



# SoCal SETAC NEWS



Society of Environmental Toxicology and Chemistry  
Southern California Chapter

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January 2006

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## ***President's Corner....***

**DANIEL SCHLENK**

**SO CAL SETAC PRESIDENT**



**H**appy 2006 SoCal SETAC members!! It was great to see

so many of you and you're your presentations at the SETAC North America annual meeting in Baltimore. Jeff has done a great job of summarizing the meeting in this issue. We also appreciated the support of you throughout this year through your attendance at our Fall Dinner Meeting and look forward to another exciting year. We will be having Dr. Jeff Steevens here from the US Army Corp of Engineers' Waterways Experiment Station in March for our Spring Dinner Meeting. In addition, we look forward to another combined annual meeting with the Southern California Academy of Sciences (SCAS) in May at Pepperdine University. Partnering ourselves with SCAS will provide a good opportunity for students and other academicians to experience the unique role SETAC plays in bringing together individuals from Private/Industrial, Government/Regulatory, and Academic schools of thought to provide a better understanding of Environmental Science. Having been somewhat under-represented in the Academic sector, this is an attempt to not only boost our membership, but align ourselves with the Long Range Plan of SETAC North America which is based upon Education, Outreach and Mentoring. The

Call for abstracts and the Announcement for the Dinner Meeting is included in this newsletter.

I would also like to acknowledge the contributions of two of our SoCal SETAC Board Members who received Presidential Citation honors at the Baltimore annual meeting. Lan Wiborg of the City of San Diego, who not only served as our President for the SoCal chapter, but was also the chair of the Education Committee for SETAC North America received a Citation for her contributions in re-structuring the committee and making it a significant force in the Long Range Plan. In addition, Phil Markle of LACSD expanded his efforts from our SoCal region and synthesized guidelines for other regional chapters of SETAC North America facilitating participation within State and Regional Science Fairs. We should be very proud of these accomplishments which were recognized by the SETAC North American Board of Directors. Please join me in congratulating their efforts, and we hope that you too will follow their example and get involved. SETAC is predominantly based upon volunteerism, so if you have an idea or a heart for a particular issue, please join us. We look forward to seeing you at either the Spring Dinner Meeting or Annual Meeting this year.

All the best for 2006,

Dan



## **Meet the Board**

**Dr. Susan Gardner**

**Susan Gardner, Academic Representative**

I'm originally from North Carolina, where I got my M.S. degree in Toxicology at North Carolina State University. In 1991, I moved to Seattle to earn a Ph.D. in Fisheries from the University of Washington and conduct a postdoc with the Environmental Chemistry Division of NWFSC, NOAA. On a cold rainy day in

February, 1996, I saw an announcement for a Coastal Ecologist faculty position with a U.S. study abroad program in Mexico called The School for Field Studies (SFS). The job description caught my eye because it included field work assessing the effects of contaminants on local fisheries. The salary was low but the vacations were long, so I sent a resume. Eight months later, I sold my house, packed up my dog, bought a lot of sunscreen and moved to Baja California. I taught at SFS for 3 years, and then accepted a position as a research professor for the Mexican Federal government at the Northwest Center for Biological Research (CIBNOR) in La Paz. At CIBNOR, I work within the Environmental Planning and Conservation Program, teaching and advising graduate students on projects related to the effects of contaminants on marine species. Much of my work has focused on the use of sea turtles as sentinel species for assessing the health of marine ecosystems. I serve as the leader of CIBNOR's Ecotoxicology Strategic Project and on the Board of Directors of the State Sea Turtle Protection and Conservation Committee. I have been involved with SoCal SETAC since 2003, with a commitment to bringing more interaction between researchers in the U.S. State of California and the Peninsula of Baja California, Mexico.



## **SETAC NA 26<sup>th</sup> Annual Meeting – November 2005: Summary**

**Contributed by Jeff Armstrong**

The 26<sup>th</sup> Annual SETAC North America Meeting was held in Baltimore, Maryland, from November 12-16, 2004 at the Baltimore Convention Center. SETAC NA yet again provided a high quality meeting. There were numerous short courses on topics ranging from statistics and modeling to ecological risk assessment to advanced mass spectrometric analysis for endocrine disruptors in the environment. The technical program included approximately 100 platform sessions, interactive poster sessions, and about 300 posters daily. No SETAC NA meeting would be complete without a great social program, which this year boasted events, including a night at the National Aquarium, the Student-Mentor Dinner, and the perennial Sunday Evening Vendor's Reception.

Typically, SoCal SETAC is well represented in both attendance and participation at the national meeting and this year was no exception. Presentations were made in numerous platform and poster sessions ranging from TIEs to Complex Mixture Toxicity to Endocrine Disruption in Fish. Platform and poster presenters are too numerous to list here. A complete list of presenters and titles of presentations and posters will be available on the website soon.

In the registration area there were backboards for regional chapters to display a poster highlighting chapter accomplishments and benefits for new member recruitment purposes and to see what other chapters are doing. Ken Schiff from SCCWRP took responsibility for providing the poster, which looked great! We send a special thanks to Valerie Raco-Rands at SCCWRP for her work producing such a great advertisement of our organization. Phil Markle (Los Angeles County Sanitation Districts) and SoCal SETAC President Dan Schlenk (University of California, Riverside) contributed to the next generation of environmental professionals as student mentors.

On Monday, Carlita Barton (Los Angeles County Sanitation Districts) and Jeff Armstrong (Orange County Sanitation District) represented SoCal SETAC in the Regional Chapter Booth. This presented the opportunity to discuss our chapter with potential members and to compare our activities with other chapters whose members stopped by to say hello.

On Wednesday, a one-hour SoCal SETAC chapter lunch meeting was held for the purpose of updating members and to inform potential members of chapter activities and upcoming events. Among the topics discussed were the March 2006 dinner meeting, chapter involvement with high school science fairs around southern California, and the 2006 SoCal SETAC Annual Meeting, which will be held in conjunction with the Southern California Academy of Sciences Annual Meeting at Pepperdine University on May 12-13, 2006. The meeting was attended by about 20 folks. A special thanks goes out to Mary Ann Rempel for volunteering to provide the pizza!

Chapter activity wasn't confined to the convention center. The inner harbor area of Baltimore hosts an abundance of restaurants, pubs, and activities, such as the National Aquarium. Areas such as Fells Point and Little Italy were just a short water taxi ride away.

Baltimore is also the location of famous Fort McHenry. It was the battle for Baltimore and bombing of Fort McHenry that inspired Francis Scott Key to write the Star Spangled Banner. It is a short side trip, but one well worth it if you get the chance to go back to Baltimore. Wednesday night saw the annual SoCal SETAC happy hour happening at SETAC NA. This year we met at the Wharf Rat, a bit of old England here in the states. In addition to some great microbrews, they had top drawer bangers and mash and sheppard's pie!

The 27<sup>th</sup> Annual SETAC NA Meeting will be in Montreal, Quebec, Canada, from November 5-9, 2006. This should prove to be a very good venue, with excellent facilities and accommodations, and plenty of after-hours fun and cultural diversity. See you in November in Montreal!



## UPDATE OF EDC STUDIES IN COASTAL CALIFORNIA

On December 13, a meeting was held at the Orange County Sanitation District to summarize various studies which have been evaluating the impacts of EDCs on Marine Biota of the Southern California Bight. Presentations were made by Daniel Schlenk from the University of California Riverside, Doris Vidal from the Southern California Coastal Water Research Project and Kevin Kelly from the California State University at Long Beach.

### *Previous EDC Studies*

Dr Schlenk began the session presenting data from several studies done in collaboration with CSULB, OCSD and other POTWs in the Southern California Bight. In studies initiated during the summer of 2000, Roy et al., (2003) observed widespread exposure to estrogens within 3 flatfish species without correlation to the abundance of three species examined. In subsequent studies, Rempel *et al.*, (2005) continued to observe evidence of exposure to estrogenic compounds in Hornyhead Turbot (HT) and a relationship between plasma estradiol (E2) levels and sperm DNA damage. Rather than an expected feminization of populations, a trend toward masculinization was observed as indicated by gender ratios and significantly higher GSI in males

versus the reference station. These results were consistent with previous studies showing vitellogenin expression in male flatfish, but no alteration in overall flatfish abundance at the sampled sites. To determine the potential cause of the estrogenic activity observed throughout the past 3 years, Schlenk *et al.* (2005) evaluated estrogenic or feminizing activity of marine sediments from the Southern California Bight by using *in vivo* vitellogenin (Vtg) assays. Sediments were collected near wastewater Los Angeles (LACSD) and Orange (OCSD), and the city of San Diego (SD) outfalls. California Halibut (CH) (*Paralichthys californicus*) as well as rainbow trout, were exposed to sediments for 7 days or injected with sediment extract over the same period. Estradiol (E2) concentrations were found in all collected sediments and ranged from 1-90 µg/kg with the concentrations been the highest at SD. Alkylphenols and alkylphenol ethoxylates were observed in all sediment samples but were highest near the OCSD outfall where concentrations of nonylphenol were 3200 ng/g. After 7-day sediment exposures to sediments from the outfalls and the proposed reference site, measurable expression of vitellogenin (Vtg) was observed in male CH compared to animals exposed to reference. *In vivo* estrogenic/feminizing activity was highest in the extracts of LACSD sediments compared to SD or OCSD sediments. Fractionation studies of the LACSD sediment extract failed to demonstrate relationships between Vtg expression and E2 which was observed in the whole extract (2.9 ng/g). However, the sunscreen agent, oxybenzone was observed in active fractions. These results indicated estrogenic compounds other than classic natural and xenoestrogens may contribute to estrogenic activity of sediments from the Southern California Bight.

Dr Vidal presented an update of studies which were initiated to develop a microarray for HT. Such a tool would be utilized to evaluate the effects of EDCs on the expression of multiple genes and help understand the mechanism of action of compounds. These studies were done in collaboration with Dr. Michael Baker from UC San Diego and Kevin Kelly from CSULB Several candidate genes were identified and placed upon the support matrix and evaluated using hepatic RNA from fish collected from the Bight 03 regional monitoring program. Several of these animals exhibited elevated plasma Vtg and E2 concentrations. Qualitative changes in expression were observed in some of the animals. Future studies will attempt to conduct dose-response

studies to quantify the changes and provide additional gene sequences for evaluation.

Dr. Kelly presented data evaluating the impacts of the OCSD and LA city outfalls on insulin-like growth factor-1 binding protein, plasma cortisol and steroid levels in HT. His results indicated significant increases of plasma E2 in HT from LA city compared to OCSD and with a grant from California SEAGRANT, he will attempt to evaluate the potential for trophic transfer of estrogenic compounds to flatfish.

Joe Gully from LACSD provided a potential framework for collaboration between POTWs, SCCWRP, and the various academic institutions involved (CSULB, UCSD, and UCR). Creation of an advisory board was discussed to further address this issue and organize specific studies necessary to understanding the cause and effects of EDCs in marine biota of Southern California.

## REFERENCES

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

## SoCal SETAC Board of Directors

<b>Board Member (2004-2006)</b>	<b>Mary Ann Rempel</b> UC Riverside <a href="mailto:mirwi002@student.ucr.edu">mirwi002@student.ucr.edu</a>	<b>Board Member (2005-2007)</b>	<b>Susan Gardner</b> CIBNOR <a href="mailto:Sgardner04@cibnor.mx">Sgardner04@cibnor.mx</a>
<b>Board Member (2004-2006)</b>	<b>Howard Bailey</b> AMEC Earth and Environmental <a href="mailto:howard@nautilusenvironmental.com">howard@nautilusenvironmental.com</a>	<b>Board Member (2005-2007)</b>	<b>Hunter Lenihan</b> UC Santa Barbara <a href="mailto:lennihan@bren.ucsb.edu">lennihan@bren.ucsb.edu</a>
<b>Board Member (2004-2006)</b>	<b>Scott Johnson</b> Aquatic Bioassay and Consulting Labs., Inc. <a href="mailto:scj_aqua@pacbell.net">scj_aqua@pacbell.net</a>	<b>Board Member (2005-2007)</b>	<b>Erika DeHollan</b> Loyola Marymount University <a href="mailto:edehollan@lacsds.org">edehollan@lacsds.org</a>
<b>Board Member (2004-2006)</b>	<b>Ken Schiff</b> SCCWRP <a href="mailto:kens@sccwrp.org">kens@sccwrp.org</a>	<b>Board Member (2005-2007)</b>	<b>Kathy Rose</b> Santa Ana Regional Water Quality Control Board <a href="mailto:krose@waterboards.ca.gov">krose@waterboards.ca.gov</a>



# Southern California SETAC



**Invites You to Attend**  
A Dinner/Speaker Meeting Entitled

## Probabilistic Risk Assessment of Contaminated Sediments

Presented by

***Jeff Stevens, PhD***  
US Army Corps of Engineers  
(Waterways Experiment Station)  
Vicksburg, Mississippi

**March 2, 2006 – 6:00 pm**  
**Waters Restaurant**  
**4615 Barranca Pkwy, Irvine, CA 92714**

<i>Name:</i>		<b>Registration Information (Circle One)</b>		
<i>Company/ Institution:</i>		<i>Membership Status</i>	<i>Received before 02/16</i>	<i>On Site</i>
<i>Address:</i>		<i>SoCal SETAC Member</i>	\$ 25	\$ 30
<i>Phone/ Fax:</i>		<i>Non-Member (Includes membership)</i>	\$ 35	\$ 40
<i>E-Mail:</i>		<i>SoCal SETAC Student Member</i>	\$ 20	\$ 25
<b>Meal Selection (Circle One)</b> All meals include salad, bread, dessert and soft drinks, tea, and coffee  <i>Angel Hair Pasta w/ Tomato Sauce</i>  <i>Chicken Hawaiian</i>  <i>Halibut</i>		<i>Non-Member - Student (Includes student membership)</i>	\$ 25	\$ 30
		Send Check or Money Order Made Out to <b>SoCal SETAC</b> to:		
		<b><i>Kat Prickett</i></b>  SoCal SETAC Secretary P.O. Box 1619 San Pedro, CA 90733		





# FIRST CALL FOR PAPERS

**ABSTRACT DEADLINE: 10 APRIL 2006**

## Southern California Society of Environmental Toxicology and Chemistry 2006 Annual Meeting

12-13 May 2006 Pepperdine University Malibu, CA

The Southern California Society of Environmental Toxicology and Chemistry (SoCal SETAC) in conjunction with the Southern California Academy of Sciences (SCAS), announces the first call for papers to be presented at the 2006 Annual Meeting. The Board of Directors is busy putting together a strong technical program including plenary presentations, and various platform and poster sessions related to environmental toxicology and chemistry. Keep in mind that all presented abstracts will be published in an upcoming issue of the SCAS journal, *Bulletin on Southern California Science*. More details on these events will be made available soon, but we need your help to ensure the success of the meeting.

We are requesting abstracts for platform or poster presentations at the conference. Any primary research, case study, monitoring program data, or policy-based papers related to environmental toxicology and chemistry are acceptable. We also encourage presentation of student proposals and research at the meeting by offering a Best Student Poster and Platform Award. **Every student presenter will receive a free 2006 SoCal SETAC membership and the best student poster and platform presentations will be awarded \$100.** This meeting is also a great opportunity to present information from the SETAC Annual Meeting to those who could not attend or prepare for next years meeting.

The abstract deadline is April 10, 2006, and the format for submission is as follows. The abstract, including the authors and title, are not to be longer than 300 words. Longer abstracts may be edited. At the top of the file, provide the name, address, phone, FAX, and e-mail information of the presenting author. Then skip a line and list your preference for a platform or poster presentation and whether this paper is to be judged for the Best Student Paper Award. Skip a line and type the title of the abstract in bold using title case. Then list the authors, last name first, then the first and middle initial, and place an asterisk (\*) after the name of the presenting author. Include the name, city, and state of the institution for each author but not the department or street address. Without skipping a line, begin the text of the abstract. An example of the correct submission format can be found on the next page. Abstracts should be submitted as e-mail attachments or on disk as a Windows-based WordPerfect (\*.wpd) or Microsoft Word(\*.doc) file.

### **Please note: new submission contact!**

Send the files to Phil Markle, LA County Sanitation Districts by e-mail to [lwiborg@sandiego.gov](mailto:lwiborg@sandiego.gov). The presenting author will be notified of acceptance status within two weeks of receipt.

Needless to say, the SoCal SETAC 2006 Annual Meeting promises to be an exceptional educational and social experience for everyone in attendance. We look forward to and thank you in advance for your contribution.



# FIRST CALL FOR PAPERS



## Southern California Society of Environmental Toxicology and Chemistry 2005 Annual Meeting

12-13 May 2005 Pepperdine University Malibu, CA

### Example of correct abstract format

Philip J. Markle  
County Sanitation Districts of Los Angeles  
San Jose Creek Water Quality Laboratory  
1965 Workman Mill Road  
Whittier, CA 90601  
T: 562-699-0405, ext. 3055  
F: 562-695-7267  
E: pmarkle@lacsds.org

My preference is a PLATFORM presentation.  
I do not wish to be judged for the Best Student Paper Award.

#### **Application of the Pearson Product-Moment Correlation for Evaluating Whole Effluent Toxicity Test Concentration Response Relationships.**

**Phil Markle\*, Joseph Gully, and Carlita Barton. County Sanitation Districts of Los Angeles, Whittier, CA.**

The dose response relationship has been characterized as the most fundamental and pervasive concept of toxicology. This concept assumes a causal relationship between the dose or concentration of a substance and the measured response. This has been recognized in the latest USEPA chronic bioassay testing protocols through the requirement to evaluate the concentration-response relationships of all NPDES multi-concentration tests. Although the protocols provide complicated and subjective guidance on evaluating dose response relationships, the SETAC NA Expert Advisory Panel for Performance Evaluation and Data Interpretation has recommended the use of the Pearson product-moment correlation statistic in their Wild, Wild, WET short course. The Pearson product-moment correlation is a relatively simple and objective analysis that establishes whether a significant relationship exists between concentration and response. The two methods were compared by evaluating the dose responses from 149 NPDES reported chronic toxicity tests using both the EPA protocol recommended guidance and the Pearson product moment correlation. The USEPA and Pearson product-moment correlation typically agreed in terms of establishing an appropriate concentration response relationship prior to identifying a sample as being toxic. Results indicate that the two methods were in agreement in 93% of the tests. However, in 3% of the tests, the USEPA guidance identified the sample as "toxic" while the Pearson product-moment correlation did not identify a significant concentration response. Conversely, 4 % of the tests identified a significant concentration response curve but would have been considered "non-toxic" according to USEPA guidance.

**ABSTRACT DEADLINE: 10 APRIL 2005**



# APPLICATION FORM

## Southern California Society of Environmental Toxicology and Chemistry

### MEMBERSHIP APPLICATION FORM

Please print

<b>Name:</b>		<b>Affiliation:</b>	
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Check if any new contact information is provided above.

#### Membership Type (Check one):

- Membership Renewal                       New Member

#### Category of Employer (Check One):

- Government                       Academic  
 Consultant                       Industry/Business  
 Student                       Other \_\_\_\_\_

#### Technical Background (Check all that apply):

- Atmospheric Science       Earth Science               Health Science  
 Biology                       Ecology                       Toxicology  
 Chemistry                       Engineering               Other \_\_\_\_\_

#### Degree(s) earned:

- B.A./B.S.       M.A./M.S.       Ph.D.       P.E.       Other \_\_\_\_\_

#### Class of Membership\* (check one):

- Active Member / Regional Member              \$20.00 per year  
 Student Member                                      \$10.00 per year

\***Active Member** and **Regional Members** are qualified professionals who share the stated purpose of the Chapter and who have education, training, research, or applied experience in environmental toxicology and/or chemistry. **Active Members** must also be members of SETAC NA (North America). **Student Members** are individuals who share the stated purpose of the Chapter and are students showing promise of becoming qualified for Regional or Active status at a later date.

Unfortunately, SoCal SETAC does not have the clerical staff to send reminder notices or pro-rate dues for partial year membership. New member dues paid before September 1<sup>st</sup> of the current calendar year will apply to the current membership cycle.