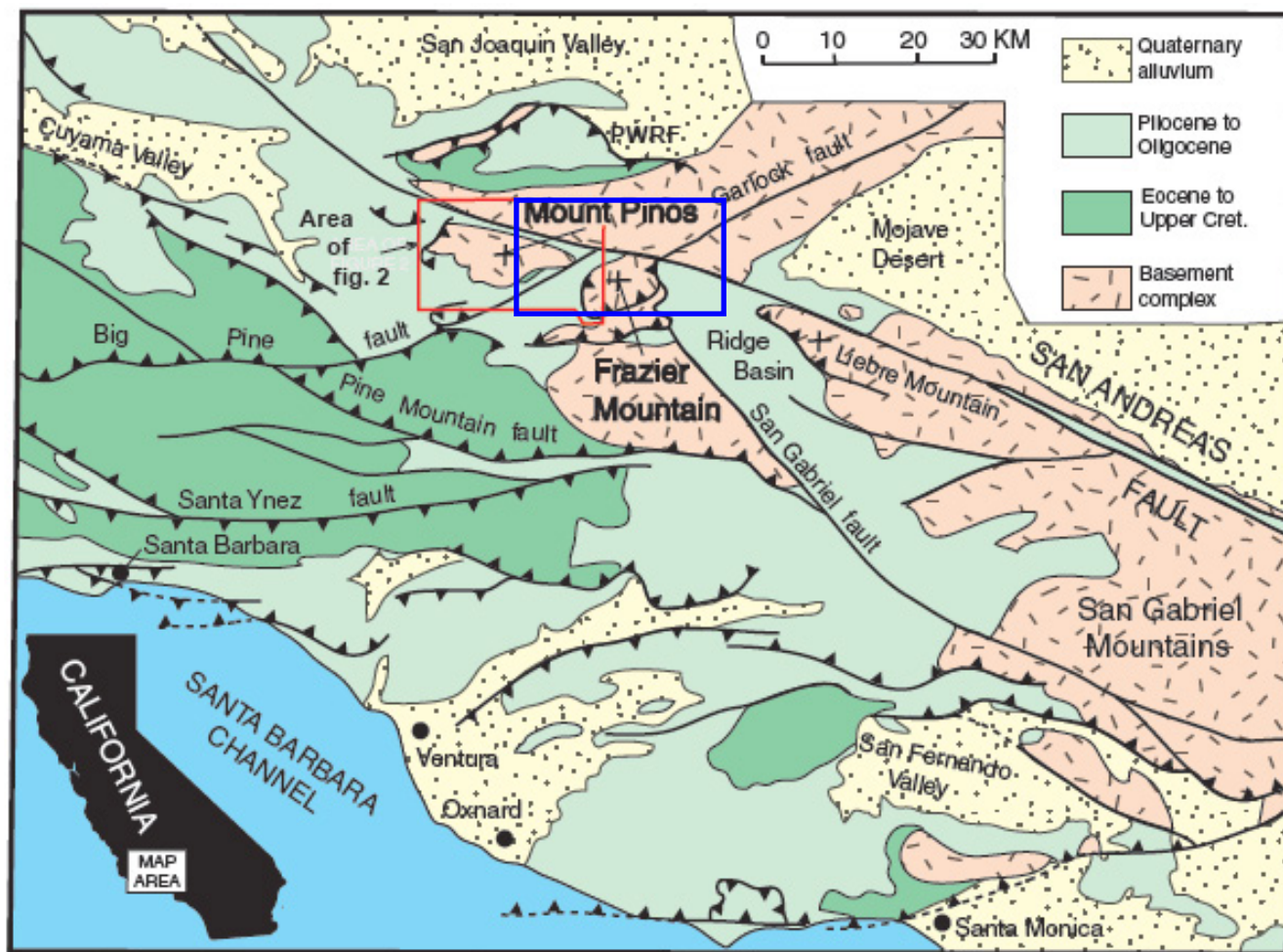
The sag ponds are distinctive, because their dark green tree/brush vegetation contrasts with straw-or light green-colored grasses growing on upslope (to the east) granitic rock (Figure 9). Springs can be seen in the granitic slopes. The sag ponds are in different stages of life. Some are youthful, with rich, healthy trees and hydrophilic vegetation. Other... former... sag ponds have become dry alkaline flats due to evaporation, sediment infill, or water lost in some other way. They are marked by mature dead trees.

Gorman Post Road is also one of the few places to see exposures of the Neenach volcanics. Matching these rhyolitic volcanics with similar rocks of Pinnacles National Park, 190 miles northwest, is traditional evidence for inferring long-distance right-lateral strike-slip on the San Andreas Fault. Gorman Post Road terminates where the California Aqueduct feeds water into Quail Lake, an enlarged former sag pond.

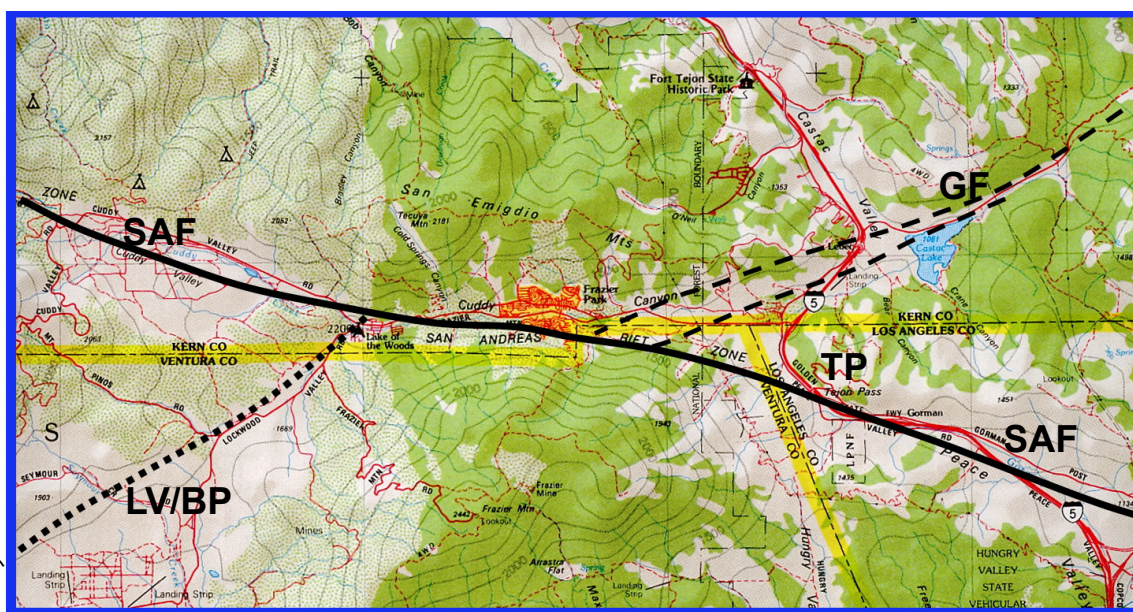
Gorman Post Road is one place where a few open radiometric dating trenches can still be seen. These trenches were dug across strands of the San Andreas Fault to understand soil profiles.

We are fortunate to live in a land of abundant geologic variety...as long as the earth doesn’t shake.

***Pictures continue on pages 11-13***



**FIGURE 1** Generalized geologic map: Western Transverse Ranges. (From Kellogg, 2004)



**FIGURE 2** The blue framed area in Figure 1. Map of the Frazier Park area showing location of Tejon Pass (TP), and the San Andreas (SAF), Lockwood Valley/Big Pine (LV/BP), and Garlock (GF) Faults.





**FIGURE 3** View from a rest stop on I-5 at Lebec. The Late Pleistocene “Riverbank” terrace and scarp are prominently shown, left-center, on the flank of Frazier Mountain.



**FIGURE 4** View just west of Frazier Park, looking east on the trace of the San Andreas Fault. Vegetation contrasts can be seen on between Pelona Schist/Plush Ranch Fm. soils of the Pacific Plate on the right (south) and less vegetated soils of Cretaceous San Emigdio Granodiorite of the North American Plate on the left (north.)





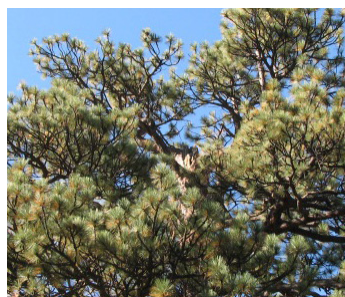
**FIGURE 5** View of V-shaped scarp marks the trace of the 1857 Fort Tejon earthquake at the west end of Cuddy Valley.



**FIGURE 6** Looking west over Interstate 5 at Tejon Pass, a surface rupture of the 1857 Fort Tejon Earthquake is manifested in the contact between highly gouged gray granodiorite, (left, above overpass) and gouged tan-brown clastic sediments (right, above overpass).



**FIGURE 7** The Whitener Tree, next to Mil Potero Highway



**FIGURE 8** Topped section of the Whitener Tree; 1857 break can be seen in center of photo



**FIGURE 9** 1998 View to northwest along San Andreas Fault trace next to Gorman Post Road shows vegetation along line of sag ponds. Trench across fault, foreground, is now closed.



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Age dating and environmental determinations of the LA Basin, the Ventura Basin, the San Joaquin and Sacramento sections, as well as the Alaskan Cook Inlet and Post Paleozoic North Slopes section

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## NEXT Newsletter Deadline

**(January/February Issue): Jan. 1st, 2014**

The 33rd Annual AAPG Leadership Days Conference was held in Tulsa, OK, July 28-30, 2013. About 130 AAPG, AAPG Region, Section, Member Society, and Young Professional leaders from around the globe attended, not counting dozens of AAPG Headquarters staff personnel. Leadership Days is a great event for learning about day-to-day activities within AAPG, networking with like-minded professionals, discussing and influencing issues within the Organization, meeting candidates for upcoming elections, and renewing friendships.

The theme of the conference was “Strategic Thinking for AAPG’s Second Century.” The event commenced with a tour of AAPG Headquarters on Friday. Each AAPG department had a staff member enlighten attendees about Headquarters. The tour was followed by a welcome reception and an exceptional dinner at the Post Oak Lodge Friday evening. Standing Committees met to conduct business Friday and Saturday mornings.

The 2014-2016 officer candidates gave talks at a Saturday luncheon....

- PRESIDENT -ELECT (Alfredo Guzman and John Hogg)
- VICE PRESIDENT-SECTIONS (Steve Brachman and Hannes Leetaru)
- TREASURER (Vlastimila Dvorakova and James Tucker)

Following the luncheon, four Focus Group sessions met Saturday afternoon. Focus Group themes centered on concerns common to AAPG members. Focus Group summary reports were presented by their each group’s facilitators on Sunday morning. President Lee Krystinik closed the morning session with propitious words on Looking Forward to the Second Century of AAPG. An excellent and generous Social Reception was held Saturday evening, followed by dinner and the annual Casino Night entertainment.

Jon Schwalbach, PSAAPG Advisory Council Representative, submitted Pacific Section’s nominees for the prestigious AAPG Honorary Member and Distinguished Educator awards at Friday’s Advisory Council meeting. The AAPG Executive Committee met Sunday to approve the Council’s final nominees for all AAPG awards. The awards will be announced in early 2014, and be presented to the winners at the Annual Convention and Exhibition in Houston, April 6-9, 2014.

After meeting in Denver (2015) and Calgary (2016), the Annual Convention and Exhibition will return to Houston for AAPG’s 100th Anniversary in 2017.

Pacific Section AAPG leaders attending Leadership Days were:

- Jon Allen, AAPG Young Professionals
- Plamen Ganev, Pacific Section Membership Chair
- Bob Lindblom, AAPG House of Delegates and NCGS Rep.
- Jon Schwalbach, PSAAPG Advisory Council Rep. to AAPG
- Dan Schwartz, Pacific Section President
- Elisabeth Steel, Student, UC Santa Barbara
- Vaughn Thompson, SJGS President
- Joe Wheatley, Student, San Diego State
- John Williams, Pacific Section President-elect

**SEE PAGE 16 FOR PICTURE OF ATTENDEES**

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PSAAPG attendees at AAPG Leadership Days: L-R: Jon Allen, Elisabeth Steel, Plamen Ganev, Jon Schwalbach, Bob Lindblom, Dan Schwartz, Vaughn Thompson, John Williams, and Joe Wheatley.

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**Pat Moran and Peter Morris (CGS President) of Team Venoco celebrate the day.**



**Margie Woolley, Bob Nuccio and Hank Pramov celebrate a long putt for birdie !! and a Great Day !**



**Team Petrolog – John Williams and Family: Addison, Scarlett, and Heath enjoy the fresh air.**



**Scott Simmons and Mike Barminski ready the putting contest.**



**Putting in the wind: Steve Richardson, Karl Bowers, Brian Mossman, and Harry Barnum.**



**Aera Energy Foursome: Mike Barminski, Steve Grayson, Jon Schwalbach, and Will Berelson.**

On October 4th, a large contingent of CGS members, friends, and supporters came out to Elkins Ranch Golf Course in Fillmore for the 15th consecutive Woolley Golf Tournament and BBQ. It was a successful day with golf, a bit of wind, comradery, and great food to raise funds for geoscience scholarships in the name of John J. Woolley, an avid golfer, exploration geologist, family man, and friend to all. Special thanks to family and friends of John who participated in force to support the event and a great cause. CGS greatly appreciates the contributions of all the golfers, sponsors, and volunteers who donated their time and energy to make this such a successful event this year and for the last decade and a half. For more on the event see: [www.coastgeologicalsociety.org/woolleygolftournament.html](http://www.coastgeologicalsociety.org/woolleygolftournament.html).

**WOOLLEY PHOTOS BY ADRIANO DEFREITAS**





**Harold Sugden and Dolores Hoffman**



**Terry Beaschler and Dave Miner, AERA**



**Jim and Barbara Kurfess**



**Dale Julander-Chevron, Steve Hall- Schlumberger, John Gatlin- Schlumberger, and Ariel Auffant- Chevron**



**Kathy Smith – PacSeis, David Baker – Weatherford, Sophia Hak – Resolve Geosciences, Nicola Coronis – Resolve Geosciences**

The 2013 San Joaquin Geological Society Golf and Barbeque events were held September 13 in Bakersfield. The golf event at Sundale Country Club had the largest number of participants ever: 26 teams (+/-104 golfers.) Kathy Smith of Pacseis organized the highly successful golf event for the sixth straight year. Stefano Mazzoni and Anne Draucker organized the BBQ, which was held at the Kern County Museum. Drew Hutto and his crew worked hard to provide attendees with great BBQ food. Cal State Bakersfield geology students volunteered at the BBQ.

The event is the large annual fundraising effort of the Society. This year, \$11,000 was taken in to help fund society activities and scholarships. Because of these events, SJGS has been able to grant more scholarships and support community education efforts in the last few years.

SJGS President Laura Bazeley wishes to convey her thanks to sponsors, volunteers, and participants for their efforts in making the day successful!

***SJGS PHOTOS BY KATHY SMITH AND LAURA BAZELEY***

The sixth annual AAPG-SEG West Coast Student Expo took place at California State University, Northridge October 3<sup>rd</sup>-5<sup>th</sup> 2013. Once again, the event was extremely successful. The Expo, organized and run by CSU-Northridge personnel, continues to grow in significance. Six companies and one federal agency sponsored the event: Aera Energy, BP, Chevron, and Occidental Petroleum at the Platinum Level; ConocoPhillips at the Gold Level; DCOR at the Silver Level; with the Bureau of Safety and Environmental Enforcement as a participant. The Pacific Section of the American Association of Petroleum Geologists (AAPG) and the Society of Exploration Geophysicists (SEG) were sponsoring organizations.

Registration of the 151 participating students included 46 Bachelor's, 87 Master's and 18 Doctoral students. Attendance was similar to the 2012 event. The students came from 35 schools in 9 states and 3 countries. The schools represented included: Cal Poly Pomona; Cal Lutheran; Cal Tech; CSU Bakersfield; CSU East Bay; CSU Fresno; CSU Fullerton; CSU Long Beach; CSU Northridge; CSU San Bernardino; Loma Linda College; Occidental College; San Diego State University; San Francisco State University; UC Berkeley; UCLA; UC Riverside; UC Davis; UC Santa Barbara; UC San Diego; CISESE; University of Nebraska; University of Nevada, Las Vegas; University of Southern California; UT San Antonio; UT Austin; Stephen F. Austin University; Syracuse University; Queensland University, Australia; Sorbonne Paris, France; Union College; University of Alaska, Fairbanks; University of Minnesota; University of Puerto Rico; and University of Rhode Island.

#### ACTIVITIES:

On Thursday October 3<sup>rd</sup>, two field trips were held:

- 1) Occidental Petroleum sponsored a field trip to their Wilmington Field THUMS facility in Long Beach, CA. That trip was led by Rebecca Greenberg and Aaron Hebler.
- 2) Cameron Campbell and others from Chevron led another trip to Midway Sunset Field in the San Joaquin Valley.

Approximately 60 students and company representatives participated on these trips. Later that evening, both Aera Energy and Occidental Petroleum hosted a Poster Session and wine and cheese mixer. Thirty-eight students registered for the Poster Session. The posters were judged by a crew of industry representatives, led by former PSAAPG President Cynthia Huggins of Aera and John Williams of Petrolog, President-elect of Pacific Section. Awards were donated by the AAPG and SEG. The poster award winners are listed below:

#### GEOPHYSICS CATEGORY (all received book awards from SEG):

First Place (tie): Xiangyu Li, PhD program, USC

First Place (tie): Malcolm Thomas, MS program, CSU San Bernardino

#### GEOLOGY CATEGORY (all received book awards from AAPG)

First Place (tie): Daniel Livsey, PhD program, UC Santa Barbara

First Place (tie): Ben Moss, MS program, CSU Northridge

Second Place (tie): Stephanie Broome, MS, Queensland University, Australia

Second Place (tie): Lisa Wolff, MS program, CSUN Northridge

Second Place (tie): Caitlin Tems, PhD program, USC

*Continued on page 20*



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Friday October 4th, the companies set up their booths in the Grand Salon. That morning, ~40 students attended an Occidental-sponsored short course entitled **“Possible Pitfalls for Interpreting the Size/Frequency Distribution of Earthquakes (b values) as a Stress Meter,”** presented by Dr. Sherilyn Williams-Stroud. Following the short course, students and company representatives attended a luncheon and round-table discussion hosted by Chevron and BP where the poster award winners were announced.

Friday afternoon and Saturday, beginning with the round-table discussions, the event focused on interviews, careers and hiring. Friday afternoon, company representatives addressed the students to highlight their companies hiring needs. Luncheon seating around the large round tables facilitated company representative interaction with students. At set intervals, company recruiters switched tables to maximize discussion with students. After the round table discussions, students and representatives continued to communicate at the Company Booth Exposition from 2:30 to 5:30 pm.

Saturday October 5th, the last day of the Expo, was dedicated to student interviews with the companies from 7:00 am-6:00 pm. The companies made arrangements for interview times with students prior to Saturday. All interviews occurred in rooms at the CSUN University Student Union.

#### **2014 AAPG-SEG WEST COAST STUDENT EXPO**

Plan to attend the 2014 AAPG-SEG West Coast Student Expo, which is scheduled for October 2nd-4<sup>th</sup>. It will again be held at the University Student Union at California State University, Northridge.

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#### **Where there's a will...**

The September 2013 edition of the *AAPG Explorer* documented the efforts of Chris Bowie, a Fresno State graduate, and his friends to attend the 2013 PSAAPG Convention in Monterey. Affording Monterey... on a grad student budget...was not an easy thing to do. But Chris (now employed by Devon Energy) and his friends (below) made it happen. Read the entire story at <http://www.aapg.org/explorer/2013/09sep/students0913.cfm>





## 2012-2014 PACIFIC SECTION DIRECTORY

The Pacific Section will issue a "hard copy" Membership Directory before the end of 2013. If you were a paid member of the PSAAPG, PSSEPM, and PCSSEG at the beginning of the 2013, you should receive a copy of the Pacific Section Directory in December, 2013.

Putting this directory together has been a massive multi-year effort, spearheaded by Publications Chair Larry Knauer and former Membership Chair Evan Bargnesi.

The Directory has introductory remarks regarding PSAAPG history, and lists of officers and Award winners as well as a tabbed interval of the members' contact info. But, even this directory is a living document. **Please take the time to review this material and let a PSAAPG officer or member Society officer know if anything needs to be corrected. Your participation will greatly improve our data lists.**

After reviewing the award lists please let us know (or the officers in your local society) if you know someone that you would like to nominate for future awards. Also, advertisers should let us know if the ads are still current. Contact [Larryknauer@chevron.com](mailto:Larryknauer@chevron.com).

**-Larry Knauer**

## NOMINATE A CANDIDATE FOR TEACHER OF THE YEAR

"Just a reminder, PSAAPG is looking for nominees for their 2014 Teacher of the Year (TOTY) award." The winner will be acknowledged at the Bakersfield PSAAPG Convention Awards Luncheon in April 2014 and their name will also be submitted to National AAPG for award consideration. Both PSAAPG and National AAPG awards are accompanied with a monetary stipend.

For more information, contact TOTY Committee Chair Bob Ballog <[bob@eaglexpco.com](mailto:bob@eaglexpco.com)>. Also, look at TOTY documentation on the PSAAPG website. Bob would like to have nominations in by March 1, 2014.

**-Bob Ballog**

## 2015 PSAAPG CONVENTION

The Pacific Section AAPG 2015 Convention will be in Ventura, California. Anticipated date will be April or May 2015. More details will be forthcoming. Convention Chair Joan Barminski welcomes inquiries and involvement; her contact address is [joan.barminski@boem.gov](mailto:joan.barminski@boem.gov).

**-Joan Barminski**

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The 3rd annual Pacific Section AAPG Student Chapter Leadership Summit was held at AERA in Bakersfield on November 1st and 2nd, 2013. The event was organized by PSAAPG Liaison to Student Chapters Becca Lanners. The Summit included presentations and discussions on:

- Introduction to Petroleum Geology (by Jon Allen- Chevron)
- Job Recruiter's Perspective (by Rebecca Greenberg-DeMarais- Occidental)
- AAPG Student Chapter Bylaws (by Becca Lanners- Occidental)
- The Imperial Barrel Award Program (by Mark Maroun- AERA)
- New Student Chapter Workshop (by Becca Lanners- Occidental)
- How to Keep Student Chapters Alive (by Andrew Ranson- Chevron)

Emily Fisher of AERA also spoke. She organized the event in 2011 and 2012, and is now AAPG Domestic Vice-Chair to Student Affairs.

This year's Summit was the most successful held to date, with 24 students from 15 colleges and universities attending. Fourteen of the academic institutions represented are in California; students from Alaska –Fairbanks also attended.

The event wasn't all work and no play. There was a well-attended Friday night mixer, and a Saturday night dinner/party at the home of Brian and Kay Pitts. Home hosting by PSAAPG families enabled further idea exchange.



**Students discuss ways to maintain attendance, fundraise, build awareness of petroleum geology, and succession plans at the PSAAPG Student Leadership Summit.**



**PSAAPG Liaison to Student Chapters Becca Lanners and AAPG Domestic Vice-Chair to Student Chapters Emily Fisher enjoy the Friday night mixer.**



**Students from 15 colleges and universities participated in the 2013 PSAAPG Student Leadership Summit, which was held in Bakersfield November 1-2, 2013. (SDSU attendees not present for photo)**

*Photos by Becca Lanners and Tim Elam*



### **Alaska Geological Society**

- November 21 Meeting: “Seabed mapping and the search for oil and gas seeps offshore;” SPEAKER: John Decker, NICO.
- December 12 Meeting: “Devil’s Paw Prospect, Chukchi Sea Alaska;” SPEAKER: Greg Wilson, ConocoPhillips Alaska, (Joint meeting with the Geophysical Society of Alaska).

### **Coast Geological Society**

- November 19 Meeting: “Hydraulic Fracturing and Earthquakes: Ethically, How Do We Move Forward and Do the Right Thing?” SPEAKER: Don Clarke, Consulting Geologist.
- December 17 Meeting: “Lunar Geology;” SPEAKER: Bonnie Walters, California Oil Museum, Santa Paula.

### **L.A. Basin Geological Society**

- No November and December programs due to holidays
- January 23 Meeting: “Oil History of the Los Angeles Basin from the Perspective of a Landman;” SPEAKER: Edward Renwick, Hanna and Morton, LLP. NOTE: Joint meeting with the Los Angeles Association of Petroleum Landmen.

### **Northern California Geological Society**

- November 20 Meeting (EARLY DATE!): “Effects of the Paso Robles Geothermal System on Water Quality and Availability in the Paso Robles Groundwater Basin, California;” SPEAKERS: James J. Rytuba, Victoria E. Langenheim, and Daniel N. Goldstein, USGS, Menlo Park, CA.
- December: NO MEETING

### **Northwest Energy Association**

- IN THE PROCESS OF REORGANIZATION; please contact the officers listed on page 27.

### **Sacramento Petroleum Association**

- November 13 Meeting: “Practical Well Stimulation;” SPEAKER: Neil Delfino, Principal Scientist, Delfino Engineering. EARLY DATE! The location and time are as usual: Club Pheasant in West Sacramento at 12:00 PM.

### **San Joaquin Geological Society**

- November 12 Meeting: “Compaction, Cementation, and Dissolution: 30 Years of San Joaquin Basin Sandstone Petrology;” SPEAKER: Dr. Robert Horton, Cal State University- Bakersfield, Bakersfield, Ca.
- December 10 Meeting: “ Scale Mineralogy and In-situ Silica Diagenesis in the Diatomite Steam Drive and Cyclic Steam Wells, Belridge Field, Kern County, California – Interpretation of Scale Composition, Texture, and Diagenesis;” SPEAKER: Bonnie Bloeser, AERA Energy, Bakersfield, Ca.

## Alaska Geological Society

www.alaskageology.org

P. O. Box 101288  
Anchorage, AK 99510

Contact: Eric Cannon  
eric\_cannon@golder.com



Luncheon meetings are held monthly September through May, usually on the third Thursday of the month, at the BP Energy Center (1014 Energy Court) from 11:30 a.m. to 1:00 p.m. The hot lunch cost is \$20 for members with reservations; \$22 for non-members with reservations; and \$25 without reservations. The box lunch cost is \$13 for members with reservations, \$15 for non-members with reservations, and \$18 without reservations. For reservations, call the AGS reservation voice mail at 907-258-9059 or contact David Hite at hiteconsult@acsalaska.net by noon on Monday before the meeting.

President: Matt Frankforter  
President-Elect: Keith Torrance  
Vice-President: Monty Mabry  
Secretary: Eric Cannon  
Treasurer: Alan Hunter  
Past-President: Ken Helmold

mfrankforter@hilcorp.com  
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eric\_cannon@golder.com  
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## Coast Geological Society

www.coastgeologicalsociety.org

P. O. Box 3055  
Ventura, CA 93006

Contact: Peter Morris  
805.745.2149



Dinner meetings are held monthly September through May, on the third Tuesday of the month, at Poinsettia Pavilion, 3451 Foothill Road in Ventura. Social hour starts at 6:00 p.m., dinner is served at 7:00 p.m., and the talk starts at 8:00 p.m. The cost of dinner with reservations is \$20 (members), \$25 (non-members), or \$10 (students and K-12 teachers); the talk is free. For reservations, please email Bonnie Walters (secretary@coastgeologicalsociety.org), and should be made by 4:00 p.m. on the Friday before the meeting.

President: Peter Morris 805-745-2149  
Past President: John Harris 805-407-7644  
Vice President: Bob Blackmur 805-535-2025  
Secretary: Bonnie Walters 805-933-0076 Ext 292  
Treasurer: Christine White 805-535-2074  
Membership: Nick Kunstek  
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## Los Angeles Basin Geological Society

www.labgs.org

515 So. Flower Street, Ste 4800  
Los Angeles, CA 90071

Contact: Bill Long  
213.225.5900 x 205



Luncheon meetings are held monthly September and October; and January through June, usually on the fourth Thursday of the month, in the Monarch Room at The Grand at Willow Street Conference Centre (4101 E. Willow Street) in Long Beach. Lunch is served at 11:30 a.m., and the talk starts at 12:15 p.m. The cost is \$20 (with reservations), \$25 (without reservations), or \$5 for students. Reservations can be made online at www.labgs.org or by contacting Marieke Gaudet at 562.624.3364 or marieke\_gaudet@oxy.com. Reservations must be made prior to Tuesday before the meeting.

President: Bill Long 213.225.5900 X 205  
Vice President: Greg Hummel 310.327.1100 X 5  
Treasurer: Bert Vogler 562.432.1696  
Secretary: Graham Wilson 562.326.5278  
Scholarships: Jean Kulla 949.500.3095

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hvogler@kleinfelder.com  
Gwilson@SHPI.net  
k2mobile@MSN.com

## Northern California Geological Society

www.ncgeolsoc.org

9 Bramblewood Court  
Danville, CA 94506-1130

Contact: Barb Matz  
Barbara.Matz@shawgrp.com



Evening meetings are held monthly September through May, usually on the last Wednesday of the month, at the Masonic Center (9 Altarinda Road) in Orinda. Social hour starts at 6:30 p.m., and the talk starts at 7:00 p.m. (no dinner). For reservations, contact Dan Day at danday94@pacbell.net before the meeting. Cost is \$5 per regular member; \$1 per student member; and \$1 per K-12 teachers.

*Continued on next page*

**NCGS Officers:**

President:	Phil Reed	philecreed@yahoo.com
Program Chair:	John Karachewski	cageo@sbcglobal.net
Secretary	Dan Day	danday94@pacbell.net
Treasurer	Phil Reed	philecreed@yahoo.com
Membership Chair	Rob Nelson	rlngeology@sbcglobal.net
Newsletter Editor	Mark Detterman	mdetter1@gmail.com
Field Trip Coordinator	Tridib Guha	tridibguha@yahoo.com
Past President	Tom Barry	tomasbarry@aol.com
Scholarships	Phil Garbutt	plgarbutt@comcast.net
K-12 programs	Mark Petrofsky	mpetrof@hotmail.com

**Northwest Energy Association**

www.nwenergyassociation.org

P. O. Box 6679

Portland, OR 97228-6679

Contact:

Jim Jackson or John Armentrout



Breakfast meetings are held monthly September through May, usually on the second Friday of the month, at the Multnomah Athletic Club (1849 SW. Salmon Street) in Portland. Meeting time is at 7:30 - 9:00 am. The cost is \$18. For information or reservations, contact Jim Jackson.

Acting President	John Armentrout	jarmenrock@gmail.com
Program Chair	Jim Jackson	503.771.3887 jackson.js@comcast.net

**Sacramento Petroleum Association**

P. O. Box 571

Sacramento, CA 95812-0571

Contact: David Hartley

530.304.4277



Luncheon meetings held monthly January through November, on the third Wednesday of the month. Location: Club Pheasant Restaurant in West Sacramento. The meetings starts at noon. The cost is \$16 - \$20. For information or reservations, contact Pam Ceccarelli.

President:	Jerry Reedy	916.486.2643	JWR5532@aol.com
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**San Joaquin Geological Society**

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We have dinner meetings on the second Tuesday of the month at the American Legion Hall at 2020 "H Street" in Bakersfield. There is an icebreaker at 6:00 pm, dinner at 7:00 pm, and a talk at 8:00 pm. Dinner is \$25.00 for members with reservations and \$30.00 for nonmembers and members without reservations, and the talks are free.

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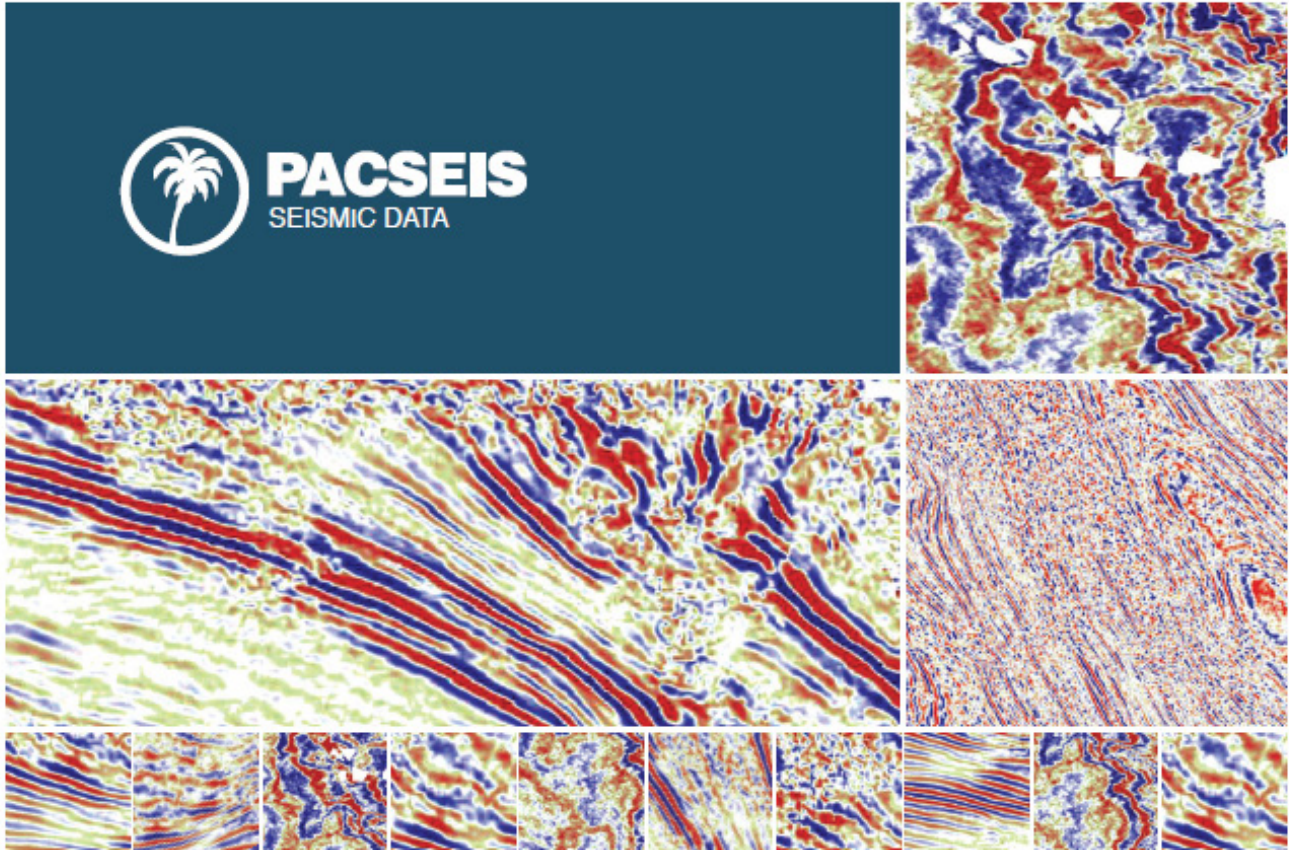
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