2013 SPRING CONVENTION ISSUE

Pacific Sedimentologist

Newsletter of Pacific Section, SEPM (Society for Sedimentary Geology)

volume 85, issue 1 **April, 2013**

Geology of the Paleocene Carmelo Formation, Point Lobos State Reserve, part of PS-SEPM sponsored Field Trip, Annual PS-AAPG PS-SEPM SPE Convention, Monterey, CA; Upper Left: Sandstone turbidity current deposits; Upper Right: Load casts and soft-sediment deformation; Lower: Interstratified pebble -cobble conglomerates and sandstones of high-density turbidity current and debris flow origin; all units interpreted as submarine-channel fill sequence.

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REMINDER: In an effort to "Go Green" and remain cost-effective, the PS-SEPM Newsletter is now issued in electronic version ONLY. However, members without Email access may still obtain hard copies for an extra fee....Please Refer To Membership Form inside.

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See also: OUR PS-SEPM web site: www.pacificsectionsepm.org

PS-SEPM President's Message

Dear Members,

I have thoroughly enjoyed working in the role of President of PS-SEPM for the last year or so. This has been an interesting time in our organization starting with our joint meeting with the national AAPG last spring in Long Beach, working with (using the term very loosely) with PS-AAPG in planning the upcoming meeting in Monterey, having a very exciting field trip to the Salinas Basin last fall, and planning two exceptional field trips for next fall and winter. My job has been made much easier by the support of the Executive Committee and field trip leaders whom I thank. It has been a pleasure working with all of you. Most of all, I have met some new folks and made some new friends while acting as your President.

The field trip to the Salinas Basin last fall was led by Tess Menotti and Steve Graham from Stanford University, and provided an outcrop view of the geologic factors which influence oil production in the basin. As a bonus, we ended the trip at the San Ardo oil field, graciously hosted by Aera Energy and were able to inspect the same rocks in cores which we saw in outcrop. PS-SEPM Past-President Bonnie Bloeser was instrumental in arranging for Aera Energy to host us at the oil field, and also for providing lunch at Mission San Antonio. Thank-you, Bonnie!

We are presently planning two field trips. Mario Caputo and I recently returned from a field trip to the Alamo Breccia outcrops with John Warme (Emeritus Professor, Colorado School of Mines). John will lead the Fall Field Trip to this area in south-central Nevada on October 4-6, where we will observe outcrops of the Alamo Breccia (within the Upper Devonian Guilmette Formation), which John and his co-workers have Interpreted as a Devonian bolide impact breccia (see the short summary of the field trip in this newsletter).

Finally, Mario and Chuck Siemers are planning an early January 2014 field trip to Hawaii, during which modern volcanic and carbonate sediments on the Big Island will be compared with 5 Ma sediments of similar origin on Kauai. Specific details of this trip are forthcoming.

The upcoming joint convention with PS-AAPG and SPE in Monterey will be a busy one for PS-SEPM, where we are sponsoring or co-sponsoring several field trips and technical sessions. The highlight of the meeting will be the presentation of Honorary Membership plaques to Don Lowe and Bob Garrison. The presentation will be made at a reception on Tuesday afternoon, April 23, in the convention center. I look forward to seeing many of you there.

In summary, the past year has been a very stimulating time for me, and I look forward to meeting many more of our members at the upcoming meeting and field trips. My goal as president is to continue the traditions of our society to conduct significant field trips and to attract new student and professional members. I wish to thank all of the society members who have contributed their energy and knowledge to make PS-SEPM a viable, active, contributing scientific group. As usual, please feel free to contact me with any questions, comments, or suggestions, and I hope that, together, we can continue the growth and geologic contributions of our group.

Tom Anderson
Emeritus Professor, Sonoma State University
Adjunct Professor, University of Nevada, Reno
PS-SEPM President 2013-2014

PS-SEPM – PS-AAPG Annual Joint Technical Conference Portola Hotel, Monterey, CA April 20– 25, 2013

Our annual PS-SEPM Spring meeting and convention occurs this year in **Monterey, California**, as part of the **Annual PSAAPG-PSSEPM-SPE Spring Convention**. . The venue is the **Portola Hotel in Monterey.**

The extensive technical program includes fifteen (15) separate theme sessions with 200+ oral presentations and poster presentations which are scheduled. An SEPM and AAPG separate Student Poster Session is also scheduled. There are also nine (9) scheduled field trips and five (5) short courses .

A complete description of theme session oral and poster presentations, short courses, field trips, special lectures and social functions is also available at both the PS-SEPM **(www.pacificsectionsepm.org)** and PS-AAPG **(www.psaapg.org)** web sites, as well as convention logistics. **Abstracts of oral presentations and poster sessions are available within the latest edition of the AAPG Bulletin.**

A separate **Undergraduate Research Poster Session** is scheduled, which the PS-SEPM Executive Committee will judge for the presentation of our annual **John Cooper Memorial Award.**

Students can also enjoy special rates on field trips and short courses, and participate in networking opportunities such as the Meet & Greet and the Student & Faculty Lounge.

Theme Sessions Sponsored or Co-sponsored by SEPM include the following:

- **Monday Morning, April 22**

  Sediment Routing In Western North America

  The Stratigraphic Architecture of Deep-Water Deposits: Integrated Data Analysis for Evolving Depositional Models (Part 1)

- **Monday Afternoon, April 22**

  The Stratigraphic Architecture of Deep-Water Deposits: Integrated Data Analysis for Evolving Depositional Models (Part 2)

- **Tuesday Morning, April 23**

  Sedimentology and Biogeochemistry of the Monterey Formation and Modern Upwelling Sediments: A Session Dedicated To Bob Garrison (Part 1)

  Applications of Outcrop, Subsurface & Seafloor Studies of Turbidite Systems To Oil & Gas Reservoirs, A Session in Honor of Donald R. Lowe

  Tectonics and Sedimentation on the Pacific Margin of North America: New Developments and Interpretations

- **Tuesday Afternoon, April 23**

  Sedimentology and Biogeochemistry of the Monterey Formation and Modern Upwelling Sediments: A Session Dedicated To Bob Garrison (Part 2)

  Fluvial and Shallow Marine Depositional Systems: Insights from Outcrops and Subsurface Prediction

Field Trips Sponsored By PS-SEPM include:

- ***The Monterey Formation In The Santa Lucia and Monterey Areas;*** Saturday April
- 20

- ***Analogs For Coarse-Grained Deep-Water Reservoirs - Carmelo Formation (Paleocene), Point Lobos State Reserve, California;*** Wednesday April 24 **(see photos on newsletter cover)**

- ***The Salinas Basin Petroleum System and it's Outcrop Expression;*** Thursday April 25; **(note: similar itinerary as the fall 2012 PS-SEPM field trip; see summary below)**

- ***Exploring the Transition from a Submarine Canyon to its Depositional Apron, Upper Cretaceous Pigeon Point Formation;*** Thursday April 25

Short Courses Sponsored BY PS-SEPM Include:

- ***Sequence Stratigraphy For Students*** Saturday April 20 and Sunday April 21.

NOTICE OF SPECIAL RECEPTION

AWARDING OF PS-SEPM HONORARY MEMBERSHIPS

TO

ROBERT GARRISON

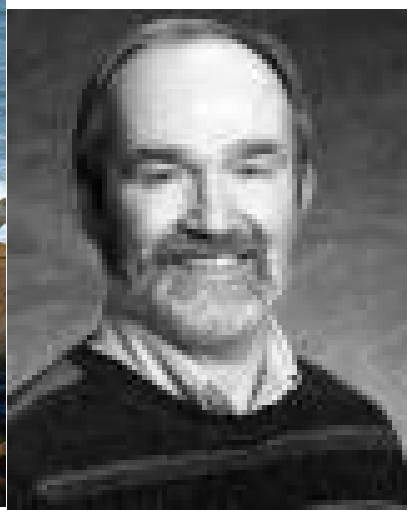
AND

DONALD R. LOWE

TUESDAY APRIL 23 @ 4 PM IN BONZAI ROOM 1 & 2

(IMMEDIATELY FOLLOWING THE MONTEREY FORMATION SESSION IN HONOR OF BOB GARRISON)

(SEE Awards Citations below)



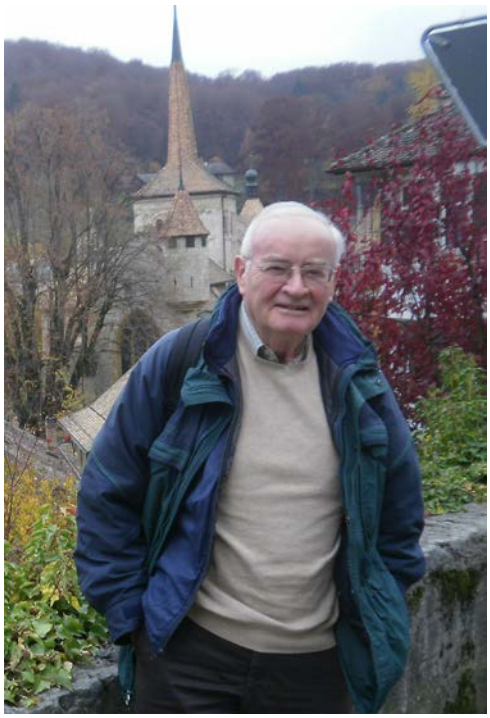
Don Lowe leading field trip at the outcrop, deep-marine clastic Pigeon Point Formation (Upper Cretaceous), Central California coast

Don Lowe Receives PS-SEPM Honorary Membership Award

Dr. Donald R. Lowe is known for his seminal contributions to sedimentology and to understanding the early Earth, its surface system, life and sediments. Don Lowe spent his childhood in Sacramento, and then moved west to Stanford University for his undergraduate education. After earning a Ph.D. from the University of Illinois, he returned to California for a Post-Doctoral position at the U.S. Geological Survey in Menlo Park, studying California phosphatic deposits. He spent the first half of his academic career as a faculty member at Louisiana State University. Drawn back to his beloved California, he has been Professor of Geology in the Department of Geological and Environmental Sciences at Stanford University since 1988, where he holds the Steineke Chair.

Don Lowe has played an especially important role in the evolving understanding of coarse clastic deep-water sediments. His insights into deep-water sedimentary processes and products have shed light on the voluminous turbidite systems recorded in Mesozoic and Cenozoic strata of California, and have significantly aided in the exploration and production of petroleum sequestered in deep-water deposits in California and beyond. For these contributions, Professor Donald R. Lowe is recognized as an Honorary Member of Pacific Section, SEPM.

Stephan A. Graham, Professor, Department of Geological and Environmental Sciences, Stanford University



Bob Garrison provides scale for spectacular Monterey Formation siliceous shale outcrops, central California

Bob Garrison Receives PS-SEPM Honorary Membership Award

I am delighted that Robert E. Garrison is being honored by the Pacific Section SEPM with the 2012 Honorary Membership Award. This is a well-disserved award for someone who has contributed so greatly to sedimentary geology in general and the Pacific Section, in particular. Bob is an outstanding sedimentologist who made tremendous contributions to our science through his research, publications, his influence on his colleagues, and his shaping of his many students. He has fundamentally changed sedimentologists' understanding of the origin, distribution and diagenesis of fine-grained marine sediments, most notably the siliceous, calcareous and phosphatic rocks. He has generated enormous international goodwill, cooperation, integration and scientific progress with his tireless efforts to involve scientists from all institutions, regions, and countries in the understanding of the sedimentary deposits of the deep sea.

Bob is particularly important to our society for his leadership in unraveling the sedimentology, diagenesis and paleoceanography of the complicated and immensely important Miocene Monterey Formation through his own research and that of his students. He organized and edited a collection of superb Pacific Section SEPM and AAPG symposium volumes in the 1980's (some while PS-SEPM President or past-President) that are still fantastic sources of insight for modern workers.

Throughout his career Bob Garrison has consistently addressed fundamental sedimentologic problems in fields that had previously been inadequately addressed because of the lack of appropriate methodology or due to being outside of popular trends in research. Bob's work has focused on the origin, diagenesis

and distribution of fine-grained, deep-sea and biologically generated or mediated sediments. These are the kinds of sediments that are not easily understood by either physical or paleontological studies alone, but required an integration of traditional methods with modem marine biology, oceanography and paleoclimatology; these sediments include: radiolarites, diatomites, porcelanites and cherts; deep-sea and shelfal chalks and limestones; organic-rich mudstones (black shales); and phosphorites.

Bob's scientific curiosity has been guided by his concern for the human condition, and in the last -25 years his research has focused primarily upon the sedimentologic resources of energy and fertilizer necessary for our communal wellbeing. It is hard, but I can try to distill out what (in my opinion are a few of Bob Garrison's major contributions to our science.

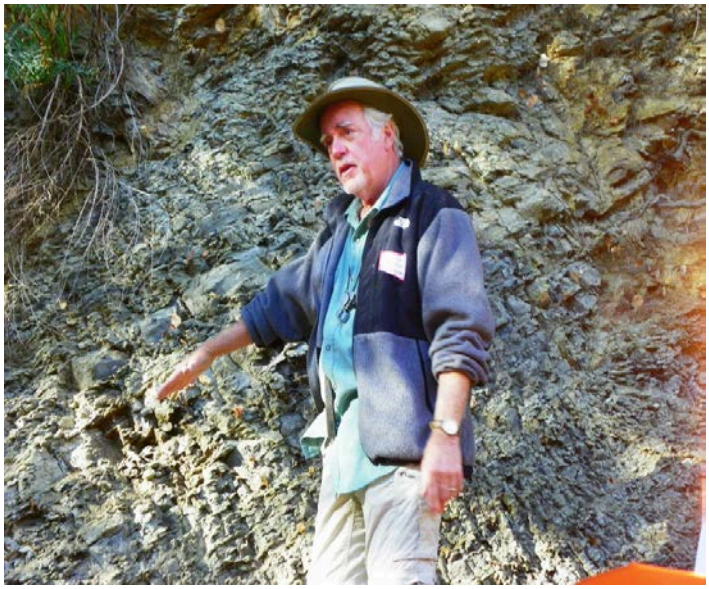
- Demonstrated the biogenic origin of fine-grained pelagic limestones through pioneering use of transmission electron microscopy and detailed field stratigraphy. Previously, most geologists thought these to be inorganic sediments.
- Detailed the sedimentologic and paleoenvironmental origin of Alpine radiolarites and extended this understanding to other mountain belts throughout the world.
- Clarified the space and time relationships between seafloor volcanic rocks and pelagic sediments. Many researchers had previously considered volcanism to be genetically responsible for the spatially related pelagic sediments.
- Documented in detail the early diagenesis of pelagic chalks and the significance of hardgrounds, omission surfaces, nodular limestones, and the associated glauconitic or phosphatic condensed intervals.
- Described the sedimentary petrology and sedimentology of the Mediterranean evaporite facies.
- Unraveled the sedimentology of phosphorites and phosphatic sediments of Egypt, Israel, Oman, Saudi Arabia, England, Columbia, the Peru margin, California, and Mexico.
- Garrison was a motivating force in bringing together American, Japanese, Korean and Russian geologists to synthesize their studies of Miocene Monterey-type facies on opposite sides of the Pacific Rim.
- Bob has been at the center of a group of colleagues investigating the origin and significance of phosphatic rocks.

Bob Garrison is also a superb teacher at all levels. I can say that he was pivotal in helping me and his other students develop a cosmopolitan understanding of the world's geologic evolution by bringing his broad international experience (and never-ending stream of visiting colleagues) into every class and seminar. Bob's reputation as a scientist and as a teacher has also served as the seal of approval for dozens of his students and, I know that I can speak for all of us, we all are very grateful for doors that he opened for us.

In closing, the PS-SEPM could have done no better than in selecting Bob Garrison for its Honorary Membership Award.

Enthusiastically submitted,

Richard J. Behl
Professor of Geological Sciences
California State University, Long Beach



Trip co-leader Steve Graham discusses organic-rich source rocks of the Monterey Formation Sandholt Member; Arroyo Seco campground area (photo courtesy Wayne Henderson).

SUMMARY OF 2012 PS-SEPM FALL FIELD TRIP

Salinas Basin Petroleum System of Central California and Its Outcrop Expression

October 19 - 21, 2012

Trip Leaders: Tess Menotti and Stephan A. Graham, Department of Geological and Environmental Sciences, Stanford University

The Salinas Valley and Santa Lucia Range of central California provided a unique opportunity to observe all elements of the **Salinas Basin petroleum system** in outcrop. Neogene uplift of the sedimentary fill along the basin margins has exposed the critical components of a petroleum system responsible for the formation of the half-billion-barrel San Ardo oil field. That the petroleum system components are identifiable here in outcrop is significant, and because this afforded the roughly 60 participants of this terrific PS-SEPM field trip the opportunity to understand the current model and interpretation of the evolution of the Salinas Basin, its oil fields, and the prediction of undiscovered petroleum accumulations and their distribution.

All petroleum system elements of the Salinas Basin (source rocks, migration conduits, reservoir strata, seal rocks and overburden) are enclosed nearly entirely within the Miocene Monterey Formation. Outcrops observed during both days of this field trip were located within the western side of the basin (Santa Lucia Range), including exposures of the organic-rich source rock (Sandholdt Member of the Monterey) and the overlying thick siliceous Hames Member of the Monterey Formation. As a comparison to the outcrop expression of the system in the western part of the basin, cores collected from the reservoir and seal rocks from the **San Ardo oil field,** in the east-central portion of the basin, were observed by participants on Day #2 of the trip, courtesy of **Aera Energy**, and provided insight into these petroleum system components within a zone of active production.

Day #1 began at the **Arroyo Seco Campground** in the Los Padres National Forest, which occurs within the northern part of the Salinas basin.
The organic-rich petroleum source rocks of the **Sandholdt Member, Monterey Formation**, were observed at this location. The following stop was near the bridge crossing of the Arroyo Seco, where the active **Rinconada Fault** was observed in a spectacular road cut exposure. Next the trip caravan drove south to the **Indians Ranch area** of the central Santa Lucia range, through Hunter Liggett Military Reservation and **Mission San Antonio**, where lunch was graciously provided by **Aera Energy.** Within the Indians Ranch and Wagon Caves Rock area, Paleocene **("Merle Formation")** through lower Miocene **(Vaqueros Formation)** strata were observed, including what has been interpreted as the fill of a long-standing submarine canyon erosionally

cut into Salinian Block igneous basement. Subsequently, trip participants travelled south to Lake San Antonio and its scenic resort, where BBQ dinner was served, and PS-SEPM awards were presented by **Past-President Bonnie Bloeser** of Aera Energy.

On Day #2, the trip moved further south to the **Lake Nacimiento Dam** area, where access was graciously provided by the Monterey County Water Resources Agency. Good exposures of the siliceous Hames Member of the Monterey Formation were observed, including its complex deformation due to structural inversion of the Salinas basin post-Miocene. Tar sands in the Plio-Pleistocene Paso Robles Formation were next observed, within the last out outcrop exposures of the trip. Following lunch at the Lak Nacimiento Dam overlook, participants travelled back north and east to the San Ardo oil field, as discussed above, to view cores and listen to lectures and geologic interpretations presented by Aera Energy petroleum exploration geologists.

Disharmonic folding within siliceous shales and porcelanite of the Monterey Formation, upper Hames Member, Lake Nacimiento Dam area; occasionally disharmonic PS-SEPM ExCom member for scale (photo courtesy Wayne Henderson)

Copies of the **guidebook** for this field trip (PS-SEPM **Book No. 115**) are available for purchase.

Please refer to the Publications Order Form at the rear of this newsletter

Fall field trip 2012 group photo, Indians Ranch area, central Santa Lucia range; outcrop in background is spectacular Oligo-Miocene Vaqueros Formation amalgamated sandstone beds, exhibiting basal load-deformation contacts and large-scale cross stratification (photo courtesy Wayne Henderson)

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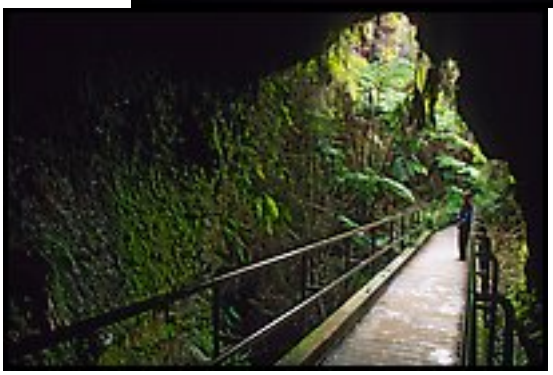
Many thanks to the trip leaders Tess and Steve, to Bonnie Bloeser of Aera Energy, and all other parties who coordinated, organized and subsidized this successful trip!



REVISED Announcement: January 2014 Field Trip

Hawaii (Big Island and Kauai)

Leaders: Charles Siemers-Blay, TEOK Investigations, Poipu, Hawaii, and Mario Caputo, San Diego State University

Sedimentary Geology Of A Mid-Plate Volcanic Mountain-Island Chain

This five-day trip is planned to accommodate roughly **30 participants**. The trip will begin on the Big Island, with accommodations in Hilo over three days, followed by inter-island air transport to Lihue, Kauai for two more days.

Estimated Cost: $900 per person including all lodging, lunches, dinner (2 nights), ground transportation and guidebook (Note: these costs do not include airfare to and from the Mainland, or inter-island travel costs, which all participants must arrange individually

Scheduled activities include visits to volcaniclastic sand beaches (black and green sands), to Hawaii Volcanoes National Park to observe Kilauea crater & vent eruptions and flows, to the Kona Coast (Kekaha State Park) to observe mixed volcanic-carbonate sand beaches, glacial deposits at Mauna Kea saddle, Quaternary eolianites and karst features on Kauai, and Waimea Canyon on Kauai.

A separate e-mail will be distributed subsequently to all PS-SEPM Members, containing additional trip details regarding dates, Registration Form, a detailed trip itinerary and air travel suggestions.

NOTE: PS-SEPM has agreed to provide a $200 subsidy per person for the first 10 students who register for this trip!!

ANNOUNCEMENTS AND OTHER BUSINESS

Fall 2013 Field Trip To East-Central Nevada (Pahranagat Range) October 4 - 6, 2013

Our annual Fall Field Trip this year will travel back to Nevada (remember 2010 and 2011 trips?). This year, we will be fortunate to take a tour of the spectacular **Alamo Megabreccia**, contained within the Upper Devonian platform carbonate deposits of the **Guilmette Formation.** The Megabreccia has been interpreted to result from a mid-Paleozoic bolide impact on the Cordilleran miogeocline shelf.

The trip will be led by **John Warme** (Professor Emeritus, Colorado School of Mines) and **Mara Brady** (Assistant Professor, California State University, Fresno 0
and 2013 PS-SEPM Vice President).

Further details of this trip will be issued to all PS-SEPM members within subsequent e-mails, and the Fall 2013 Newsletter.

2013 GSA Cordilleran Section Meeting, May 20 - 22, 2013, Fresno, CA

The 109th annual meeting of the GSA Cordilleran Section will be held in Fresno, CA this year. Details of the technical program and registration may be found at the GSA web site **(www.geosociety.org/sections).**

Selected technical sessions of probable interest to PS-SEPM members include the following:

- Tectonic Processes That Build the Stratigraphic and Structural Record of Ancient and Modern Convergent Margins
- Using Detrital Zircon Age Data to Reassemble the Cordilleran Jigsaw Puzzle
- Quantitative Approaches to Sedimentology and Stratigraphy (chaired by PS-SEPM Vice President **Mara Brady**)
- Reconstructing the Pacific-North American Plate Boundary through Late Cenozoic Time

PS-SEPM Web Site

During fall 2012 Tony Carrasco of San Diego State University returned to the role as PS-SEPM Web Master. New web page contents may be viewed at **www.pacificsectionsepm.org.**

The web site includes details of the PS-SEPM organization, convention/meeting information,

field trip information, list of PS-SEPM publications, past field trip and convention photos, Society awards, newsletter archive, status of new endeavors such as the AAPG Data Pages project (discussed below), and historical archives of the Society (past awards, past Executive Committee members, etc.).

The web page is continuously a work-in-progress, and will be evolving constantly to best serve the needs of our membership. **Your comments and suggestions are welcomed and encouraged!**

PS-SEPM Awards Honor John Crowell and Ray Ingersoll

The Executive Committee of PS-SEPM has voted to create two additional new annual awards, the **John C. Crowell Award** for outstanding graduate presentation, and the **Raymond V. Ingersoll Award** for outstanding undergraduate senior thesis in sedimentary geology. **Each will first be awarded during our Annual Spring Meeting in May, 2014. PROFESSORS ARE ENCOURAGED TO ALERT THEIR STUDENTS AS TO THESE AWARDS, and ENCOURAGE SUBMITTAL OF CANDIDATES!**

Electronic Catalog Of PS-SEPM Publications: In Progress!

The Executive Committee has entered into contract for scanning and electronic (PDF) availability of ALL PS-SEPM publications, via the **AAPG "Data Pages" Project.** The E-copies include rare, old and out-of-print publications as well as those still in print (see Publication List at rear of this newsletter). Thank you to those members who have graciously provided copies of their out-of-print and rare publications! The digitizing process has is scheduled for completion in 2013. Portions of our catalog are now available for sale via the AAPG Data Pages web site.

PS-SEPM Secretary and Managing Editor **Mario Caputo** has worked diligently to research, collect and coordinate the scanning of these publications, interfacing with the AAPG Data Pages project representatives to ensure successful completion of this important project. **Thank you Mario for all of your efforts!**

Our goal is to eventually make E-copies available as PDF documents for sale via the NEW PS-SEPM web site, in part to encourage sales of our entire outstanding publications catalog to universities, corporations, libraries, etc. as an added revenue stream. Marketing of the PS-SEPM catalog via the Data Pages consultants is part of our contract agreement.

More details and status updates will be provided as the project progresses.

Historical Archive Of PS-SEPM

We are actively seeking anyone with information regarding the history of PS-SEPM to please contact **Ray Ingersoll (ringer@ucla.ess.edu)** with this information, so that we may develop a comprehensive historical archive for our web site. Thus far, efforts have produced an impressive first draft of this archive…many thanks to Ray for spearheading this project!

Information of interest includes a) listing of past officers; b) listing of past field trips and their leaders, and c) listing of those who have received PS-SEPM awards.

PACIFIC SECTION

PACIFIC SECTION - SEPM
MEMBERSHIP INFORMATION, 2013- 2014

The Pacific Section SEPM has grown to become an international society with more than 400 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.

A **Lifetime Membership** is also available for a one-time dues payment. See schedule below for age and payment categories. Honorary and Lifetime Members are permanent members of the Society; they are exempt, of course, from further dues payments. Please send your membership application or renewal to:

Wayne Henderson, PS-SEPM Membership Manager
Department of Geological Sciences
California State University, Fullerton
Fullerton CA 92834-6850

PLEASE PROVIDE/UPDATE YOUR EMAIL ADDRESS WHEN YOU RENEW!!
(Otherwise You Will NOT Receive Future Newsletters And Announcements!)
(Except As Described Below)

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 3-year student membership
(Please add $25.00 to each category if you wish to receive Hardcopy versions of the Newsletter)

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
(Please add $50.00 for each category if you wish to receive Hardcopy Newsletters)

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, stratigraphic and paleogeographic 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**:**

NEW WEB ADDRESS! http://www.pacificsectionsepm.org
BOOKMARK THE ABOVE WEB ADDRESS FOR QUICK REFERENCE!

Pacific Section – SEPM (Society for Sedimentary Geology)
Membership Form, 2013

Renew ☐ New Member ☐

Last Name	First Name	Middle Name or Initial

Preferred Mailing Address: ***Business or Home – COMPLETE ONLY ONE***			
Business	Company or Teaching Institution		
	Street or P. O. Box #		
	City	State	Postal Code
Home	Street or P. O. Box #		
	City	State	Postal Code

Telephone	
Business	
Home	
FAX	

UPDATE Email Address

Employment	
Employer Name	
Job Title	

Education	
Highest Degree Earned	
Year Earned	
Institution	
Specialization	

State Certifications/Registrations

Regular Memberships (check ✓ one)	1-year professional	$ 7.50	
	3-year professional	$20.00	
	3-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:

Wayne Henderson
PS-SEPM Membership Manager
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.

10-19-2012

Pacific Section SEPM (Society for Sedimentary Geology)

ORDER & PRICING FORM FOR PUBLICATIONS STILL AVAILABLE *IN PRINT*

book #	TITLE	Non-member	Member	Qty
2	**Turbidites and Deep-Water Sedimentation (Short Course Notes):** Middleton, G V., Bouma, A. H., eds., 1973 157p. ISBN: 1-878861-60-3	12.00	10.00	OP
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