

Pacific Sedimentologist

FALL FIELD TRIP ISSUE

Newsletter of the Pacific Section, SEPM
(Society for Sedimentary Geology)
<http://www.sci.sdsu.edu/pacsepm>

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QFL results from point counting sandstone samples from the lower member of the Bear Canyon conglomerate. Map shows locations of samples and form lines based on bedding attitudes (from Girty, G. H., and students, 2006, *Geology of Picacho State Recreation area, SE California: Implications for the timing of formation of the Chocolate Mountains Anticlinorium*, in Girty, G. H., and Cooper, J. D., eds., *Using Stratigraphy, Sedimentology, and Geochemistry to Unravel the Geologic History of the Southwestern Cordillera*: Pacific Section SEPM Book 101, p. 255-274).

volume 78, issue 1

August, 2006

PS-SEPM Fall Field Trip scheduled for Saturday, October 7, 2006

A Day on the Scenic Palos Verdes Peninsula, Southern California

Leaders: Dick Brown, Rick Behl, Steve Jacobs, John Schwiebert, Ed Steiner, John Ferguson

Commemorating the 60th anniversary of the publication of the classic U. S. Geological Survey Professional Paper 207 by Woodring, Bramlette, and Kew, *Geology and Paleontology of Palos Verdes Hills, California*.

Trip stops will feature sedimentology, stratigraphy, paleontology, landslides, marine terraces, structure, tectonics, and the only exposure of Jurassic-Cretaceous Catalina Schist on the California mainland.

REGISTRATION DEADLINE is September 7, 2006

Field trip information on next page.

Registration form on last page of this newsletter.

Both are also posted on the Society website: <http://www.sci.sdsu.edu/pacsepm>.

FIELD TRIP INFORMATION

When & Where to Meet: Pt. Fermin Park at end of Gaffey Street at intersection with Paseo del Mar in San Pedro, CA. See marked locations on aerial photo map posted on the PS-SEPM website. Park private vehicles in main parking area of Pt. Fermin Park at end of Gaffey St. Additional parking areas are shown on photo map. Car-pooling to site is encouraged.

Getting There: From the north – drive south on 405 to 110; take 110 south to its terminus at Gaffey St.; from the south – drive north on 405 to 110; take 110 south to its terminus at Gaffey St; go south on Gaffey Street about 3 miles to end at Paseo del Mar and entrance to Pt. Fermin Park. Park and walk to area just east of Lighthouse.

Logistics. Because a caravan of private vehicles cannot be accommodated at the field trip stops, participants will be transported by charter bus. Please park private vehicles at or near Pt. Fermin Park (see photo map). Because parking may be limited on Saturday, car-pooling to Pt. Fermin Park is highly recommended. One or two buses (depending on the number of people enrolled) will depart from and return to Pt. Fermin Park in San Pedro. Bus(es) will be equipped with bathroom and intercom system. Sodas and water will be provided. Alcoholic beverages will not be allowed.

LUNCHES WILL NOT BE PROVIDED. PLEASE BRING YOUR OWN LUNCH and SNACKS.

Activities and Itinerary. Check-in from 7:00 – 7:45 a.m. Coffee and bagels & donuts will be provided. The trip will begin promptly at 8:00 a.m. at Pt. Fermin Park with views and discussions of Pt. Fermin sandstone unit of the Monterey Formation and Pt. Fermin Landslide (Stop 1). Use restrooms in park before boarding bus. 9:00 a.m. bus-boarding and departure to examine Pleistocene stratigraphic units (Stops 2, 3), the Jurassic-Cretaceous Catalina Schist (Stop 4), and the Miocene Monterey Fm (Stop 5). Public restrooms are available at stop 5. Lunch stop at Del Cerro Park (Stop 6). From Del Cerro Park, there is a splendid view of the Portuguese Bend Landslide. After lunch, the trip will visit the Silver Spur graben and landslide (Stop 7), the Monterey Fm and basalt intrusions at Livingstone Quarry (Stop 8), and recumbent folds in the Monterey Fm at Whites Point (Stop 9). The bus will return to Pt. Fermin Park at 5:00 p.m.

Seaward dipping strata of the Altamira Shale Member of the Monterey Formation (Middle-Upper Miocene) forming the Pt. Fermin headland. Photo by Steve Jacobs



A message from new PS-SEPM President, David W. Andersen

I am pleased to report that the Section's publications reached a milestone last year. The publication of four guidebook volumes for the 2005 Section convention in San Jose, California and one guidebook volume for the fall field trip brought the total number of books to 100. Our latest is PS-SEPM Book 101, which demonstrates the uses of stratigraphy, sedimentology, and geochemistry to unravel the geologic history of the southwestern Cordillera. This volume, in honor of the many contributions of Pat Abbott and well illustrated with many color figures, is available now. Please see the more detailed description of the book on the PS-SEPM website and on pp. 7-9 of this newsletter.

Last year's annual fall field trip, led by Kirt Campion and Morgan Sullivan, was a great success. The wonderful geology in the San Clemente and La Jolla areas, excellent preparation by the trip leaders, thoughtful discussion by knowledgeable participants, and fine weather made an outstanding combination. Currently, Dick Brown is preparing for our next field trip in October, 2006 to explore the spectacular geology of the Palos Verdes Peninsula in Los Angeles County, California. This one-day trip will commemorate the 60-year anniversary of the publishing of U. S. Geological Survey Professional Paper 207, *Geology and Paleontology of Palos Verdes Hills* by Woodring, Bramlette, and Kew. Both of these trips also are described in more detail in articles elsewhere in this newsletter.

I would like to welcome two new section officers. Adam Woods of California State University Fullerton currently is serving as our Vice President, and Rick Behl of California State University Long

Beach is our new President Elect. Rick's term as President will start at the fall field trip next October. They bring outstanding levels of enthusiasm and talent to our society, and their participation is very much appreciated. I would also like to extend thanks to outgoing officers Morgan Sullivan, Past President, and Kenn Ehman, last year's Vice President, for making last year such a success for the society. Thanks also go to continuing officers John Cooper, Managing Editor and Treasurer, and Mario Caputo, Secretary and Newsletter Editor, for their ongoing contributions.

The Section will join with Pacific Section AAPG to host the national AAPG/SEPM Convention in Long Beach in April, 2007. Rick Behl, Morgan Sullivan, and Kenn Ehman are all members of the Technical Program Committee, and they are working to ensure that the poster and oral sessions and the short courses and field trips have plenty to offer our members. If you have suggestions or questions about the 2007 meeting, please feel free to contact Rick, Morgan, Kenn, or me.

The Section is in very good shape scientifically and financially, and this has been a relatively easy year to be President. It is quite a disappointment that we were unable to participate with the Pacific Section AAPG in co-hosting the Anchorage convention this spring, but it is a loss I am confident the Section can survive. I hope to see you at the fall field trip on the Palos Verdes Peninsula and again at the annual convention in Long Beach.

Dave Andersen, President, Pacific Section SEPM
San Jose State University



Morning of Day 1 of Fall Field Trip, 2005. Parking pavement on upper Pleistocene marine terrace at San Clemente State Beach. Pacific Ocean in distance. Trip leaders, Kirt Campion (pointing to poster) and Morgan Sullivan (standing right of poster) set the stratigraphic stage for the weekend. Photo by John Cooper.

HIGHLIGHTS FROM THE PS-SEPM FALL FIELD TRIP, OCTOBER 29-30, 2005

Sedimentology and facies architecture of channelized slope systems: Eocene Ardath and Scripps Formations and Miocene-Pliocene Capistrano Formation, southern California

If you didn't attend this super trip, here's what you missed:

- Fantastic weather
- Great geology
- Breathtaking scenery
- Fun in the sun
- Excellent leaders and instruction
- Friendly participants

An unmatched combination – but not all is lost. For a mere \$26.00 (member price; non-member price is \$30.00), you can purchase the outstanding full-color guidebook, PS-SEPM Book 100, *Architecture and Lithofacies of the Capistrano Formation (Miocene-Pliocene), San Clemente, California* by Campion and others (2005) and do the trip on your own sometime. See the society web page for ordering information.

The weekend of October 29th and 30th produced sensational weather and tide conditions for two glorious days of examination of superb sedimentary exposures along picturesque coastal cliffs, as well as relaxing beach-walking. Fifty-six registered participants, including 28 students from six different schools (UCLA, SJSU, CSUCHICO, CSUFULLERTON, MSAC, MIT), were treated to an expertly run and most informative two days of sedimentary geology at its finest. Fieldtrip leader Kirt Campion of ExxonMobil Research in Houston, very ably assisted by outgoing PS-SEPM President Morgan Sullivan of ChevronTexaco Research in Houston, deftly guided the group through the depositional processes, hierarchy of stratigraphic architecture, and implications for fluid migration and retention that these Eocene and Miocene-Pliocene exposures so magnificently exemplify.

Day 1 began at the beach trail-head in the parking lot at San Clemente State Beach where Kirt and Morgan used posters to lay the groundwork for what we would see the next two days. The view of the Pacific from the Pleistocene terrace was intoxicating – what a lecture hall! See photo on p. 3. Once down on the beach, the morning was spent getting an overview of the stratigraphic packaging of the Upper Miocene-Lower Pliocene Capistrano Formation, so exquisitely exposed in these beautiful coastal cliffs, with examples galore of stories, channels, channel complexes, and channel complex sets, as well as a lexicon of sedimentary structures. This south-to-north trek was designed to engage the participants in discussions about grain-size trends, sedimentary structures, continuity of beds, characteristics of bed contacts, lithofacies patterns, and tracing/correlating of surfaces. From the outset, it quickly became obvious that Kirt and Morgan had led this trip together many times. The real plus here was that the field trip participants

were treated to the same guidebook and excursion that ExxonMobil uses for training company geologists. The customary procedure was for Kirt to focus on the depositional processes and stratigraphic hierarchy and Morgan would then chime in with practical applications on visualizing these strata in the subsurface from a petroleum reservoir or water aquifer perspective. The message here was that the “story” story applies to hydrogeology and environmental geology as well as petroleum geology. These outcrops have been the subject of a number of studies over four decades, with varying interpretations; a prime example of how controversy drives scientific inquiry, as well as the necessity of modeling the anatomy of deep-water systems to better understand the pathways of and barriers to migrating fluids.

The afternoon was spent examining the anatomy of various channels in this system in more detail, beginning with the southern edge of the channel complex container where a sandy facies abruptly impinges on a slope-valley margin that had developed on siltstone in the Capistrano Fm. See photo on p. 4. Perhaps the most interesting aspect of the channels was the mud-based, coarsening upward **story** packages. The northern edge of the container valley was recognized by tracing the changes in grain-size and dip of channel boundaries laterally to the south. Before we knew it, the afternoon morphed into twilight, and later, evening revelry was enjoyed by the campers and others in the San Clemente Beach Park campground, where Morgan had a fun reunion with some of his former Cal-State Chico students, joined by groups from San Jose State, Mt. SAC, and MIT.

Day 2 commenced at Torrey Pines State Beach, with a pleasant morning walk south to Bathtub Rock and just beyond, tracing the interesting contact between the Torrey Sandstone (a formation) and the “Ardath Sandstone” (part of another formation), a major sequence boundary in the succession. This examination of lower and middle Eocene outcrops employed many of the same concepts and elements of stratigraphic hierarchy as those of the Capistrano Fm from yesterday; continuing with the channelized slope system theme from the previous day but expanded to the scale of formations in the La Jolla Group. The emphasis was on the recognition of sequence boundaries in a sequence-stratigraphic framework. The Ardath Sandstone, a deep-water sandstone containing graded beds, rip-up clasts, and a mixture of deep- and shallow-water fossils, overlies with irregular contact the shallow-water nearshore facies of the Torrey Sandstone. This, at first glance, was subtle. However, upon closer scrutiny, an obvious

contact provided an instructive example of the shingling of superficially similar-looking facies above and below a sequence boundary. It also served to illustrate a fundamental difference between lithostratigraphy (which employs units that are useful in mapping; for example, the “Ardath Sandstone” was previously mapped as part of the Torrey Sandstone) and sequence stratigraphy (which focuses on the genetic relationships between facies in the context of changing base levels and accommodation) – an important distinction. Just south of Bathtub Rock, this contact cuts dramatically downward into the Delmar Formation, and the Ardath sequence above revealed an upward progression from basal canyon fill of the “Ardath Sandstone” with its two channel complexes succeeded by Ardath Shale with its own set of channel complexes, channels, and stories. From here, we backtracked to the vehicles and drove south to Scripps Beach to see the overlying sequence in the Middle to Upper Eocene Scripps Formation.

After a quick but scenic and enjoyable picnic lunch on the Scripps Institute campus, what remained of the original group (now about 25) walked north from the pier along the broad beach exposed at low tide. Along the walk, there were good views of the basal conglomerate of the Scripps Formation with its content of Ardath Shale clasts mixed with bedrock stones dominated by the

distinct reddish Poway metavolcanic clasts. Kirt and Morgan supplied the group with enlarged photo panoramas of the cliffs, which helped locate the base of the Scripps sequence boundary as well as channel boundaries within the Scripps Formation, yet another channelized slope system. This brought us to the end of another marvelous day.

A special thanks is extended to Kirt and Morgan for organizing and leading such a terrific trip. Pacific Section SEPM is also deeply grateful for the permission and opportunity to publish the ExxonMobil field training manual on the Capistrano Fm as Book 100. This is the second field guide (Book 87 on the Ridge Basin was the first) and probably not the last field guide that ExxonMobil has given PS-SEPM permission to publish. Hopefully, the guidebook for the second day of this trip on the Eocene strata in the cliffs north of La Jolla will become a Society publication as well. We also commend ExxonMobil for its generosity in paying for all the student guidebooks for the trip, and ChevronTexaco Research for paying for the campsites. The Pacific Section acknowledges the great benefit it gains from such high-level corporate sponsorship and values greatly its association with ExxonMobil and ChevronTexaco.

**John D. Cooper, Treasurer/Managing Editor,
PS-SEPM**

California State University, Fullerton



Southern edge of sandy facies of channel complex “container”, base of which (approximated partly by dotted line) had eroded into silty facies of slope-valley margin in the Miocene-Pliocene Capistrano Fm. Seaward-facing exposure along railroad cut, San Clemente, CA. Photo by John Cooper.

Pacific Section Welcomes New Officers: Adam Woods, Vice President and Rick Behl, President Elect

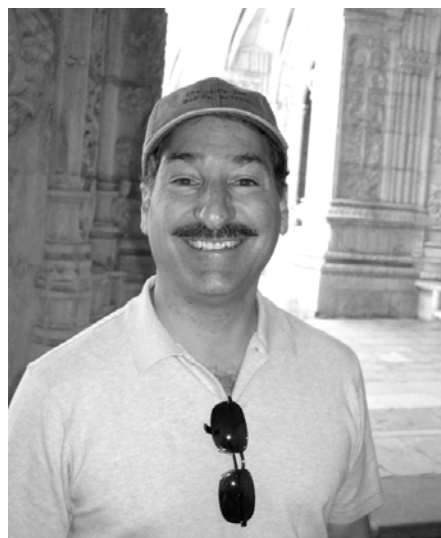
Adam Woods is an Assistant Professor of Geology at Cal State Fullerton. He received his B.S. in geology from Millersville University of Pennsylvania in 1987, his M.S. in geology from the University of Cincinnati in 1991 and his Ph.D. in geology from the University of Southern California in 1998. His teaching career began at Santa Ana College where he was a freeway flyer from 1998 until 2000, and an Assistant Professor from 2000 to 2003. Adam then moved to his present position at CSU, Fullerton. His research interests lie primarily in carbonates and paleoenvironmental reconstruction. Adam's primary research direction is the examination of sedimentary rocks deposited following the Permian-Triassic mass extinction in order to determine what role unusual environmental conditions during the period may have played in determining the timing and shape of the recovery from the extinction. Adam has examined rocks from throughout the western U.S. and Canada for this research, and has several students working on projects that are examining ocean chemistry and climate during the period. Other research interests include the origin of carbonate mud mounds and classic mud mound sedimentary structures such as zebra limestone and stromatolites, as well as microbial and inorganic carbonates, both modern and ancient.

Rick Behl has managed to work most of his professional life within view of the beach. Rick earned his Bachelors degree in Chemistry and Earth Science from UC San Diego before working in the petroleum and geothermal energy industries. He returned to school at UC Santa Cruz and completed his PhD in Earth Sciences in 1992

on the diagenesis and deformation of chert in the Miocene Monterey Formation of California and the deep Pacific Ocean. Rick then went to UC Santa Barbara as a post-doctoral fellow at the Marine Science Institute where he discovered important global connections between climatic and oceanographic change during the past 100,000 years. Since 1995, Rick has been a professor of Geological Sciences at Cal State Long Beach, where he continues his research on the Quaternary through Miocene tectonic and environmental history of the California Margin. Rick is widely published (Nature, Science, Geology, USGS Bulletin, GSA and AGU Special Publications), has participated in several expeditions of the Ocean Drilling Program and other international coring programs, and led numerous field trips for professional organizations, petroleum companies, and international conferences. Rick is a founding member of the Institute for Integrated Research in Materials, Environment, and Society at CSULB, an analytical and research consortium of geologists, archaeologists, and biologists at CSULB. Rick was a 2003-2004 AAPG Distinguished Lecturer, and was awarded the Distinguished Faculty Teaching Award at CSU Long Beach, where he teaches classes in Oceanography, Earth Systems and Global Change, Sedimentology and Stratigraphy, Sedimentary Petrology, Petroleum Geology, and Field Geology. Rick and his wife, Krisztina Mako, are residents of Laguna Beach, California, where they are involved in developing geologic interpretive material for Crystal Cove State Park and the Laguna Coast Wilderness Park.



Adam Woods pointing to the Permian-Triassic boundary in Guizhou, China.



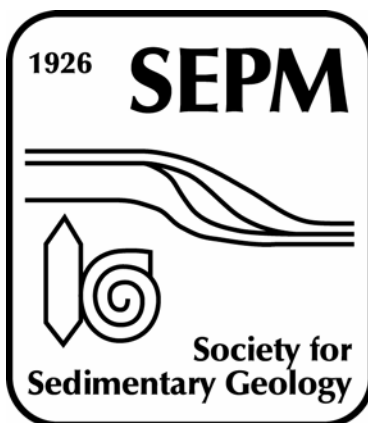
Rick Behl, another world traveler.

NEW 2006 PS-SEPM PUBLICATION...

**PS-SEPM Book 101
USING STRATIGRAPHY, SEDIMENTOLOGY, AND GEOCHEMISTRY TO
UNRAVEL THE GEOLOGIC HISTORY OF THE SOUTHWESTERN
CORDILLERA: A VOLUME IN HONOR OF PATRICK L. ABBOTT**

Recognizing his remarkable career in teaching, research, and service to profession and community

**Gary H. Girty (San Diego State University)
John D. Cooper (California State University, Fullerton)
Editors**



Pacific Section

\$49.50 (includes S&H)

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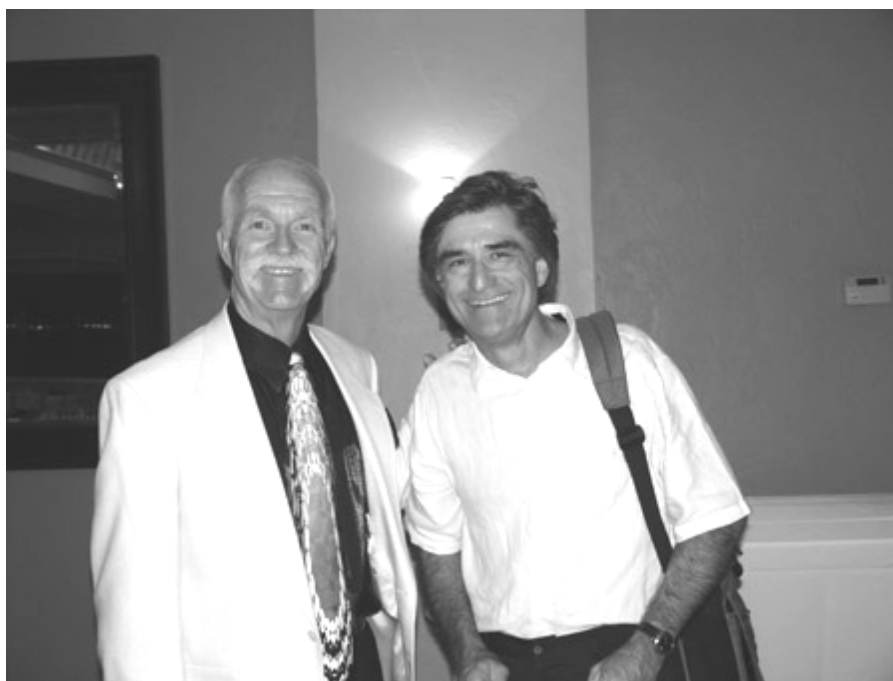
**USING STRATIGRAPHY, SEDIMENTOLOGY, AND GEOCHEMISTRY TO UNRAVEL THE
GEOLOGIC HISTORY OF THE SOUTHWESTERN CORDILLERA:
A VOLUME IN HONOR OF PATRICK L. ABBOTT**

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328 pages, 50 in color



Pat Abbott (left) and former student, Mario Caputo (right), at Pat's retirement banquet with colleagues at Tom Ham's Lighthouse restaurant, San Diego, September, 2005. Photo by Pia Parrish.

**PACIFIC SECTION-SEPM
MEMBERSHIP INFORMATION, 2006**

The Pacific Section SEPM has grown to become an international society with more than 600 members; attracting students and working professionals from the United States, mainly from California and other Pacific states including Hawaii and Alaska, and from Canada, Europe, Asia, and South America. Help maintain the vitality of the Pacific Section, SEPM by renewing your membership and recruiting new members, especially undergraduate and graduate students majoring in the geosciences. Please distribute copies of the membership form (**provided on the next page**) to colleagues and students who have an interest in sedimentary geology. The form is available also on the PS-SEPM website.

The year printed to the right of your name on the address label of the newsletter indicates the year up to which you have paid membership dues. If the year is 2006 or older, please renew your membership and remit dues in the category of your choice, either a 1 year membership for students or a 1- or 3-year membership for professionals. A **Lifetime Membership** is now available for a one-time dues payment. See schedule below for age and payment categories. Honorary and Lifetime Members (indicated by the abbreviations, Hon and Life, respectively, on mailing labels) are permanent members of the Society; they are exempt, of course, from further dues payments. Please send your membership application or renewal to:

**John D. Cooper
Department of Geological Sciences
California State University, Fullerton
Fullerton CA 92834-6850**

PLEASE UPDATE YOUR EMAIL ADDRESS WHEN YOU RENEW.

Membership Dues

Regular membership dues:

- \$ 7.50 for a 1-year professional membership**
- \$20.00 for a 3-year professional membership**
- \$ 5.00 for a 1-year student membership**

NEW!

Lifetime membership dues:

- \$150.00 for age group 20-40 years**
- \$100.00 for age group 40-60 years**
- \$ 50.00 for age group 60 years and older**



Good Reasons for Joining the Pacific Section SEPM

- The Pacific Section SEPM is one of the premier geological societies of western North America.
- Members benefit from discounts on superbly done field-trip guidebooks and special publications that address sedimentologic and stratigraphic aspects of the Pacific region of the United States.
- Your membership dues sustain the Society by helping defray costs of publications. They further help support the operation of the California Well Data Repository (for borehole logs, cores, cuttings, microfossils, and other data) in Bakersfield, California.
- A **Society Website** provides up-to-date information on officers and other members, field trips and conferences, short courses, publications, and job openings:

<http://www.sci.sdsu.edu/pacsepm>

BOOKMARK THE ABOVE WEB ADDRESS FOR QUICK AND READY REFERENCE

- **Society Newsletter, *Pacific Sedimentologist***, distributed quarterly to members by email and surface mail. It features news and events such as field trips and conferences that are planned throughout the calendar year. Please share any information pertinent to the Society by sending it to **Mario V. Caputo, Newsletter Editor** at mvcaputo@earthlink.net.

**Pacific Section – SEPM (Society for Sedimentary Geology)
Membership Form, 2006**

Renew ☐

New Member ☐

Last Name	First Name	Middle Name or Initial
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Preferred Mailing Address: <i>Business or Home – COMPLETE ONLY ONE</i>			
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Job Title	

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Highest Degree Earned	
Year Earned	
Institution	
Specialization	

State Certifications/Registrations

Regular Memberships (check ✓ one)	1-year professional	\$ 7.50	
	3-year professional	\$20.00	
	1-year student	\$ 5.00	
Lifetime Memberships (check ✓ age group)	20-40 years old	\$150.00	
	40-60 years old	\$100.00	
	60 years old and older	\$ 50.00	



Make check payable to "Pacific Section, SEPM" and send to:

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PS-SEPM Treasurer
Department of Geological Sciences
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Fullerton, CA 92834-6850

PLEASE HELP INCREASE MEMBERSHIP IN THE PACIFIC SECTION – SEPM. COPY THIS FORM AND GIVE IT TO STUDENTS AND COLLEAGUES WHO SHARE AN INTEREST IN SEDIMENTOLOGY.

REGISTRATION FORM

Pacific Section SEPM Fall Field Trip, 2006 **Saturday, October 7**, Palos Verdes Peninsula

Please fill out one form **per person**. Required Registration fee includes: fieldtrip guidebook, basic charge for students and non-students, plus refreshments and **tour bus** transportation on the peninsula (**all** participants must ride chartered bus – no private vehicles because of tight parking constraints).

BRING YOUR OWN LUNCH AND SNACKS

Name _____

Mailing Address _____

Phone _____; e-mail _____

Required Registration Fee (Registration deadline is September 7):

PS-SEPM Member/Non-Student Fee: \$75.00 _____

Non-Member/Non-Student Fee: \$80.00 _____

Student Fee: \$35.00 _____

Department:

College/University:

Total: Make check (no cash or credit cards) payable to PS-SEPM: \$ _____

Mail this form with check payable to PS-SEPM to be received by **no later than September 7** to secure your spot for “**A Day on the Peninsula**”

MAIL TO:

**John Cooper
Department of Geological Sciences
California State University, Fullerton
Fullerton, CA 92834-6850**