



SoCal SETAC NEWS



Society of Environmental Toxicology and Chemistry
Southern California Chapter

Volume 11, Issue 3

www.socalsetac.org

August 2004

In This Issue:

- *President's Corner*
- *Annual Meeting Recap*
- *Meet The Board*
 - *Chris Marwood*
 - *Lan Wiborg*
- *Calendar of Events*
- *Resource for Teachers*
- *Fall 2004 Dinner Meeting Announcement*

email addresses is provided in every newsletter.

I would also like to take this opportunity to express my immense appreciation for the outgoing board members: Paul Krause (BBL Sciences), Cherlynn Seruto (U.C. Riverside) and Shelly Magier (U.C. Santa Barbara/AMEC Earth and Environmental), whose contributions have improved the quality of our service to members and increased our visibility in the scientific community. I would especially like to thank outgoing Chapter Secretary Karen Riveles (U.C. Riverside/Parkinson's Institute) for sharing her gift of organization and efficiency with us, and for being a great friend.

I am also pleased to welcome several new board members: Howard Bailey (AMEC Earth and Environmental), Erika DeHollan (Loyola Marymount University), Mary Ann Irwin (U.C. Riverside), Scott Johnson (Aquatic Bioassay and Consulting Laboratories, Inc.), Chris Marwood (U.C. Santa Barbara), and Ken Schiff (Southern California Coastal Water Research Project), who have graciously volunteered to share their multi-disciplinary talents in support of the chapter's goals and activities.

Looking ahead, it is my hope that the Chapter will continue to serve as a forum for individuals and institutions engaged in the study of environmental problems, management and regulation of natural resources, education, research and development, and manufacturing and distribution in Southern California. With three chapter members currently serving on the SETAC NA Educational committee (Steve Bay, Phil Markle, and myself), one member serving on the SETAC NA board of directors (Dan Schlenk), and another member serving as the North America editor of SETAC Globe (Chris Marwood), the spirit of volunteerism which has flourished in So Cal SETAC has clearly expanded to the continental level. I encourage all members to participate in chapter activities and utilize the board members as resources. Here's to a great 2004-2005, and I look forward to seeing everyone at the upcoming Fall 2004 dinner meeting!



President's Corner....

LAN WIBORG

SoCAL SETAC PRESIDENT

Congratulations to Steve Bay and all So Cal SETAC board members for hosting an excellent 2004 annual meeting in San Diego! Many thanks to the conference staff at Point Loma Nazarene University for granting us facilities with breathtaking views of the Pacific Ocean and the terrific hospitality. On behalf of all meeting participants, I would also like to extend a special thanks to the short course instructors, plenary speakers, and presenters for sharing their expertise. I would also like to recognize the tremendous efforts of many volunteers, including Doris Vidal, Darrin Greenstein, Rebecca Hagstrom, and Diana Young. Of course, the meeting's success was secured by the generous support from our corporate sponsors: AMEC Earth and Environmental, Aquatic Bioassay and Consulting Laboratories, Inc., BBL Sciences, Copper Development Association, Inc., MEC Analytical systems/Weston Solutions, and Water Environment Research Foundation. Thank You!

In this newsletter you will find a summary of the annual meeting by Phil Markle, who has also assumed the responsibility for coordinating the 2005 annual meeting. If you have any ideas on meeting program (plenary, short courses, social), please feel free to contact Phil or any of the board members. A list of the board members'

SoCal SETAC 2004 Annual Meeting

By Phil Markle, Past President

The 2004 SoCal SETAC Chapter annual meeting was recently hosted on May 21 and May 22, 2004 at Point Loma Nazarene University in San Diego. The meeting started off on Friday, May 21st with two well attended short courses, "Predicting the Toxicity of Metals to Aquatic Organisms: An Introduction to the Biotic Ligand Model" and "The Southern California Coastal Index of Biotic Integrity: A Tool for the Protection of Aquatic Life Beneficial Uses" with over 50 attendees combined! I would like to thank the instructors, Paul Paquin and Robert Santore of Hydroqual and Dave Gibson of the San Diego Regional Water Quality Control Board as well as Steve Bay and Lan Wiborg their work organizing these courses. The Friday evening



Phil Markle makes Introductions.

festivities included an amphibious tour of San Diego followed by a dinner at Miguel's Cocina in Point Loma. Saturday, May 22nd kicked off with a terrific plenary dealing with science and policy considerations of site specific objectives. Plenary speakers included Gary Wolinski, Environmental Protection Agency Region IX, Paul Paquin, Hydroqual, Ashli Desai, Larry Walker Associates, and Robert



Gary Wolinski from USEPA opens the SSO plenary.



Ashli Desai from Larry Walker and Associates talks about Ammonia SSOs.

Santore, Hydroqual. The remainder of the meeting included a poster session and two concurrent platform sessions comprising 27 presentations on a wide range of environmental topics dealing with everything from organochlorine tissue concentrations in South African Great White Sharks to potential effects on marine communities as a result of flyash exposure from recent southern California wild fires. Attendance on Saturday exceeded 70!



Student travel award winners: (Left to Right: MaryAnn Irwin, Ola Bawardi, Julianne Kalman, Kelly Thrippleton).

Five student travel awards totaling nearly \$500.00 were presented to SoCal SETAC student members Julianne Kalman, Kelly Thrippleton, Mary Ann Irwin, Ola Bawardi, and Cherlyn Seruto. The Best Student Platform Award (\$100.00) was given to Julianne



Wendy Rose displays her award-winning poster.

Kalman of UCLA for her platform presentation examining fish parasites associated with wastewater discharges and implications on host fish infestation and stress. Best Student Poster Award (\$100.00) was given to Wendy Rose of UC Santa Barbara for her poster examining cadmium impaired growth of larval topmelt using otolith markings.



Luke Penn-hall showcases his Riverside Unified School District Science Fair Award Winning Poster.

A big thank you is also in order for the 2004 SoCal SETAC annual meeting sponsors for their generosity and support of this meeting. They include the Copper Development Association, Blasland, Bouck, and Lee, Inc (BBL), MEC Analytical, AMEC, Aquatic Bioassay and Consulting Laboratories, Inc (ABC), and the Water Environment Research Foundation (WERF). Please look for these sponsors' advertisements in this and upcoming newsletters.



Steve Bay receives the Marrison Gaummond Memorial Award from Monica Ball and Jeff Armstrong.

Steve Bay, as Past President and the 2004 meeting organizer, was presented with the Marrison Gaummond Memorial Award in recognition of his service to SoCal SETAC over the years as Board Member, Vice President, President and Past President.



Spectators view and discuss results of an excellent poster session.



Meet the Board

Christopher Marwood, Ph.D.

*Donald Bren School of Environmental
Science & Management*

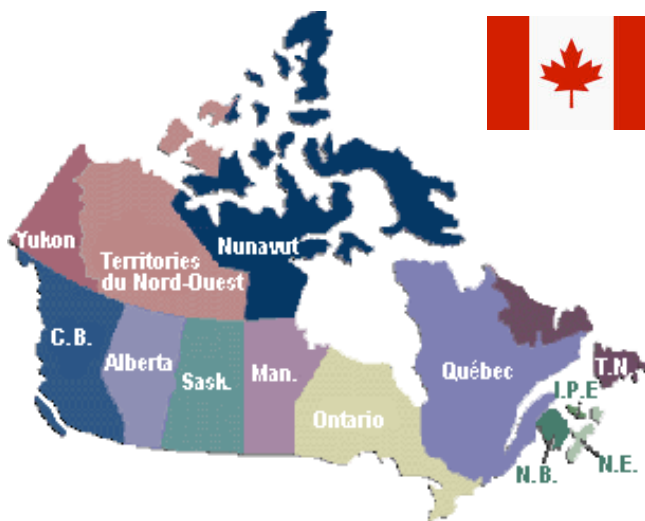
U.C. Santa Barbara



Being relatively new to California, I am still awed by the natural beauty of this state on a daily basis. The sheer number of different biomes you encounter as you move west to east is impressive. It's pretty darn neat to be able to surf on the coast in the morning, drive across the desert, and go skiing at Mammoth that afternoon. I suspect that many native Californians take this for granted, but as someone who is not from this state and has worked in other more geographically monotonous locations, let me assure you that California is one of the more beautiful locations in which to live and work. The mid-west has its lovely parts, too, but for variety in landscape, it's hard to beat California.

I am Canadian. Most people notice this once they talk to me for a bit. I suppress the use of "eh" at the end of my sentences but most people still detect the subtle difference in the way I pronounce "house" or "about" (but don't tell a Canadian that he says "aboot" because we have boots in Canada and we pronounce them differently than "about"). Canada is really quite similar to California in its industries, diversity, and culture, if

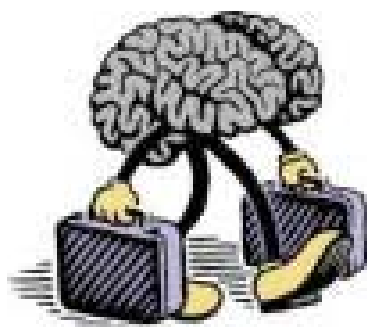
not its geography, but the minor differences are interesting and make for good conversation. For example, many people don't know that Canadians spell some words differently. I'll give you a dose of Canadiana by following Canadian spelling rules in this article.



I grew up in southern Ontario, roughly in the centre of Canada. I attended university in Waterloo and Guelph (if you find Guelph hard to say out loud, don't worry, most people do unless they are quite drunk, and then, oddly enough, it rolls off the tongue as easily as asking the waitress for the cheque). This area of the province suffers from an unfortunate combination of hot, humid, sticky summers and slushy, wet winters characterized by gale-force winds that cut right through your toque. You can always identify the first-year "frosh" students on campus because they carry umbrellas, which they soon discover are quite useless against horizontal rain. I am convinced this cursed wind is primarily a result of early farmers removing all the trees in southern Ontario and replacing them with corn; cornfields in winter have a very limited ability to retard the wind that blows across the Great Lakes in the winter.

Regardless of the less-than-ideal location with respect to the weather, the Universities of Waterloo and Guelph are fine institutions that represent the best aspects of the public education system in Canada. I was trained as an aquatic toxicologist, working with Drs. Keith Solomon and Bruce Greenberg. I did my doctoral research on photosynthesis as a biomarker of effects of polycyclic aromatic hydrocarbons (PAHs) and UV radiation on aquatic plants. I worked mainly at the outdoor mesocosm facility at U of G, and on Lake Erie looking at impacts of UV on phytoplankton. While I found aquatic plants like *Lemna gibba* to be an interesting system with which to work, I was envious of

the other students who could eat their control organisms. (I'll always be grateful to Sarah Butler, now doing doctoral research in entomology at UCR, for sharing her "low-dose insecticide" burgers from her research cows – the special spicy flavour outweighed the modest CNS damage, in my opinion.) Ironically, and not entirely because of the permethrin burgers, I stopped eating meat around this time, but nevertheless, when Jim Oris at Miami University offered the opportunity of a post-doctoral fellowship in his lab working with rainbow trout, I happily packed up and moved to Oxford, Ohio. In doing so, I became part of the so-called Canadian Brain Drain.



The Brain Drain is the movement of highly trained professionals from Canada, where they attended university largely at the expense of the taxpayer, to the U.S., where they earn a higher wage than they would if they stayed in Canada. Many

Canadians lament the fact that so many Canadian-trained brains are being drawn away by their southern neighbors, but as a beneficiary of this phenomenon I must say it is nice to earn a wage that makes 10 years of post-secondary education almost seem worthwhile. I've heard that the Brain Drain falls mainly in the plains, but my friends in Saskatchewan can't confirm this.

In 2001, I was offered a position as an assistant professor at the Donald Bren School of Environmental Science & Management at UCSB. In my research, I focus on the effects of phototoxicity from PAHs and UV radiation on fish. Specifically, I am interested in whether the transcriptional response of fish exposed to PAHs can be used as a biomarker of exposure/effects. I do some work around Lake Tahoe, which has only moderate PAH contamination but high UV. During "June Gloom," when the marine layer obscures the sun in Santa Barbara, what better place to work than Lake Tahoe? The Tahoe area is home to the Tahoe Research Group (part of UCD), which is an excellent resource for field research, and it has great coffee shops (which I find are necessary to get any research done in the morning). If you are ever in Truckee on a Wednesday evening, take in the Concert in the Park for a dose of the colourful locals. My wife Jenni and 1.5-year-old daughter Fern sometimes accompany me to Tahoe to help with sampling. I had hoped Fern would help with some of the

fieldwork, but so far, I have been disappointed by her poor performance recording radiometry data and her almost nonexistent fish dissection skills. Though she isn't a productive field worker, she is darn cute.

I have been involved in SETAC since 1996, both at the regional level as a member of the Laurentian Chapter in Ontario and the Ohio Valley Chapter, and at the national level, serving on the editorial board for *ET&C*, and now as the North America editor of the *SETAC Globe*. The best part of being involved with SETAC is the opportunity to meet interesting new people, and I look forward to meeting those of you I haven't met yet through serving on the SoCal SETAC board.



Joining SoCal SETAC Through SETAC North America?

Some problems have come to our attention as a result of joining or renewing SoCal SETAC membership through SETAC NA.

*If you joined or renewed your
SoCal SETAC membership
through SETAC NA,
please contact:*

Brian Hester
SoCal SETAC Secretary

Brian.Hester@WestonSolutions.com

Meet the Board –Round II

Lan Wiborg, M.P.H.

City of San Diego



My first impression of the United States was the smell; on the way from San Francisco International Airport to my new home, I was struck by the scents of the fog, sea, and, of course, patchouli oil. At 13 years of age, I was too proud to show my quasi-new family my assorted reactions to this new world, so I acted with an ill-practiced teenage nonchalance and prayed to the almighty that I would: (A) learn to speak English before attending school in 10 days, (B) find a big, friendly dog in my new home, or (C) wake up the next morning back in my father's home in Taiwan.

Much to my chagrin, my fairy godmother was on sabbatical and I didn't get any of my wishes.

To further complicate matters, my new family was not as ready for an addition as everyone had hoped. So as soon as mother and I could convince the Chinese owner of the neighborhood meat shop that I could handle a cleaver, boning knife, and cash register, I became a contributor to the Social Security System and began quartering chickens and deboning legs of lamb for \$3.00 per hour.

Taiwan

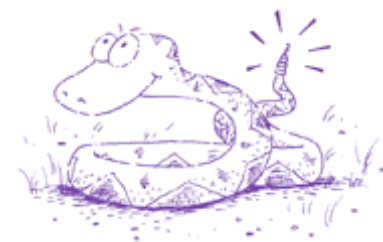
Area: 36,174 Sq
Km (13,967 Sq Mi)

Est. 2000
Population:
22,069,700



Away from the chopping blocks, life in Berkeley was relatively tranquil. My baby brother and I spent many evenings learning English from the likes of Big Bird and Kermit the Frog. Furthermore, I found sufficient inspiration from Ms. Piggy to try out for a couple of interscholastic sport teams.

Emboldened by my experience at the shop, and anxious to increase my earning power before entering college, I became a summer cook and pastry chef for the City of Berkeley's Tuolumne Family Camp near Yosemite after graduating from Berkeley High School. Cooking and baking for 250 (plus or minus 50) adults and children was a constant challenge, and the occasional food-fight, rattle snake sightings, and bear-in-the-dumpster alerts were always good for camper-staff bonding. However, the summer came to an all-too-abrupt end, and I entered the UC Davis freshman honors' program.



In keeping with personal tradition, I became an employee of the university's student medical center, cashier's office, and intramural sports, before taking my first mid-term examination. As with most financially challenged students, time, money, and decent food were somewhat of a luxury and, as much as I enjoyed the

classes and being a member of the intercollegiate rowing team, I couldn't wait to return to my home in the forest.



Wildlife in harm's way

Toward the end of my second summer at the Camp, thunderstorms touched off several major forest fires in and around Yosemite. As guests evacuated, professional firefighters, convicts, and Native Americans from Western U.S. rushed in to battle the fires. I stayed on to cook for the fire crews stationed at Camp Mather (operated by the City of San Francisco). It was a round-the-clock operation, and many of the firefighters were often too exhausted to eat. Medical evacuations were frequent and invariably heart-wrenching, whether they involved humans or wildlife.

The fires were mostly contained by the time I returned to school, but the experience sparked my interest in emergency medicine. So, naturally, I acquired a couple more jobs, including being a teaching assistant at the School of Medicine's human anatomy laboratory. Aside from assisting students with proper identification of anatomical structures, my responsibilities also included preparing prosections and presenting case studies. I also obtained certifications as an emergency medical technician (EMT) and a health and safety instructor for the American Red Cross. Subsequently, I worked as an EMT in various settings, including a stint with the Haight-Ashbury Free Clinic's Rock Medicine Program, and have continued to teach for the ARC.



As I approached graduation, the thought of continuing on to medical school became progressively less appealing. Instead, I

became more interested in research methods, statistics, and epidemiology. While investigating career and graduate education options, I was introduced to Dr. Jeff Miller of AQUA-Science, and the world of toxicity testing. I worked for Jeff and partner Mike Miller for the next 5+ years, and became familiar with a wide range of bioassays, data management and analysis, quality assurance, Phases I-III TIEs, analytical chemistry, and report preparation.

To further my interest in environmental and human health issues, I moved to San Diego to pursue a master's degree in public health at San Diego State University, and joined the City of San Diego's ocean monitoring team in 1997. Having been a member of NorCal SETAC, I was very interested in the activities of So Cal SETAC and became a director in 1998. Under the leadership of Marilyn Schwartz and Joe Gully, one of the goals of the chapter was to obtain State and Federal non-profit status, which became one of my responsibilities as the chapter treasurer from 1999-2002.

In 2003, I assumed the position of So Cal SETAC Vice-President, and became all too familiar with the fine art of newsletter production. 2004, as they say, is history in the making...

Additional activities:

Fishing, cycling, miscellaneous sports, math and reading tutor for 5th and 6th graders at Sequoia Elementary School (San Diego, CA), and QA supervisor/field leader for the San Diego Stream Team.



CALENDAR OF EVENTS

Contributed by Daniel Schlenk

September 2004 Meetings

4th World Water Congress and Exhibition. 19-24 September 2004, Palais de Congres, Marrakech, Morocco. . www.iwa2004marrakech.com

Environmental and Subsurface Science Symposium 2004. *Environmental and Subsurface Science Applied to Energy, Nuclear, and National Security Research.* 20-22 September 2004. The Davenport, Hotel, Spokane, Washington, USA. For more information contact

BethAnn Melad, PO Box 587, Meridian, Idaho 83680, T 208 288 0290 or 800 345 8793, F 208 288 0291, rsvp@meetingsystems.com. Registration information available at www.b-there.com/breg/esss04.

October 2004 Meetings

Water Environment Federation. 2-6 October 2004. New Orleans, Louisiana, USA. More information available at www.wef.org.

Second Annual Meeting of the SETAC-GLB and GDCh - Environmental Chemistry and Ecotoxicology Section. Crossing Borders: Molecular Mechanisms and Ecosystem Processes. 6 - 8 October 2004. Aachen, Germany. Sponsored by the Society of Environmental Toxicology and Chemistry – German Language Branch (SETAC-GLB) and Society of German Chemists (GDCh) - Environmental Chemistry and Ecotoxicology Section.

VIII Brazilian Congress of Ecotoxicology. 17-20 October 2004. Praia Tur Hotel, Florianopolis, SC, Brazil. More information is available at www.ecotox2004.ufsc.br.

Soil Science Society of America. 31 October - 4 November 2004. Seattle, Washington, USA. More information available at www.soils.org.

November 2004 Meetings

SRA EA/ KOSET / SETAC AP Joint Conference on Risk Assessment and Management, 4 - 6 November 2004, SK Telecom Center, Ewha Womans University (Seoul, Korea). Theme: "Sharing Experience of Human and Ecological Risk Science and Management in Asia/Pacific Region". <http://www.koset.org>
<http://www.setac.org/asiapacific.html> or

Fourth SETAC World Congress "SETAC: 25 Years of Interdisciplinary Science Serving Global Society" 14-18 November 2004. The meeting will recognize more than 2 decades of SETAC members' contribution to environmental science, including landmark research on endocrine disruption, environmental impacts of metals, persistent organic pollutants (POPs) and more. <http://www.setac.org>

December 2004 Meetings

Ecological Risk Assessment Methods for Arid Environments A continuing education workshop and field trip to be held in conjunction with the **Society for Risk Analysis Annual Meeting** 8:00 am - 5:00 pm; Sunday, 5 December 2004 Wyndham Hotel & Resort, Palm Springs, California. http://www.neptuneandco.com/eecai_sra.htm.

Other 2005 Meetings

1st International Conference on Engineering for Waste Treatment: Beneficial Use of Waste and by-Products, 17-19 May 2005, Albi, France. ABSTRACT DEADLINE IS 15 SEPTEMBER 2004. www.enstimac.fr/heberges/wasteeng2005/

SOT 44th Annual Meeting. New Orleans, Louisiana, USA. Sponsored by the Society of Toxicology (SOT). ABSTRACT DEADLINE is October 3, 2004 www.toxicology.org



**SETAC: 25 YEARS OF INTERDISCIPLINARY
SCIENCE SERVING GLOBAL SOCIETY
1979 - 2004**

FOURTH SETAC WORLD CONGRESS

**14 - 18 NOVEMBER 2004
PORTLAND, OREGON USA**

RESOURCE FOR TEACHERS

Contributed by Lan Wiborg

A half-hour television special about watersheds and stormwater runoff is now being seen throughout the nation on The Weather Channel. Co-produced by the Environmental Protection Agency and The Weather Channel, "After the Storm" explores how polluted runoff threatens the nation's waters.

VHS copies of the "After the Storm" program are available free for education and communication purposes in classrooms, at conferences, etc. However, the tape should not be reproduced, distributed, broadcast or cablecast, without the express written permission of EPA. If you have any questions, please send them to EPA at weatherchannel@epa.gov. The VHS copies of "After the Storm" will include captioning so the program is accessible to those who are deaf or hard of hearing. To order, call the National Service Center for Environmental Publications (NSCEP) at 513-489-8190

or 800-490-9198 or send an e-mail to ncepimal@one.net (request "After the Storm" (VHS), EPA 840-V-04-001).



<http://www.epa.gov/weatherchannel>

The Proven Leader in Sediment and Water Quality Assessment

MEC
ANALYTICAL SYSTEMS

WESTON
SOLUTIONS

- ▶ Sediment Sampling & Testing
- ▶ Water Quality Monitoring Programs
- ▶ Ecological Risk Assessment
- ▶ NPDES/301(h) Permit Compliance
- ▶ Alternatives Analysis for Dredged Material Disposal
- ▶ Bioassay Testing
- ▶ Watershed Management
- ▶ Port & Harbor Environmental Compliance
- ▶ TIE/TRE
- ▶ Research & Development
- ▶ Regulatory Support & Policy Analysis
- ▶ Data Management & Analysis
- ▶ Stormwater Monitoring

Contacts: Dr. David Moore - David.Moore@westonsolutions.com
Brian Hester - Brian.Hester@westonsolutions.com

2433 Impala Drive
Carlsbad, CA 92008
(760) 931-8081

www.mecanalytical.com & www.westonsolutions.com

CONSULTANTS WITH FOCUS




BBL Sciences

FOCUSED ON OUR CLIENTS' MOST VISIBLE CHALLENGES

BBL has expanded our West Coast presence, adding offices in Long Beach (formally JSA Environmental), Santa Barbara, San Rafael, and Walnut Creek, CA, and an office in Seattle, WA. These offices join BBL's Irvine, CA office in order to improve the environmental and engineering services we provide to our West Coast clients.

BBL[®]
BLASLAND, BOUCK & LEE, INC.
engineers & scientists
www.bbl-inc.com

Corporate Headquarters - Syracuse, NY Offices Nationwide



AMEC Bioassay Laboratories

- ⊗ Marine and freshwater toxicity testing and monitoring
- ⊗ Toxicity Identification Evaluation studies
- ⊗ Method development research and application
- ⊗ Product evaluation studies and registration support
- ⊗ Stormwater monitoring and BMP evaluation
- ⊗ Marine and freshwater sediment testing
- ⊗ Risk assessment support
- ⊗ Sediment collection, characterization, and permitting



"Thank you for all of the cooperation and efforts you and your firm have extended to the department . . . it is a pleasure working with true professionals such as yourselves."

John A. Perry, P.E.
Director, Water Reclamation
City of San Bernardino Municipal Water Department

AMEC Northwest Bioassay Laboratory
5009 Pacific Highway East, Suite 2-0 • Fife, Washington 98424
253 922 4296 • Fax 253 922 4296

AMEC San Diego Bioassay Laboratory
5550 Morehouse Drive, Suite B • San Diego, California 92121
858 458 9044 • Fax 858 458 0943

AQUATIC BIOASSAYS
Freshwater or Seawater
Chronic or Acute
Highest Quality Results
Quick Turnaround

AQUATIC SURVEYS
Municipal or Industrial Surveys
Biological, Chemical and
Physical Oceanography
Competitive Pricing

AQUATIC BIOASSAY & CONSULTING LABORATORIES, INC.

29 North Olive Street Ventura, California 93001
(805) 643-5621 Fax (805) 643-2930

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 Dan Schlenk (Daniel.Schlenk@ucr.edu) for inclusion in the next issue of SoCal SETAC News.



SoCal SETAC Officers – Fiscal Year 2004-2005

POSITION	NAME & AFFILIATION	RESPONSIBILITIES
Past President	Philip Markle L.A. County Sanitation Districts pmarkle@lacsds.org	Advisor/Stand-in for President and Vice-President Program Committee Chair for SoCal SETAC Annual Meeting
President	Lan Wiborg City of San Diego LWiborg@sandiego.gov	National SETAC Liaison Board Agenda & Action Items
Vice-President	Daniel Schlenk UC Riverside 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	Brian Hester MEC Analytical hester@mecanalytical.com	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	Jeff Armstrong Orange County Sanitation District jarmstrong@ocsd.com	Maintains So Cal SETAC archives

SoCal SETAC Board of Directors

Board Member (2003-2005)	Jan Gan UC Riverside jgan@mail.ucr.edu	Board Member (2004-2006)	Mary Ann Irwin UC Riverside mirwi002@student.ucr.edu
Board Member (2004-2006)	Howard Bailey AMEC Earth and Environmental howard.bailey@amec.com	Board Member (2004-2006)	Chris Marwood UC Santa Barbara marwood@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 (2004-2006)	Vacant



Southern California SETAC



Invites You to Attend

A Dinner/Speaker Meeting Entitled

Use of Antioxidant Transcriptional Markers in Rainbow Trout in Sierra Nevada Sub-Alpine Lakes



Presented by

Christopher Marwood, Ph.D.

Assistant Professor

Bren School of Environmental Management - U.C. Santa Barbara

September 23, 2004 – 6:00 pm

Old Spaghetti Factory Restaurant

110 E. Santa Fe, Fullerton CA 92832

<i>Name:</i>	
<i>Company/ Institution:</i>	
<i>Address:</i>	
<i>Phone/ Fax:</i>	
<i>E-Mail:</i>	

<p>Meal Selection (Circle One) All meals include salad, bread, dessert and soft drinks, tea, and coffee</p> <p><i>Spaghetti w/ Tomato Sauce</i></p> <p><i>Lasagna</i></p> <p><i>Chicken Parmigiana</i></p>

Registration Information (Circle One)		
<i>Membership Status</i>	<i>Received before 09/16</i>	<i>On Site</i>
<i>SoCal SETAC Member</i>	\$ 18	\$ 23
<i>Non-Member (Includes membership)</i>	\$ 38	\$ 43
<i>SoCal SETAC Student Member</i>	\$ 15	\$ 20
<i>Non-Member - Student (Includes student membership)</i>	\$ 25	\$ 30
Send Check or Money Order Made Out to SoCal SETAC to:		
<p><i>Brian Hester</i></p> <p>SoCal SETAC Secretary C/O MEC-Weston Solutions, Inc. 2433 Impala Dr. Carlsbad, CA 92008</p>		