



SoCal SETAC NEWS



Society of Environmental Toxicology and Chemistry
Southern California Chapter

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President's Corner....

DANIEL SCHLENK

SOCAL SETAC PRESIDENT



Congratulations to Phil Markle and all So Cal SETAC board

members for hosting an excellent 2005 Annual Meeting at Loyola Marymount University! Many thanks go to the Southern California Academy of Sciences (SCAS) for allowing us to partner with them at this event. I would also like to extend a special thanks to the plenary speakers, presenters, and the tremendous efforts of volunteers to make that meeting a success. Our corporate sponsorship also deserves added recognition: AMEC Earth and Environmental, Aquatic Bioassay and Consulting Laboratories, Inc., BBL Sciences, and Weston Solutions; Thanks you!

Given the success of this past meeting, it has been proposed that an additional joint meeting be held with SCAS next Spring which is scheduled for Pepperdine University. Our out-going Prez, Lan Wiborg will be organizing that effort. She also deserves credit for an excellent job of running the chapter for the past year as well as serving as chair for the Education Committee for SETAC North America (SNA). Thanks Lan!! Other board members will be leaving and deserve a round of applause include Jay Gan (U.C. Riverside); and Chris

Marwood (formerly of U.C. Santa Barbara) who will be returning back to the Great White North of Canada. We will miss you Chris. Brian Hester who served valiantly as our secretary the past year is also leaving us for the North. Thanks to him for updating our membership lists and providing a location for the meetings down south.

With these departures, it has been our pleasure to seek out the addition of several new board members: Kat Prickett has graciously volunteered to come back and take over the secretarial duties. Thanks for saving the day, Kat!! Phil Markle will be staying on as a non-voting member of the board as our newest position of Outreach Coordinator. He will be primarily responsible for coordinating our Science Fair activities throughout the year. Through the SNA Education Committee, he has developed a "Science Fair SOP", which is currently under review by the SETAC NA board. It is hoped that all North American regional chapters may use the protocol as an outreach mechanism. Great Job, Phil!!

The two newest members of the board will be Hunter Lennihan (U.C. Santa Barbara) and Susan Gardner (CIBNOR, La Paz, Mexico). Each of these folks allows expansion of our geographical area to the North and Sur. Susan will be giving a presentation on her research at the next Dinner Meeting slated for October 12 (see attached announcement). We look forward to their contribution and vision for our chapter.

I am hopeful that we will continue to grow as a regional chapter and foster better linkages between Academia, Industry and Government with regard to the environment. I encourage all members to participate in our chapter activities and get involved. I look forward to seeing you at one of our upcoming Dinner Meetings or the Annual Meeting. All the best!! Dan



SoCal SETAC 2005 Annual Meeting

The SoCal SETAC annual meeting was held May 19-20, 2005 at Loyola Marymount University. It was joint

meeting held with the Southern California Academy of Sciences (SCAS). We had a good turnout of SoCal SETAC members including many good presentations and posters. Congratulations to the winners of the Best Student presentation and posters awards! The winner of the best presentation award went to Da Shi from UC Riverside for his study *Oxidation of Selenomethionine by Flavin-Containing Monooxygenases (FMOS)*, while Wesley Hunter from UC Riverside won for best poster for his study *Bioavailability of Permethrin in Sediments and Estimated with Solid Phase Microextraction (SPME)*. Each student received a cash scholarship. Congratulations to all our student awards winners!

SoCal SETAC sponsored two plenary sessions. One covered issues in environmental chemistry and the other in stream bioassessment. A review of each plenary session from the session organizers is provided below.

Stream Bioassessment

Contributed by Howard Bailey
AMEC Earth and Environmental

The stream bioassessment session was quite interesting, with a reasonably wide range of topics which are all of interest to those involved in water quality monitoring programs. Andy Rehn of California Department of Fish and Game led off the session with a review of the derivation of the southern California Index of Biotic Integrity (IBI) for freshwater streams invertebrates. He took us through the basic approach and statistical procedures used to identify appropriate metrics, develop stream rankings, and validate their findings. For those of us involved in stream monitoring programs in southern California, there are now peer-reviewed benchmarks against which to compare values found in the watersheds we are working with. Questions that arose during the presentation included concerns with the low number of reference areas in lower gradient reaches, which is where we typically see the most disturbance, as well as applicability of indices from higher elevation/gradient streams compared with those at lower elevations.

Shelly Luce of Heal the Bay described procedures by which she (and co-workers) attempted to relate water quality parameters to the level of periphyton cover found in Malibu Creek. One of their biggest issues was to find an appropriate reference area against which to compare their results. Both nutrients (nitrates and phosphates) and canopy cover were correlated with the level of periphyton cover, but not necessarily consistently across

seasons. The lack of consistency made it problematic to identify threshold concentrations for nutrients in a way that would support establishing site-specific water quality concentrations.

Bill Isham (MEC/Weston Solutions) and Scott Johnson (ABC Laboratories) described their efforts and observations associated with conducting benthic macroinvertebrate monitoring programs in a wide variety of southern California streams. Isham noted that they observed relatively little correlation with most of the parameters measured and the IBI. Scott had similar observations, and also relayed experiences of major habitat events (sedimentation) occurring in the middle of the study period, making it problematic to determine cause and effects that might be related to stormwater quality.

Finally, Howard Bailey of Nautilus Environmental concluded with a presentation that described the application of *in situ* approaches to help address some of the uncertainties involved with interpreting field and laboratory data. A specific example was provided of an *in situ* trout embryo-larval study conducted at a mine site to evaluate the effects of the effluent discharge, as well as the presence of toxic groundwater seeps from old tailings deposits. In general, *in situ* tests can help separate the effects of habitat alterations from changes in water quality, confirm the presence of field effects based on predictions from laboratory studies, and identify actual sources of impairments in the field. Thus, these tests can address one of the major issues raised in some of the presentations described above, which is the frequent absence of any convincing cause-and-effect relationships between the habitat and water quality parameters measured and the condition of the benthic invertebrate community present.

Environmental Chemistry

Contributed by Jay Gan
University of California, Riverside

The SoCal SETAC 2005 Annual Meeting highlighted a successful plenary "Frontiers in Environmental Chemistry". The plenary was kicked off by a distinguished speaker, Prof. David Sedlak, Department of Civil and Environmental Engineering, UC Berkeley. Dr. Sedlak is a well respected expert in the area of wastewater-derived chemical contaminants, and also a member on the US EPA's Science Advisory Board on drinking water. Dr. Sedlak elaborated on the use of tracers to identify the sources of wastewater-derived

contaminants. For example, enantiomers of the human pharmaceutical propranolol can be used to differentiate between untreated sewage and wastewater effluent because the compound undergoes enantiomer-selective degradation in wastewater treatment plants. The selective degradation gives a unique enantiomer ratio that polymer coated fibers for biomimetic sampling. Bioavailability is a key to understanding chemical basis for ecotoxicity of many pollutants such as metals and hydrophobic organics. Fibers coated with specific polymers are commonly available, as they are often the same fibers used in telecommunication. Jay showed that disposable fibers can be imbedded into samples during bioassays, and the concentration detected in the fiber closely predicts bioaccumulation potential or toxicity for a number of pesticides. Such biomimetic methods are not only valuable for gaining mechanistic understanding of ecotoxicological may be used to “finger print” treated wastewater. One powerful application of this method is to identify sites for leaking sewer or sewer overflows, as untreated sewers tend to have an enantiomer ratio close to unity (1.0). The second speaker was Dr. Keith Maruya, currently a Principal Scientist in charge of the Chemistry group at SCCWRP. Although a Southern California native, Dr. Maruya was a Research Scientist with Skidaway Institute of Oceanography in Savannah, GA for about ten years before he joined SCCWRP in March 2005. (Welcome home, Keith!) Dr. Maruya discussed the principal and application potential of two techniques for tracking sources of persistent organic contaminants in the aquatic environment, enantiomer profiling for chiral compounds such as DDT isomers, chlordane, and synthetic pyrethroids, and compound specific isotopic analysis (CSIA) using carbon-13. By using these tools, one can track and apportion contaminant sources, and characterize the contaminant biotransformation potential of species, communities and ecosystems. The last speaker of the plenary was Dr. Jay Gan, currently Professor of Environmental Chemistry with the Department of Environmental Sciences at UC Riverside. Jay also happened to be the organizer of this special session. He introduced various chemically-based methods for measuring bioavailability of contaminants in the aquatic environment, and elaborated on the usefulness of effects of pollutants, but may also serve as tools for ecotoxicologically-relevant monitoring in the future.



October 2005 Quarterly Dinner Meeting

Contaminant Assessments in Pacific Sea Turtles

Presented by Dr. Susan Gardner

Research Scientist

Centro de Investigaciones Biologicas del Noroeste
(Northwest Center for Biological Research)
La Paz, Baja California Sur, Mexico

Contributed by Jeff Armstrong, Vice President

About 30 people came out October 12th for the quarterly dinner meeting held at the Old Spaghetti Factory in Fullerton and we treated to an outstanding presentation by Dr. Susan Gardner on contaminants in sea turtles in the Pacific Ocean. Dr. Gardner is a research scientist at the Northwest Center for Biological Research in La Paz, Mexico and is also a newly elected board member of SoCal SETAC!

Dr. Gardner's presentation focused on sea turtles of the Pacific, specifically those found in Mexico. She began her presentation with sea turtle ecology, identifying the different species found in the eastern Pacific, including the black, green, leatherback, and Kemp-Ridley sea turtles. She spoke about sea turtle breeding, feeding ecology, migrations, and conservation efforts in Mexico. Recent tagging-recovery evidence confirms that some sea turtles make trans-Pacific migrations from the west coast of North America to Japan. Dr. Gardner then moved into the world of ecotoxicology speaking about contaminant concentrations in sea turtle tissues, focusing on PCBs and other organochlorine compounds. In her talk, Dr. Gardner demonstrated that some species accumulate significant concentrations of these compounds in their tissues, but that location of exposure and contaminant source identification data is lacking and should be the object of further research.

SoCal SETAC sends it thanks to Dr. Susan Gardner for including this presentation at our quarterly dinner meeting to her trip to southern California. For more information on Dr. Gardner's research, contact her at sgardner04@cibnor.mx.



SETAC NA 26th Annual Meeting – November 2005

It's that time of year again! Time for the SETAC NA annual meeting! Don't forget to join your fellow SoCal SETACers in Baltimore November 13-17. In addition to the extensive meeting program, there are several activities of particular interest to SoCal SETACers. Come by and say hi to us at the Regional Chapter Booth on Monday, November 14 between 11:00 am and 1:00 pm. The booth is usually located near the registration area. We'll have a Café Press catalog to peruse of SoCal SETAC merchandise and candy for that mid-day sugar fix. We will be holding a chapter board/general membership meeting on Wednesday, November 16th from noon to one o'clock. Check the meeting program for the meeting room location. Lastly, following a most successful inaugural event in Portland last year, we will be meeting for a chapter happy hour get together Wednesday night at *The Wharf Rat* from 7:00 pm until ??? The Wharf Rat is within walking distance from the Convention Center.

See you in Baltimore!



Calendar of Events

Contributed by Daniel Schlenk, President

October 2005

Air & Waste Management Association, 4-5 October
Oak Brook, IL
<http://www.awma.org/>

Estuarine Research Federation, 16-20 October;
Norfolk, VA
www.erf.org

Water Environment Federation (WEFTEC), 29 Oct-2
Nov; Washington, DC
www.wef.org

November 2005

American College of Toxicology, 6-9 November;
Williamsburg, VA
www.actox.org

Soil Science Society of America, 6-10 November, Salt
Lake City, UT
www.soils.org

**Society of Environmental Toxicology and Chemistry
North American Annual Meeting**, 13-17 November,
Baltimore, MD
www.setac.org



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FREE Generic Job Announcements and INEXPENSIVE Commercial Advertisements/ Announcements are being accepted for future issues of SoCal SETAC News

Free job postings are limited to 5 lines at publication width (3.25 in., 10 point, Times New Roman font) and are subject to edit as needed to format the newsletter. Job announcements beyond the 5-line limit described or including logos can be purchased at the commercial rates. Per issue ad rates are:

Full Page: \$100 Half Page: \$75 Quarter Page: \$50 Eighth Page: \$35

Please send camera-ready advertisements or job listings to Jeff Armstrong (jarmstrong@ocsd.com) for inclusion in the next issue of SoCal SETAC News.

SoCal SETAC Officers – Fiscal Year 2005-2006

Position	Name & Affiliation	Responsibilities
Past President	Lan Wiborg City of San Dirgo LWiborg@sandiego.gov	Advisor/Stand-in for President and Vice-President Program Committee Chair for SoCal SETAC Annual Meeting
President	Daniel Schlenk UC Riverside Daniel.schlenk@ucr.edu	National SETAC Liaison Board Agenda & Action Items
Vice-President	Jeff Armstrong Orange County Sanitation District daniel.schlenk@ucr.edu	Newsletter Editor
Treasurer	Carlita Barton L.A. County Sanitation Districts cbarton@lacsds.org	Maintain Chapter Finances/Non-profit status Meeting Finances & Contracts
Secretary	Kat Prickett Port of Los Angeles kprickett@portla.org	Membership Maintenance Recording board meeting minutes Election Coordinator
Webmasters	Jon Ball City of Los Angeles jball@san.lacity.org	Maintains and updates SoCal SETAC web site
Historian	Open	Maintains So Cal SETAC archives

SoCal SETAC Board of Directors

Board Member (2005-2007)	Susan Gardner CIBNOR Sgardner04@cibnor.mx	Board Member (2004-2006)	Mary Ann Irwin UC Riverside mirwi002@student.ucr.edu
Board Member (2004-2006)	Howard Bailey AMEC Earth and Environmental howard@nautilusenvironmental.com	Board Member (2005-2007)	Hunter Lenihan UC Santa Barbara lennihan@bren.ucsb.edu
Board Member (2004-2006)	Scott Johnson Aquatic Bioassay and Consulting Labs., Inc. scj_aqua@pacbell.net	Board Member (2004-2006)	Ken Schiff SCCWRP kens@sccwrp.org
Board Member (2004-2006)	Erika DeHollan Loyola Marymount University edehollan@lacsds.org	Board Member	Open