

APPENDIX C. WORKSHOP PARTICIPANT BIOPICS AND CONTACT INFORMATION

Dr. Clarissa Anderson
NRC Research Associate
NOAA, ESSIC/CICS University of Maryland
College Park, MD 20742
(301) 405-6568
clarissa@umd.edu

Dr. Anderson received her undergraduate degree in Biology and Art History at UC Berkeley in 1999 and a Ph.D. in Marine Science from UC Santa Barbara in 2007. Her dissertation focused on the dynamics of toxic *Pseudo-nitzschia* blooms in the Santa Barbara Channel under the direction of Mark Brzezinski, David Siegel, Raphael Kudela, and Libe Washburn. In 2004, she received a NASA Earth System Science Fellowship to investigate possibilities of remotely detecting *Pseudo-nitzschia* blooms in the SBC using a statistical rather than optical approach. As a National Research Council postdoctoral associate for NOAA, she is currently working on empirical habitat models for harmful algal blooms in the Chesapeake Bay in association with Christopher Brown. They are applying methods established for forecasting *Karlodinium micrum* blooms to the nowcasting and forecasting of *Pseudo-nitzschia* spp. blooms and potentially for *Microcystis aeruginosa* blooms in the future.

Dr. Claudia Benitez-Nelson
Associate Professor, Department of Geological Sciences
University of South Carolina
Columbia, SC 29205 (803)
777-0018
cbnelson@geol.sc.edu

Claudia Benitez-Nelson is an Associate Professor in the Department of Geological Sciences and Director of Undergraduate Studies in the Marine Science Program at the University of South Carolina. She received B.S. degrees in Chemistry and Oceanography from the University of Washington and a Ph.D. from the Woods Hole Oceanographic Institution/Massachusetts Institute of Oceanography Joint Program. She was a UCAR/NOAA Climate and Global Change Postdoctoral Fellow and a University of Hawaii SOEST Young Investigator. Her research focuses on understanding phosphorus biogeochemistry and mechanisms of water column particle formation and export using short-lived radionuclides and sediment traps. She has recently started investigating the export of particulate domoic acid from surface waters to the seafloor off the California coast. Claudia has conducted research in numerous environments in coastal and open ocean waters as well as the Great Lakes. In 2006 she received the AGU Early Career Award in Ocean Sciences. She currently serves as a member of the NSF Advisory Committee for Geosciences, as Associate Editor of *Marine Chemistry*, and as the Chemical Oceanography representative on the *Oceanography Society* Council. Known for her high energy and enthusiasm, she is heavily involved in education and outreach activities to increase minority participation in marine science.

Dr. Lilian Busse

Environmental Scientist
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
(858) 467-2971
lbusse@waterboards.ca.gov

Lilian Busse received her M.A. in Freshwater Ecology in 1993 from the Technical University Munich, Germany, and her Ph.D. in Aquatic Ecology in 1999 from the Technical University Berlin, Germany. From 2000–2002, she was a postdoctoral researcher at the University of California, Santa Barbara. From 2002–2006, Lilian Busse was working as a researcher at the Scripps Institution of Oceanography in La Jolla. Since 2006, she is working as an Environmental Scientist at the San Diego Regional Water Quality Control Board. Lilian Busse’s research focuses on freshwater, brackish and marine algae. She was working on the relationships between freshwater algae, grazers, nutrients and landuse in Southern Californian streams. At the Scripps Institution of Oceanography, Lilian Busse studied the biodiversity of diatoms and dinoflagellates from a 10 year time series at Scripps Pier, and was part of a multi-campus research grant studying *Pseudo-nitzschia* and *Alexandrium* along the Californian Coast. In 2005, she established the HAB monitoring program at Scripps Pier with funds from the Southern California Coastal Ocean Observing System (SCCOOS). In her current position, she is leading the freshwater periphyton committee for the Surface Water Ambient Monitoring Program (SWAMP), and is part of the Statewide Algae Work Group.

Dr. Mark Brzezinski

Chair, Interdepartmental Graduate Program in Marine Science
University of California Santa Barbara - Department of Ecology Evolution and Marine Biology
Santa Barbara, CA 93106
(805) 893-8605
brzezins@lifesci.ucsb.edu

Mark Brzezinski is a Professor of Biological Oceanography in the Department of Ecology Evolution and Marine Biology at the University of California, Santa Barbara. He received his Ph.D. in Biological Oceanography from the College of Oceanic and Atmospheric Sciences at Oregon State University and his Bachelors of Science degree in marine science From Southampton College of Long Island University. His research is focused on phytoplankton ecology with an emphasis on diatom silicon metabolism and the marine silicon cycle. His publications address issues of how silicon limitation affects the distribution and abundance of diatoms and their role in the ocean carbon cycle. His work spans a broad range of disciplines from paleoceanographic reconstructions of past patterns of diatom Si use, to studies of upper ocean silicon cycling in the modern ocean and to studies of diatom-dominated harmful algae blooms. He currently serves as the Chair of the interdepartmental Graduate Program in Marine Sciences and is the acting Director of the Marine Science Institute at UCSB.

Dr. David A. Caron

Professor, Department of Biological Sciences
University of Southern California
3616 Trousdale Parkway, AHF 301
Los Angeles, CA 90089-0371
(213) 740-0203
dcaron@usc.edu

David A. Caron is a Professor in the Marine Environmental Biology section of the Department of Biological Sciences at the University of Southern California. He has degrees in Microbiology (B.S.) and Oceanography (M.S.) from the University of Rhode Island, and in Biological Oceanography (Ph.D.) conferred jointly by Massachusetts Institute of Technology and Woods Hole Oceanographic Institution. His research interests involve marine and freshwater microbial ecology. Ongoing research programs include studies of harmful bloom-forming species of microalgae, and investigations of the biodiversity and physiology of tropical, temperate and polar microbial communities. He has authored or co-authored over 140 scientific articles and book chapters. He is Fellow of the American Academy of Microbiology, and a member of the American Society for Microbiology, the International Society of Protistologists, The Oceanography Society, the International Society of Microbial Ecology and the Estuarine Research Foundation.

Laboratory Website: http://www.usc.edu/dept/LAS/biosci/Caron_lab/index.html

Melissa Carter

Graduate Student

University of California, San Diego - Scripps Institution of Oceanography
9500 Gilman Dr., Dept 0227
La Jolla, CA 92093-0227
(858) 534-6304
mlcarter@ucsd.edu

Melissa Carter graduated with an undergraduate degree in Oceanography from Humboldt State University and since then has been working at Scripps Institution of Oceanography on a wide variety of projects related to physical and biological interactions in coastal areas. Some of her current projects include a chlorophyll and harmful algal bloom monitoring program at Scripps Pier for the Southern California Coastal Ocean Observing System. She is also currently working on her Master's of Marine Science at the University of San Diego, which is focused on chlorophyll distribution in the Southern California Bight using both in-situ and satellite measurements.

Dr. Grace Chang Spada

Associate Researcher, Ocean Physics Laboratory
University of California Santa Barbara
6487 Calle Real Unit A
Goleta, CA 93117 (805)
681-8207

grace.spada@opl.ucsb.edu

Dr. Grace Chang is an Associate Researcher in the Department of Geography at the University of California, Santa Barbara. Her primary research interest is the use of optical properties for inferring physical processes and biogeochemical properties (e.g., bottom boundary layer dynamics, harmful algal blooms). She has also been active in the area of ocean technology: sensor development and testing, real-time data acquisition, and observatory systems. She was an invited instructor for three courses at the 2003 HABWatch Workshop, "Real time coastal observing systems for ecosystems dynamics and harmful algal blooms" in Villefranche-Sur-Mer, France. Dr. Chang received a B.S. in Geology and a B.G.E. in Geological Engineering from the University of Minnesota, Twin Cities, in 1995, a M.S. in Mechanical and Environmental Engineering in 1997, and a Ph.D. in Marine Science 1999 from the University of California, Santa Barbara.

Dr. William Cochlan

Senior Research Scientist
San Francisco State University - Romberg Tiburon Center
3152 Paradise Drive
Tiburon, CA 94920-1205
(415) 338-3541

cochlan@sfsu.edu

William Cochlan is a biological oceanographer who studies the physiological ecology of marine phytoplankton; specifically the utilization and dynamics of macro- and micro-nutrients. Dr. Cochlan received his BS (H) and PhD from UBC, and MS from Dalhousie University. His Postdoctoral training was conducted at SIO and USC, before moving to the Romberg Tiburon Center, SFSU in 1998. Dr. Cochlan works with a number of HAB species, including raphidophytes (*Heterosigma akashiwo*), dinoflagellates (*Lingulodinium polyedrum*) and numerous *Pseudo-nitzschia* diatom species. Most recently, he was part of a collaborative 5-year Pacific Northwest ECOHAB project (www.ecohabpnw.org) to study the nutritional and ecological factors associated with toxigenic diatom bloom development. His group has quantified the physiological capacity for nitrogen uptake by a number of HAB species and their relationship to ambient nutrient conditions. Dr. Cochlan is a U.S. representative to the HAB section of PICES, and is involved in their HAB database effort (HAEDAT) and HAB training efforts for developing nations. He has conducted phytoplankton research in the Antarctic (JGOFS/AESOPS), and during mesoscale iron enrichment experiments conducted in the equatorial Pacific (Iron Ex II), the northwestern Pacific Ocean (SEEDS-II), and the Southern Ocean (SOFeX). Dr. Cochlan teaches at SFSU, and is the faculty coordinator of educational outreach at RTC.

Joe Cordaro

Wildlife Biologist, Protected Resources Division
NOAA National Marine Fisheries Service (NMFS), Southwest
501 West Ocean Blvd, Suite 4200
Long Beach, CA 90802-4213
(562) 980-4017
Joe.Cordaro@noaa.gov

Joe Cordaro graduated from Arizona State University in 1984 with a Bachelor's Degree in Wildlife Management. In 1988, began working as a wildlife biologist in the NMFS Long Beach Regional Office, Protected Species Management Branch, as the stranding coordinator for the California Marine Mammal Stranding Network. His job responsibilities include documenting all live and dead pinniped, cetacean, and sea turtle strandings in California; ensuring that biological information is collected from the strandings, and ensuring that specimens from stranded animals are made available to the scientific and educational communities. Recently, over the last 10 years, he has observed harmful algal blooms in California progress from occasional to yearly events, and has been attempting to correlate California sea lion and common dolphin strandings with the occurrence of harmful algal blooms in California.

Hugo Cornejo

Program Specialist
California Department Public Health, Food and Drug Branch (CDPH-FDB)
P.O. Box 997435, MS 7602
Sacramento, CA 95899-7435
(916) 650-6704
hugo.cornejo@cdph.ca.gov

Hugo Cornejo has been with the State of California for fifteen years. He has extensive experience in regulatory work and as a trainer to industry, academia, and other governmental agencies in Seafood HACCP, Good Manufacturing Practices, and Sanitation Standard Operating Procedures. Currently, he oversees the Seafood and Shellfish program for FDB and is the State's Shellfish Standardization Officer. During increase activity of HABs, such as Domoic acid, he coordinates and plans sample collection of crab, lobster, anchovies and sardines along the California Coast. He also provides guidance and makes recommendations as to the release of public advisories associated with HABs.

Dr. Quay Dortch

Program Coordinator, Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) Program
NOS/NCCOS/CSCOR/COP
N/SC12, 1305 East West Highway, Building IV Rm 8220
Silver Spring, MD 20910
(301) 713-3338 X157
Quay.Dortch@noaa.gov

Quay Dortch is the Coordinator for the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) Program (<http://www.cop.noaa.gov/stressors/extremeevents/hab/current/factecohab.html>) in the National Oceanographic and Atmospheric Administration (NOAA) National Ocean Service (NOS) National Centers for Coastal Ocean Science (NCCOS) Center for Sponsored Coastal Research (CSCOR). She is also the NOAA Co-Chair of the HABS and Hypoxia Subcommittee of the Interagency Working Group on HABs, Hypoxia, and Human Health, which is leading the effort to implement the requirements of the 2004 amendment to the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998, including writing four reports on HABs in the U.S. (<http://www.cop.noaa.gov/stressors/extremeevents/hab/habhrca/>). Dortch received her Ph.D. from the University of Washington in Oceanography, M.S. in Chemistry from Indiana University and B.A. in Chemistry from Randolph-Macon Woman's College. She held research positions at the University of Washington and Bigelow Laboratory for Ocean Sciences before joining the faculty at Louisiana Universities Marine Consortium from 1986-2002. Her research has examined nutrient utilization by marine phytoplankton, focusing most recently on studies of harmful algal blooms, hypoxia and eutrophication in Louisiana coastal waters, especially those influenced by the Mississippi River. Dr. Dortch is the author or co-author of approximately 90 scientific papers, including some on *Pseudo-nitzschia*.

Terry Fleming

Environmental Scientist
US Environmental Protection Agency (WTR-2)
75 Hawthorne Street San
Francisco, CA 94105 (415)
972-3462
fleming.terrence@epa.gov

Mr. Fleming is an environmental scientist for the US Environmental Protection Agency Region 9. He earned Bachelor of Science degree in Marine Biology from the University of California at Berkeley and his Master of Science degree in Environmental Sciences from the University of Massachusetts at Boston. He worked for five years at the New England Division of the US Army Corps of Engineers in their Impact Analysis Branch. He has been at EPA since 1991. He currently works in the Monitoring and Assessment Office of the Water Division where his duties include coordination of the water quality standards program in Region 9, oversight of the California's Monitoring Program and the development of TMDLs in the Los Angeles Area. He is also the Region 9 coordinator for the BEACH program.

Dominic Gregorio

Senior Environmental Scientist, Ocean Unit, Division of Water Quality
State Water Resources Control Board

1001 I Street
Sacramento, CA 95814
(916) 341-5488

dgregorio@waterboards.ca.gov

Dominic Gregorio has been with the California State Water Resources Control Board for eight years, where he is a Senior Environmental Scientist managing the Board's Ocean Unit. The Ocean Unit is responsible for ocean and coastal water quality standards including the California Ocean Plan, Areas of Special Biological Significance, Sediment Quality Objectives, and Once through Cooling at Coastal Power Plants. The Ocean Unit is also involved in addressing beach and shellfish contamination, harmful algal blooms, vessel discharges, ocean monitoring, and marine debris. Previously, Mr. Gregorio was a marine biology instructor at California State University, Dominguez Hills and at Cypress College, in Orange County, California. During that period he was also affiliated with the Southern California Marine Institute, where he was a principle investigator on projects including harmful algal blooms, marine pollution, and aquaculture. Prior to working in academia, Mr. Gregorio was an environmental coordinator for Texaco, USA, where he managed a number of marine biological surveys and pollution studies for offshore oil drilling projects, and was also responsible for oil spill contingency planning. Mr. Gregorio holds a M.S. in Environmental Biology, from California State University, Dominguez Hills.

Dr. Frances M.D. Gulland

Director of Veterinary Sciences
The Marine Mammal Center

1065 Fort Cronkhote
Sausalito, CA 94965
(415) 289-7344

gullandf@tmmc.org

Frances M.D. Gulland is the Director of Veterinary Services at The Marine Mammal Center, Sausalito, CA. She received her veterinary degree from the University of Cambridge, UK, in 1984; and her Ph.D. in Zoology, also from the University of Cambridge, in 1991. Her research focuses on determining the causes of stranding and disease in pinnipeds in central California, veterinary care of stranded marine mammals, effects of domoic acid on California sea lions, and health monitoring of harbor seals in San Francisco Bay. She currently serves as the Chair of the Southern Sea Otter Recovery Implementation team, the Scientific Advisor for the Marine Mammal Commission, and on the Working Group on Unusual Marine Mammal Mortality Events for the National Marine Fisheries Service.

Dr. Sherwood Hall

U.S. Food and Drug Administration (FDA), Center for Food Safety and Applied Nutrition
HFS-717, 1500 Paint Branch Parkway
College Park, MD 20740
(301) 436-1653
sherwood.hall@fda.hhs.gov

Dr. Hall was born in San Francisco, grew up in Los Angeles, and has never gotten his fill of the coast between, the most beautiful in the world. During 1963/64 he was a tech on the Pollution Project at Hancock Foundation, USC, learning to get seasick doing oxygen titrations below deck. In 1968/69, he worked as a tech at Pacific Mariculture, Pigeon Point, primarily growing algal cultures to feed oyster spat. In 1970 he emigrated to Alaska, eventually doing research that elucidated the origin and nature of paralytic shellfish poisoning along the Alaskan coast. In 1982 he moved from the University of Alaska to WHOI and then, in 1984, to the FDA in Washington DC. At the FDA, his focus has been on the management of marine biotoxins to minimize their impact on consumer health and the seafood industry. He continues to do research on marine biotoxins, notably the saxitoxins and domoic acid, deals with marine biotoxin crises as they arise, and assists in the development of biotoxin management programs. One of his principle concerns is the coordination of existing resources to optimize their effectiveness as assets in monitoring programs, the challenge being to afford monitoring at sufficient temporal and spatial density to ensure seafood safety.

Dr. Meredith Howard

Post-Doctoral Scientist
University of Southern California and Southern California Coastal Water Research Project
3535 Harbor Blvd., Suite 110
Costa Mesa, CA 92626
(714) 755-3263
mhoward@sccwrp.org

Meredith Howard received her B.A. in Finance from Lehigh University in 1995, her B.S. in Biology from Rutgers University in 2001, and her Ph.D. in Ocean Science from the University of California, Santa Cruz in 2007 (Thesis Committee: Raphael Kudela, advisor, Mary Silver, G. Jason Smith, and Kenneth Bruland). Her dissertation research focused on the physiological response of toxin production in several HAB species and the role of anthropogenically derived nitrogen sources in the development and maintenance of HABs. Her work evaluated the nitrogenous preference and toxicity of the diatom, *Pseudo-nitzschia australis* and measured the presence of the emerging marine toxin, yessotoxin, on the U.S. west coast in both mussel and phytoplankton samples. Meredith is currently a joint Post-Doctoral Research Associate at SCCWRP and at the University of Southern California, where she works with Dr. David Caron. She is part of the Southern California Bight '08 Regional Monitoring Project, Water Quality group and the Caron MERHAB project, and she continues to focus her research on improving HAB monitoring, detecting and identifying emerging and established HAB species and evaluating the oceanographic conditions, particularly nutrient sources, which lead to the development and maintenance of algal blooms.

Dr. Burton Jones Research
Associate Professor University of
Southern California
3616 Trousdale Parkway, AHF B-30
Los Angeles, CA 90089-0371
(213) 740-5153
bjones@usc.edu

Burton Jones is a Biological Oceanographer in the Marine Environmental Biology section of the Biology Department at the University of Southern California. His research interests include biooptical oceanography, physical-biological interactions, coastal processes, and coastal ocean observing systems. He received his B.S. in biological engineering from Rose-Hulman Institute of Technology and his Ph.D. in biological oceanography from Duke University. After a postdoctoral fellowship at Bigelow Laboratory he joined the research faculty at University of Southern California. He has been involved in studying the dynamics of physical/bio-optical interactions in a variety of environments that include coastal California, the Arabian Sea, Japan/East Sea, and the Adriatic Sea. Recently, as part of the Southern California Coastal Ocean Observing System (SCCOOS) and USC MERHAB research in harmful algal bloom monitoring, Dr. Jones has been involved in implementing a coastal observing system that includes both fixed sites and autonomous vehicles. This includes participation in the development of an intelligent network of fixed and mobile nodes capable of adaptive mapping and sampling strategies.

Dr. Rachel Wisniewski Jakuba
AAAS Science & Technology Policy Fellow
USEPA Office of Research and Development, National Center for Environmental Research
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460 (202)
343-9811
Jakuba.Rachel@epamail.epa.gov

Rachel Wisniewski Jakuba is a 2007-2008 AAAS Science & Technology Policy Fellow in EPA's National Center for Environmental Research. Rachel has a scientific background in marine science. As an undergraduate, Rachel attended the University of Georgia, where she focused on Marine Science and Chemistry. Rachel worked on nitrogen cycling in salt marshes, measuring microbial denitrification rates and porewater ammonia concentrations. Rachel completed her Ph.D. in chemical oceanography from the Massachusetts Institute of Technology- Woods Hole Oceanographic Institution Joint Program in 2006. Her thesis research focused on how several nutrients (zinc, cobalt, and phosphorus) influence photosynthesis in the open ocean. Specifically, she was interested in how the chemical speciation of elements influences their bioavailability and whether or not the cycles of zinc, cobalt, and phosphorus are linked. Rachel's research involved measuring the concentrations of these elements in ocean surface waters, performing shipboard incubation experiments with the natural phytoplankton community, and performing lab experiments with cultures of model phytoplankton organisms. As an AAAS Science & Technology Policy Fellow, Rachel is learning how basic scientific research is used to formulate environmental policy and is working on a synthesis of the first 10 years of ECOHAB research.

Susan A. Kaveggia
Wildlife Biologist and Rehabilitator
California Council for Wildlife Rehabilitators
P.O. Box 434
Santa Rosa, CA 95402
(714)322-4309
SKaveggia@aol.com

Susan has been rehabilitating wildlife for the past 11 years and specializes in pelagic birds. She currently is board member of the California Council for Wildlife Rehabilitators (CCWR) which acts as a liaison between rehabilitators and regulatory agencies. Her interests lie in the etiology of “seabird wrecks” and the conservation of endangered birds, such as, the Light-footed Clapper Rail and the Brown Pelican. She also is on the oil response team for International Bird Rescue Research Center and the Oiled Wildlife Care Network. Susan is the lead avian coordinator for gathering domoic acid samples and the transfer between The Wetlands and Wildlife Care Center, International Bird Rescue Research Center, and the University of Southern California Caron Lab. She participates in the educational outreach to fellow biologists, wildlife rehabilitators, state and county agencies of Domoic Acid.

David Kidwell
Hypoxia and HAB Specialist
NOAA, Center for Sponsored Coastal Ocean Research
N/SCI2, SSMC4, Rm. 8326, 1305 East-West Hwy
Silver Spring, MD 20910
(301) 713-3338 X148
David.Kidwell@noaa.gov

Mr. Kidwell is currently a Hypoxia and Harmful Algal Bloom Specialist at NOAA’s Center for Sponsored Coastal Ocean Research (CSCOR). Since joining CSCOR in early 2007 as a Knauss Marine Policy Fellow, David has spent considerable time on coastal hypoxia issues, especially in the Gulf of Mexico. Through the course of his work with hypoxia, he has participated in the Gulf of Mexico/Mississippi River Watershed Nutrient Task Force’s reassessment of the 2001 Action Plan, the development of a hypoxia monitoring implementation plan and stakeholder web site, workshop planning, and NOAA efforts to including coastal impacts in the 2008 Farm Bill. In 2008, David transitioned to his current position where, in addition to his hypoxia efforts, he is involved in harmful algal bloom program activities that include workshop development and program planning. David completed his graduate work at the University of Maryland, College Park while working at the U.S. Geological Survey Patuxent Wildlife Research Center, where he conducted research on waterfowl ecology in estuarine and marine ecosystems.

Dr. Raphael Kudela

Associate Professor, Ocean Sciences and Institute for Marine Sciences
University of California Santa Cruz
1156 High Street Santa
Cruz, CA 95064 (831)
459-3290

kudela@ucsc.edu

Raphael Kudela is a biological oceanographer who focuses on phytoplankton ecophysiology, particularly the interplay of light and nutrients. Recent HAB-related research includes development of monitoring programs in California (e.g. Cal-PreEMPT, CeNCOOS, and partnerships with California Water Boards and CDFG), optical and remote sensing methods for identifying true red tides as well as less visible HAB events, toxin production by various organisms, and more generally the ecophysiological conditions (from genomics to decadal timeseries analysis) leading to HAB events. Kudela serves on the US HAB National Committee, is the Vice-Chair of the GEOHAB program, and serves on the GEOHAB Core Research Program: HABs in Upwelling Systems committee.

Gregg Langlois

Senior Environmental Scientist
California Department of Public Health
850 Marina Bay Parkway, G165
Richmond, CA 94804
510-412-4635

Gregg.Langlois@cdph.ca.gov

Mr. Langlois is a Senior Environmental Scientist with the California Department of Public Health (CDPH). He has managed the state's marine biotoxin monitoring program since 1990 and has supervised the state's preharvest shellfish program since 1997. Biotoxin program responsibilities include: coordination of program participants responsible for the routine collection of shellfish samples; coordination of a volunteer network of phytoplankton samplers; liaison with the CDPH regulatory laboratories responsible for toxin analyses; declaration of commercial shellfish harvest closures and reopenings; drafting of quarantines and health advisories; collection of ancillary environmental data; routine reporting. He also supervises a small staff of four people who are responsible for classifying commercial shellfish growing areas statewide. This involves the conduct of sanitary surveys for pollution source identification; water quality data collection and analysis; development of management strategies for implementing harvest closures for public health protection; ensuring compliance with the National Shellfish Sanitation Program administered by the U.S. Food and Drug Administration. Recent focus has been on cost-effective approaches to improve early detection capabilities for harmful algal events. A joint project with UC Santa Cruz is currently evaluating the reliability and utility of field-based tools for identification of toxigenic phytoplankton species and toxin detection in shellfish.

Dr. Wayne Litaker
Research Scientist
NOAA National Ocean Service
101 Pivers Island Road
Beaufort, NC 28516
(252) 728-8791
wayne.litaker@noaa.gov

Wayne Litaker holds a B.S. in botany and zoology from Duke University, an M.S. in natural resources from the University of Michigan, and a Ph.D. in botany from Duke University. From 1986 until 1991, Wayne did postdoctoral training in molecular immunology and served as a research associate in the Department of Immunology and Microbiology at UNC Chapel Hill. From 1991 to 2002 he was on faculty at the UNC School of Medicine's Program in Molecular Biology & Biotechnology. In 2002 he joined NOAA as a research scientist. His research focuses on the molecular biology and ecology of harmful algal bloom species and the development of detection technologies for certain algal toxins. Ongoing projects include the development of a cost effective, rapid and accurate domoic acid test kit and assays to identify the dinoflagellates responsible of ciguatera fish poisoning. Other projects include investigating an alternative mechanism for the development of red tide blooms off Florida, and a quantitative assay for detection of human enteroviruses in recreational waters. Wayne participates in a number national and international collaborations and holds adjunct appointments at the North Carolina State College of Veterinary Medicine and the School of Public Health at the UNC School of Medicine.

Dr. Amber Mace
Executive Director
California Ocean Science Trust (OST)
1330 Broadway, Suite 1135
Oakland, CA 94612-2525
(510) 251-8323
amber.mace@calost.org

Dr. Amber Mace serves as the Executive Director of the California Ocean Science Trust (OST). The OST is a non-profit that strives to connect science to ocean management solutions. As the OST ED, Amber serves as the Science Advisor to the California Ocean Protection Council. Amber came to The OST after having served as a John D. Knauss Sea Grant Marine Policy Fellow in the Senate Commerce, Science, and Transportation Committee. Prior to the Knauss position, she served as a California Sea Grant State Fellow with the California Ocean Resources Management Program. Amber earned a B.A. in Geography from University of California, Berkeley in 1994 and a Ph.D. in Ecology from University of California, Davis and the Bodega Marine Laboratory in 2005. During this time, Amber investigated how larval transport and nearshore circulation patterns can inform the placement of marine reserves. Prior to completing her doctorate, she worked with the Farallones Marine Sanctuary Association in support of outreach activities for the National Marine Sanctuary Program. Amber has spent her life along the shores of northern California and the past 12 years working actively to improve communication and collaboration among scientists, resource managers, policy makers, and the public.

Dr. John A. McGowan

Research Professor of Oceanography, Integrative Oceanography Division
University of California, San Diego – Scripps Institution of Oceanography
9500 Gilman Dr., Mail Code 0227
La Jolla, CA 92093
jmcgowan@ucsd.edu

John McGowan received his B.S. and M.S. in Zoology from Oregon State University. He received his Ph.D., in oceanography from Scripps Institution of Oceanography (SIO). From 1956 – 1958, Dr. McGowan served as a marine biologist for the Trust Territories of the Pacific Dept. Interior. He became an assistant to professor of oceanography at SIO in 1952 and has supervised twenty-one Ph.D. candidates, one Masters student and served on fifty-six Ph.D. committees. He has taught a variety of classes on biological oceanography and pelagic ecology at SIO, invertebrate zoology at the Pacific Marine Station and General Oceanography at the Oregon Institute of Marine Biology. His research interests are the following: large-scale pelagic biogeography, pelagic community structure, diversity maintenance, biophysical time-series, the role of climate in regulating populations and communities, near-shore biophysical processes, red tides and change in the ocean.

Danielle Luttenberg Meitiv

NOAA, Center for Sponsored Coastal Ocean Research
NSC12, 1305 East West Hwy, Building IV Rm 8116
Silver Spring, MD 20910
(301) 713-3338 X155
Danielle.Meitiv@noaa.gov

Danielle Luttenberg Meitiv works on program development, support and strategic planning for the National HAB Program at NOAA Center for Sponsored Coastal Ocean Research (CSCOR). She returned to NOAA in 2007 after spending six years working on fisheries, Middle East environmental issues and political training for non-profit environmental organizations including Environmental Defense, the Coalition on the Environment and Jewish Life (COEJL) and the Massachusetts Public Interest Research Group (MASSPIRG) and teaching in the Genesis Program at Brandeis University. Her previous work for NOAA included developing and managing the Monitoring and Event Response for HAB (MERHAB) program and acting as National Event Response Coordinator for HAB events. She received a BS in biology from the University of Buffalo and an MS in oceanography from the University of Rhode Island's Graduate School of Oceanography.

Dr. Abdou Mekebri
Chief Chemist
California Department of Fish and Game, Water Pollution Control Laboratory
2005 Nimbus Road
Rancho Cordova, CA 95670
916-358-0317
amekebri@ospr.dfg.ca.gov

Abdou Mekebri, Staff Chemist with the California Department of Fish and Game (DFG), has more than 20 years of public and private sector environmental laboratory experience with extensive experience in pesticide analysis and methods development. Mr. Mekebri is the lead chemist for the Water Pollution Control Laboratory's Pesticide Residue Laboratory. Mr. Mekebri is currently finishing his Ph.D. in chemistry and holds both MS and BS degrees in Biochemistry. He has extensive experience in all areas of environmental analysis including field sampling, sample preparation, sample analysis, and analytical methods development and validation. His experience includes analysis of water, air, sediment, soil and biological fluids and tissues using advanced analytical equipment. Recently, Mr. Mekebri has been researching new methods using HPLC-MSMS instrumentation including the analysis of freshwater and marine toxins such as domoic acid and microcystins in water, sediment and biological fluids and tissues and pharmaceuticals in wastewater.

Dr. Peter Miller
Assistant Researcher, Institute of Marine Sciences
University of California, Santa Cruz
1156 High Street Santa
Cruz, CA 95064 (831)
459-5005
pemiller@ucsc.edu

Peter Miller received his Ph.D. in Biology (1999) from the University of California, Santa Cruz. In 2000 he was awarded an AAAS Science and Technology Diplomacy Fellowship to work with the U.S. Agency for International Development. In this position he was a technical and management advisor for a competitive grants program funding scientific research broadly focused on topics relevant to international development. In 2002 Miller returned to science as an Assistant Researcher with the Institute of Marine Sciences at UCSC. His research interests include: Phytoplankton ecology, harmful algal blooms, development of molecular genetic methods for species detection, traditional morphology-based taxonomy, technology transfer of traditional and modern methods to end users and coastal managers. Current research includes NOAA- and EPA-funded projects to: (1) implement an economically sustainable harmful algal bloom monitoring plan for California that exceeds current capabilities of the California Department of Public Health by using new technologies for toxin and species detection and bloom tracking, (2) establish a fine-scale in-situ sensor network for monitoring the spatiotemporal distribution of algal blooms in coastal waters of southern California to implement state-of-the-art technology for quantifying *Pseudo-nitzschia* species and domoic acid concentrations in southern California, (3) investigate the relationship between freshwater inputs from the LA harbor region and blooms of the toxic diatom *Pseudo-nitzschia*.

Dr. Mark Moline

Associate Professor, Biological Sciences Department
California State Polytechnic University (Cal Poly), San Luis Obispo
San Luis Obispo, CA 93407
(805) 756-2948
mmoline@calpoly.edu

Dr. Moline is the Director of the Center for Marine and Coastal Sciences and Professor of Biology at California Polytechnic State University. His general research areas of interest include biological oceanography, phytoplankton ecology, phytoplankton physiology, photobiology, biooptics, remote sensing, and biogeochemistry, coastal oceanography, harmful algae, polar ecosystems, and climate change. Dr. Moline is an expert in emerging in situ and remote sensing techniques including: autonomous underwater vehicles (AUVs), high frequency radar (HFR) surface current mapping, profiler-based studies of phytoplankton bioluminescence, and hyperspectral remote sensing of coastal and shallow benthic environments. Dr Moline is an active member of the two California regional observation systems, SCCOOS and CeNCOOS, CICOORE and COCOMP. Dr. Moline received his Ph.D. in biology in 1996 from UC Santa Barbara, and followed with a postdoctoral fellow at Rutgers University. In 1998, he joined the faculty of California Polytechnic State University and became Director of the Center for Marine and Coastal Sciences in 2004. Dr. Moline was recently named a fellow of the California Council of Science and Technology and a member of the Science Advisory Team for the California Ocean Protection Council.

Dr. Russell Moll

Ocean Science Trust Board Chair and Director California Sea Grant
University of California, San Diego
9500 Gilman Dr., Dept 0232
La Jolla, CA 92093-0232
rmoll@ucsd.edu

Russell Moll has worked as a member and director of research teams, administrator of research programs and Program Officer in a federal agency. All of these activities have been in aquatic sciences. He conducted research in the nearshore marine environment, salt marshes, African mangrove systems, the Great Lakes, small lakes, and temperate and tropical rivers. In 1989, Dr. Moll became Director of the Cooperative Institute for Limnology and Ecosystems Research at the Univ. of Michigan. In 1994 he took a leave to serve as an Associate Program Director in the Biological Oceanography Program at the National Science Foundation (NSF). Upon return to Michigan from NSF, Dr. Moll was appointed Director of the Michigan Sea Grant Program. In 1998, he assumed duties as Associate Director of the University of Michigan Biological Station in charge of the Center for Great Lakes and Aquatic Studies. In 2000, Dr. Moll moved to the University of California, San Diego to become Director of the California Sea Grant Program. Dr. Moll has a B.A. from the University of Vermont, M.S in marine science from Long Island University, M.S. in biostatistics from the University of Michigan and Ph.D. in marine ecology from Stony Brook University.

Dr. Shamitha Kusum Perera

Chief

California Department of Public Health, Sanitation & Radiation Laboratory Branch
850 Marina Bay Parkway G 164
Richmond, CA 94804-6403
(510) 620-2915

Kusum.Perera@cdph.ca.gov

Shamitha Kusum Perera, Ph.D., serves as the Chief of California Department of Public Health's, Sanitation and Radiation Laboratory. The Laboratory's role is to perform needed tests to protect the public from exposure contaminants in California's water and in particular drinking water. It also serves as the State's laboratory for emergency response relating natural disasters and terrorism events that impacts drinking water supplies and human health. In addition, the laboratory also performs testing relating to environmental radiation.

Dr. Rick Pieper

Director

Southern California Marine Institute
820 South Seaside Ave.
Terminal Island, CA 90731
(310) 519-3172, Ext. 977

rpieper@csulb.edu

or pieper@usc.edu

Dr. Pieper's research interests in biological oceanography encompass much of the field. Early work focused on zooplankton and micronekton ecology. This included the measurement and understanding of high-resolution temporal and spatial scales of biological interactions in the sea, and the interactions of the biological structure with physical oceanographic structure and variability. High frequency acoustics (0.1-10 MHz) sensors were developed and used to detect and quantify the distribution and abundance of the smaller zooplankton, and related these distributions to physical oceanographic parameters, including thin layers. Similarly, he has always been interested in red tides, blooms and the initiation and maintenance of them, coauthored a short paper, and organized a symposium at the SCAS meeting in 2006. Recent work concerns environmental monitoring of water properties in inner Los Angeles Harbor and in Long Beach at the terminus of the Los Angeles River. High resolution measurements (data taken at high-data rates) are needed to determine and monitor short term, episodic events which, for example, might correlate with bloom initiation, maintenance, and termination. For example, termination of the domoic acid toxicity event of 2007 occurred with an observed rise in water temperature at the mouth of the Los Angeles River.

George Robertson
Senior Scientist
Orange County Sanitation District
P.O. Box 8127
Fountain Valley, CA 92728-8127
(714) 593-7468
grobertson@ocsd.com

Mr. Robertson received an M.S. in Environmental Studies from California State University, Fullerton in 1990 and a B.A. in Applied Ecology from the University of California, Irvine in 1983. He is a Senior Scientist with the Orange County Sanitation District's ocean monitoring and research program. In this capacity, Mr. Robertson assigns, oversees and coordinates the work of in-house scientists, technicians and interns, and several consulting firms. Additionally he is responsible for developing and maintaining relations with other government and university research and monitoring groups. He develops specifications for contracts for the ocean monitoring program and sets short- and long-term goals and objectives for the project. He produces reports and contributes to the publication of scientific papers in peer-reviewed journals. He has been with OCSD for over 19 years.

Dr. John Ryan
Scientist
Monterey Bay Aquarium Research Institute (MBARI)
7700 Sandholdt Road
Moss Landing, CA 95039
(831) 775-1978
ryjo@mbari.org

John Ryan received a B.S. in Biology from the University of Massachusetts at Boston. He received M.S. and Ph.D. degrees in Biological Oceanography from the University of Rhode Island Graduate School of Oceanography, on Narragansett Bay. In 1998, John switched coasts for a postdoctoral fellowship at the Monterey Bay Aquarium Research Institute (MBARI) in Moss Landing, California, and he has continued to work at MBARI as a Scientist since 2001. John's research integrates remote sensing, in situ sensing, and models to study bloom processes in open ocean and coastal environments. His research in coastal California waters is focused on understanding the nature of a "red tide incubator", a region of Monterey Bay in which extreme blooms are frequently observed, and from which they can rapidly spread to larger regions. Of particular interest is the intersection of natural and anthropogenic influences in determining bloom frequency and severity.

Dr. Astrid Schnetzer

Research Assistant Professor, Department of Biological Sciences
University of Southern California
3616 Trousdale Parkway, AHF 301
Los Angeles, CA 90089-0371
(213) 821-1800
astrids@usc.edu

Dr. Schnetzer completed my undergraduate degree in Zoology and Ecology at the University of Vienna, Austria, where I also received a Masters in Marine Biology and a Ph.D. in Biological Oceanography. Field work for her Ph.D. thesis was conducted at the Bermuda Biological Station for Research, Bermuda, where she studied the impact of open ocean zooplankton on biogeochemical cycles mainly carbon and nitrogen export flux from surface waters. She was awarded a Postdoctoral fellowship from the Austrian Science Foundation to investigate trophic food web dynamics between protistan and metazoan planktonic populations using molecular research techniques at the University of Southern California. She worked in the Caron laboratory at USC for a total of four years as a Postdoc and was promoted to Research Assistant Professor in early 2006. Much of her research over the past years has focused on the ecology of harmful algal blooms, specifically blooms caused by members of the toxic diatom genus *Pseudo-nitzschia*. The examination of environmental conditions that favor growth of *Pseudo-nitzschia* species and/or the production of domoic acid, a neurotoxin that is transferred through the food web and causes sickness and mortality in pinniped and seabird populations, is at the core of these research efforts. Investigating these topics has given Dr. Schnetzer and other members of the Caron laboratory the opportunity to join coastal monitoring efforts by the Southern California Coastal Water Research Project together with local Sanitation Districts and has lead to close collaborations with Mammal Care and Bird Rescue Groups to examine the impact of toxic blooms on species such as the California sea lion and the brown pelican. She is also involved in a multi-disciplinary, multi-institutional research effort between USC, UCLA and UCSC which focuses on the establishment of a coastal sensor network that allows real-time monitoring for algal blooms in the Southern California Bight.

Dr. Chris Scholin

Senior Scientist/Research Division Chair
Monterey Bay Aquarium Research Institute (MBARI)
7700 Sandholdt Road
Moss Landing, CA 95039
(831) 775-1779
scholin@mbari.org

Chris Scholin's work focuses on development and application of the Environmental Sample Processor (ESP; <http://www.mbari.org/esp>), a device that allows for autonomous application of molecular probe technology below the ocean surface. His research interests are centered on detection of water borne microorganisms including and bacterioplakton, invertebrates, harmful algae and associated toxins. Chris received a Ph.D. from the Massachusetts Institute of Technology-Woods Hole Oceanographic Institution Joint Program in Biological Oceanography in 1993, a M.A. in Molecular Biology and Immunology from Duke University in 1986, and a B.A. in Biology from the University of California at Santa Barbara in 1984.

Dr. Rebecca Shipe

Assistant Professor, Department of Ecology and Evolutionary Biology
University of California, Los Angeles
Los Angeles, CA 90095
(310) 794-4903
rshipe@ucla.edu

Dr. Shipe's primary research interests are the ecology and physiology of marine phytoplankton. The major focus of her work has been directed at determining the relationships between diatoms (Bacillariophyceae) and their environment, with specific attention to factors that control phytoplankton growth (from nutrient physiology to large scale climatic conditions such as ENSO cycles), and how these factors affect the contributions of phytoplankton to global matter budgets. Her work emphasizes the importance of species-specific processes and knowledge of the individual players in natural communities of plankton. Currently ongoing projects in the Santa Monica Bay focus on the roles of stormwater runoff, organic versus inorganic N sources and upwelling conditions in supporting algal blooms and harmful algal bloom taxa. The techniques that we use include laboratory and culture work, cruises in local coastal waters and observations from the Santa Monica Bay Observatory interdisciplinary mooring station.

Dr. Mary Silver Professor, Ocean

Sciences University of California
Santa Cruz
1156 High Street Santa
Cruz, CA 95064 (831)
459-2908
msilver@ucsc.edu

Mary Silver holds a faculty position in the Ocean Sciences department at the University of California, Santa Cruz, where she has been studying the ecology of phytoplankton and zooplankton in California coastal waters since 1972. For several decades her work focused on marine snow, aggregates of detritus and small plankton and on the descent of these aggregates into the deep ocean – a principal source of organic matter at depth. In 1991, she participated in the discovery of the role of the toxin produced by the diatom *Pseudo-nitzschia* in the death of seabirds in Monterey Bay. Since that time, she and her students have focused on the movement of phytoplankton toxins into the pelagic and benthic food webs of coastal California, focusing on toxic species of *Pseudo-nitzschia*, *Alexandrium*, and *Dinophysis*, and red-tide producing *Cochlodinium*. Additionally she and her students have studied the temporal patterns of these species in Monterey Bay. Recently she has begun to study offshore, oceanic phytoplankton species, including smaller oceanic *Pseudo-nitzschia* that produce toxins (domoic acid) and on the flux of intact cells of these into the subsurface, mesopelagic communities of the north Pacific ocean.

Dr. G. Jason Smith

Associate Research Scientist/ACT -Pacific Coast Technical Coordinator
Moss Landing Marine Laboratories
8272 Moss Landing Rd.
Moss Landing, CA 95039
(831) 771-4126
jsmith@mlml.calstate.edu

G. Jason Smith, Ph.D. is an Associate Research Scientist at the Moss Landing Marine Laboratories. Jason received his Ph.D. in Zoology from the University of Georgia in 1984 and his ongoing research program stems from his fascination with the molecular physiological ecology of marine algae. Specific research projects have ranged from nutrient regulation of coral-dinoflagellate symbioses, to investigation of the molecular regulation of nitrogen assimilation in marine phytoplankton, and biotechnology applications with diatoms and yeast. Current research seeks to identify molecular and biochemical markers associated with production of the neurotoxin domoic acid (DA) by diatoms in the genus *Pseudo-nitzschia*. His research group is developing molecular bioassays enabling identification of species actively metabolizing DA and well and genetic markers for robust enumeration of *Pseudo-nitzschia* population and community dynamics. These research efforts helped Jason recognize the need for reliable and user friendly technologies for characterizing water quality variation over fine temporal and spatial scales, leading to his commitment to the ACT program. Since the program's inception, he has served as the Technical Coordinator for the ACT-Pacific Coast Region by providing liaisons between resource managers, environmental scientists and the private sector, with the goal of fostering reliable and appropriate application of new technologies for monitoring water quality and ecosystem health in coastal waters. An important part of these regional efforts is coordinating the design and management of ACTs Technology Performance Verification trials. Jason was recently nominated to the ACT Board of Directors helping guide the national program's future activities.

Dr. Richard P. Stumpf

NOAA National Ocean Service
1305 East-West Highway code N/SCI1
Silver Spring MD 20910.
301-713-3028 x173
richard.stumpf@noaa.gov

Dr. Stumpf has over twenty years experience in coastal oceanography, with particular interest in the detection and monitoring of algal blooms. His research includes developing methods to incorporate satellite data into solving such coastal problems as habitat and eutrophication assessment and algal bloom monitoring and forecasting, and has applied these methods over most of the US coast. He develops methods for developing operational forecasts of harmful algal blooms from research programs. In particular, Dr. Stumpf started NOAA's first operational monitoring program for harmful algae in 1988, which led to NOAA's CoastWatch program, and he led the effort to develop NOAA's operational Harmful Algal Bloom Forecast System for the Gulf of Mexico. Dr. Stumpf leads Remote Sensing activities in the Center for Coastal Monitoring and Assessment in NOAA's National Ocean Service. From 1989-1998, he headed remote sensing programs for the USGS Center for Coastal & Watershed Studies in St Petersburg, Florida, and he developed assessment capabilities for the NOAA Satellite and Data Service from 1985-1989. He has authored or co-authored some 50 peer-reviewed publications. He received a B.A. degree in the Environmental Sciences from the University of Virginia, and M.S. and Ph.D. degrees in Marine Studies from the University of Delaware.

