ECOHAB: *Karenia*

MEET THE SCIENTISTS

Scientists with a variety of backgrounds are working on the ECOHAB: *Karenia* project as co-principal investigators. Contact information and research interests of these scientists are presented below**.**

Deborah Bronk, Ph.D. Project P.I.

Deborah Bronk is a professor of physical sciences at the College of William and Mary's Virginia Institute of Marine Science (VIMS). She received a B.S. in marine science and biology from the University of Georgia and a Ph.D. in marine estuarine and environmental science from the University of Maryland, and she was a post-doctoral scholar at the University of California, Santa Cruz. In 1994, she joined the faculty of the Department of Marine Science at the University of Georgia and became a tenured associate professor in 1998. She moved to VIMS in 2000. Dr. Bronk's research program focuses on nitrogen, addressing both basic and applied questions and, more specifically, the composition and cycling of dissolved organic nitrogen. Past and ongoing research addresses questions related to coastal eutrophication, new and regenerated production, nitrogen photochemistry, the balance between autotrophic and heterotrophic nitrogen utilization, the nutrient ecology of harmful algal blooms, and nitrogen fixation.

Contact Information:
The College of William and Mary
Virginia Institute of Marine Science
Route 1208 Greate Road
P.O. Box 1346
Gloucester Point, VA 23062
phone: (804) 684-7779
e-mail: bronk@vims.edu

Web Site:
http://web.mac.com/dominodelivers/iWeb/Bronk%20Lab/Welcome.html

Bronk Lab Associated Researchers:
Lynn Killberg-Thoreson
Quinn Roberts

Lynn Killberg Thoreson, Ph.D.

Lynn is a Graduate Research Assistant at The College of William and Mary's Virginia Institute of Marine Science (VIMS). She received her B.S. in chemistry from Northern Illinois University and her Ph.D. from VIMS under Dr. Deborah Bronk. On ECOHAB cruises, Lynn assists in conducting 15N tracer experiments, photochemical release experiments, and filters water for ambient nutrient analyses. In the laboratory, using cultured *K. brevis,* she utilizes stable isotope techniques to determine kinetic parameters, N uptake rates, and strain variations under a variety of conditions. Her research interest is nutrient physiology of harmful algae.

Contact Information:
Graduate Research Assistant
Department of Physical Sciences
Virginia Institute of Marine Science
P.O. Box 1346
Route 1208 Greate Rd. (shipping)
Gloucester Pt., VA 23062 USA

killbergthoreson@gmail.com
804-684-7597

Quinn Roberts

Quinn is a Laboratory Specailist Advanced at The College of William and Mary's Virginia Institute of Marine Science (VIMS). She received her B.S. in Marine Science from University of South Carolina. On ECOHAB cruises Quinn assists in conducting 15N tracer experiments, photochemical release experiments, and filters/collects water for biomass parameters and nutrient analyses. In the laboratory, she measures nutrient concentrations. Her research interest is the effects of anthropogenic nitrogen in the Chesapeake Bay.

Contact Information:
Laboratory Specialist Advanced
Department of Physical Sciences
Virginia Institute of Marine Science
P.O. Box 1346
Route 1208 Greate Rd. (shipping)
Gloucester Pt., VA 23062 USA

groberts@vims.edu
804-684-7884

L. Kellie Dixon, Ph.D. Project P.I.

L. Kellie Dixon, a Senior Scientist with Mote Marine Laboratory and manager of the Chemical & Physical Ecology Program, received her B.S. in Chemistry from Emory University. Joining Mote in 1978, she received her Ph.D. in Chemical Oceanography from the University of South Florida. Her program focuses on the statistical evaluations of water, sediment, and tissue data sets for impact assessment, trend detection, the determination of environmental requirements, and mapping and modeling along estuarine gradients. Also of interest are the modeling of light regimes and spectral quality, including both water column and plant-level attenuating substances. Previous work has included describing the statistical relationships between the outbreak and duration of harmful algal blooms and riverine flow, rainfall, atmospheric deposition of nitrogen, major storm frequency, and various climatic indices. Projects have also addressed algal responses to estuarine waters, rainfall, reagent grade nutrients, and iron, as well as a number of studies of sediment nutrient flux rates and methodological comparisons.

Contact Information:
L. Kellie Dixon
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, FL 34236
phone: (941) 388-4441
e-mail: lkdixon@mote.org

Dixon Lab Associated Researchers:
Emily Hall
Ari Nissanka

Emily Hall, Ph. D.

Emily is a Staff Scientist at the Mote Marine Laboratory. She received her B.S. in Environmental Science and Spanish from Mercer University, and her M.S. and Ph.D. in Environmental Engineering Sciences from the University of Florida. On ECOHAB cruises Emily collects and filters water for a suite of nutrient analyses. She also assists with determining station location for mapping purposes. Her interest is nutrient concentrations in relation to harmful algae blooms, especially *Karenia brevis*.

Contact Information:
Staff Scientist
Mote Marine Laboratory
1600 Ken Thompson Pkwy.
Sarasota, FL 34236

emily8@mote.org
941-388-4441

Ari Nissanka, D.Sc.

Ari is a Staff Scientist and Laboratory Manager at the Mote Marine Laboratory. She received her B.Sc. in Botany with Chemistry as Subsidiary from the University of Ceylon, her M.Sc. and D.Sc. in Biology from Tohoku University. As the laboratory manager of Chemical Ecology Program of Mote Marine Laboratory, she is responsible for scheduling all the laboratory activities, and reviewing all the laboratory analyses for compliance with data quality objectives. She is also responsible in maintaining all data files related to the ECOHAB project. She is interested in water quality, particularly nutrient related research, including pollution control.

Contact Information:
Staff Scientist
Mote Marine Laboratory
1600 Ken Thompson Pkwy.
Sarasota, FL 34236

ari@mote.org
941-344-4441

Cynthia Heil, Ph.D. Project P.I.

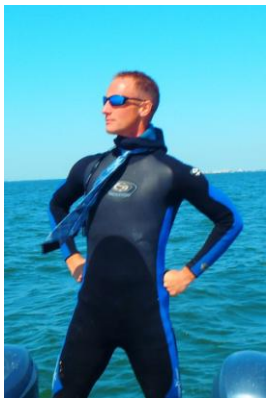
Cynthia Heil is a senior research scientist and red tide group leader at the Florida Fish and Wildlife Conservation Commission's (FWC) Fish and Wildlife Research Institute (FWRI) in St. Petersburg, Florida. She oversees a staff responsible for conducting research on and monitoring of harmful algal blooms, including red tides, in Florida. She received an M.S. from the University of South Florida (USF) studying Florida red tide and a Ph.D. from the University of Rhode Island for research on the nutrition of different types of harmful microalgae. After a post-doctorate appointment at the University of Queensland, Australia, where she worked on the development of new methods to assess water quality, she returned to Florida to study red tide at USF's College of Marine Science from 1998 to 2003. She joined the staff of FWC in November 2003 and remains on faculty at USF. Her research focuses on harmful algae, nutrients, and water quality, and her research group at FWC studies topics including red tide toxins, taxonomy, new technology development, and the potential impacts of Everglades restoration on coastal algal blooms.

Contact Information:
Bigelow Laboratory for Ocean Sciences
Research Faculty, Colby College
60 Bigelow Drive, P.O. Box 380
East Boothbay Harbor, Maine 04544
phone: (207) 315-2567
e-mail: cheil@bigelow.org

Web Site:
www.bigelow.org

Heil Lab Associated Researchers:
Matt Garrett

Matt Garrett



Matt is a Marine Research Associate at the Florida Fish and Wildlife Conservation Commission (FWC), Fish and Wildlife Research Institute. He received his B.S. in Marine Science-Biology from the Eckerd College and is pursuing a M.S. in Oceanography at USF College of Marine Science. On ECOHAB cruises Matt serves as co-chief scientist which includes both pre and post cruse logistics, coordinates and execution of sampling efforts and deck operations, and enumeration of *Karenia* while at sea .He also performs nutrient analysis of samples collected on cruises, conducts laboratory experiments on the vertical migration of *Karenia brevis* and monthly photochemical experiments, maintains cultures of Karenia species for other project PIs, and maintains the website. His research interests are in dinoflagellate resting stages and the vertical migration behavior of *Karenia* species.

Contact Information:
Marine Research Assistant
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue SE
Saint Petersburg, FL 33701

Matt.garrett@myfwc.com
727-896-8626

Gary Hitchcock, Ph.D. Project P.I.

Dr. Gary L. Hitchcock is an associate professor in the Division of Marine Biology and Fisheries at the Rosenstiel School of Marine and Atmospheric Science, University of Miami. Dr. Hitchcock's research has mainly focused on the role of physical processes on the distribution, productivity, and growth of marine plankton. He completed his undergraduate work at Cornell University and his graduate degrees at the Graduate School of Oceanography, University of Rhode Island (URI), under Professor Ted Smayda. He was an associate marine scientist at URI before going to Nova University in 1985 as an assistant professor, eventually moving to the University of Miami in 1990. He has conducted research on the role of mesoscale physical processes in regulating plankton productivity in the Gulf of Mexico, Florida Straits, North Atlantic Ocean, and western Indian Ocean. Several of his graduate students have completed M.S. and Ph.D. degrees through studies of the south Florida watershed and West Florida Shelf as they influence phytoplankton dynamics in Florida Bay. His research in the ECOHAB Gulf of Mexico Program centers on carbon dynamics in laboratory cultures and natural populations of *Karenia brevis*, and he deploys instrumented Lagrangian platforms during ECOHAB cruises to monitor surface productivity and respiration rates *in situ*.

Contact Information:
Marine Biology and Fisheries/RSMAS
University of Miami
4600 Rickenbacker Causeway
Miami, FL 33149
phone: (305) 421-4926, fax: (305) 421-4600
e-mail: g.hitchcock@miami.edu

Web Site:
www.rsmas.miami.edu/divs/mbf/

Gary Kirkpatrick, Ph.D. Project P.I.

Gary Kirkpatrick is a senior scientist and manager of the Phytoplankton Ecology Program at Mote Marine Laboratory in Sarasota, Florida. His graduate degrees in marine science are from North Carolina State University at Raleigh, where he focused on the physiological ecology of marine phytoplankton. His Phytoplankton Ecology Program has maintained a 12-year study of the phytoplankton community on the West Florida Shelf using high-performance liquid chromatography pigment analyses. More recently, he has been involved in the development and deployment of automated, optical-based harmful algal bloom detection technology.

Contact Information:
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, FL 34236
phone: (941) 388-4441, fax: (941) 388-4312
e-mail: gkirkpat@mote.org

Web Site:
http://isurus.mote.org/~pederson/phyto_ecol.phtml

Margaret Mulholland, Ph.D. Project P.I.

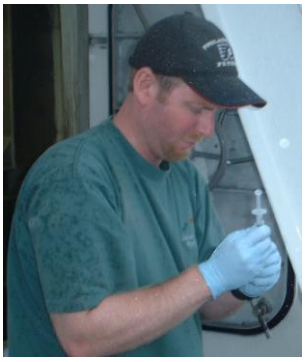
Dr. Margaret Mulholland is an associate professor in the Department of Ocean, Earth, and Atmospheric Sciences at Old Dominion University. She received B.S. degrees in geology and biology from the University of Notre Dame, M.S. and M.M.A. degrees in biological oceanography and marine policy from the University of Washington, and a Ph.D. in oceanography from the University of Maryland. Her research focuses on various aspects of carbon and nitrogen cycling in aquatic systems. The biogeochemical cycling of these elements affects the ecology of microbes in marine and estuarine systems. Particular aspects of these cycles being investigated in her laboratory include cultural eutrophication and nutrient pollution, marine nitrogen fixation, the uptake and regeneration of organic compounds by phytoplankton and bacteria, responses of microbes to high carbon dioxide and other climate change variables, nutrient competition between bacteria and planktonic mixotrophs, harmful algal blooms, and the effects of estuaries on biogeochemical cycling of elements in the coastal ocean.

Contact Information:
Margaret Mulholland
Department of Ocean, Earth, and Atmospheric Sciences
Old Dominion University
4600 Elkhorn Avenue
Norfolk, VA 23529
phone: (757) 683-3313
e-mail: mmulholl@odu.edu

Web Site:
http://sci.odu.edu/oceanography/directory/faculty/mulholland/index.shtml

Mulholland Lab Associated Researchers:
Peter Bernhardt
Leo Procise

Peter Bernhardt, M.S.



Peter is a Laboratory Manager at Old Dominion University (ODU). He received his B.S. and M.S. in Biology from Bloomsburg University. On ECOHAB cruises Peter is responsible for nitrogen fixation measurements using both $^{15}N_2$ and C_2H_2 Reduction techniques. He also conducts primary productivity measurements using $H^{13}CO_3$ and bacterial productivity using radio isotopes. In the laboratory, Peter is responsible for analysis of stable isotope samples using an Isotope Ratio Mass Spectrometer (IRMS) and analysis of dissolved free amino acids (DFAA), dissolved combined amino acids (DCAA) and peptide hydrolysis using High Performance Liquid Chromatography. His research interests include nitrogen and carbon cycling, marine nitrogen fixation, phytoplankton cultivation and the study of Harmful Algal Blooms (HAB). Peter is also involved in the development of research techniques in Isotope Ratio Mass Spectroscopy (IRMS), High Performance Liquid Chromatography (HPLC), Gas Chromatography (GC) and Flow Cytometry. Peter has participated in over 20 extended research cruises in the Atlantic and Pacific Oceans and the Gulf of Mexico.

Contact Information:
Laboratory Manager
Dept. of Ocean, Earth, and Atmospheric Sciences
Old Dominion University
4600 Elkhorn Ave
Norfolk, VA 23529

pbernhar@odu.edu
757-683-5603

Leo Procise, Ph. D.

Leo is a Research Assistant at Old Dominion University (ODU). He received his B.S. in Biology and Secondary Education from the University of Saint Francis and his Ph.D. at ODU under Dr. Margaret R. Mulholland. On ECOHAB cruises he runs various grazing experiments using *Karenia brevis* field samples. The goal of his research is to quantify the amount of nitrogen *K. brevis* obtains from grazing on picoplankton such as the ubiquitous cyanobacterium *Synechococcus*. His interest is the grazing ability of *Karenia brevis* on picoplankton.

Contact Information:
Research Assistant
Department of Ocean, Earth & Atmospheric Sciences
Old Dominion University
4600 Elkhorn Ave.
Norfolk, VA 23529-0276

lprocise@odu.edu
757-683-5989

Judith O'Neil, Ph.D. Project P.I.

Judy O'Neil is a biological oceanographer from the University of Maryland Center for Environmental Science (UMCES), Horn Point Laboratory, in Cambridge, Maryland. She studies nutrient and plankton dynamics in both open ocean and coastal regions, specializing in cyanobacterial and harmful algal bloom ecophysiology and trophodynamics. Dr. O'Neil received a B.S. degree in biology from Boston College, which included a semester program with the Sea Education Association (SEA), Woods Hole, Massachusetts. She went on to pursue an M.S. degree in marine environmental science at the State University of New York at Stony Brook and a Ph.D. in biological oceanography at the University of Maryland, College Park. She spent 10 years at the University of Queensland in Brisbane, Australia, studying cyanobacterial blooms and coral reef nutrient dynamics prior to her current position as research assistant professor at UMCES.

Contact Information:
Horn Point Laboratory
University of Maryland Center for Environmental Science
2020 Horns Point Road
Cambridge, MD 21613
phone: (410) 221-8411
e-mail: joneil@hpl.umces.edu

O'Neil Lab Associated Researchers:
Kevin Meyer

Kevin Meyer, Ph. D.

Kevin is a Graduate Research Assistant at the University of Maryland's Center for Environmental Science (UMCES), Horn Point Laboratory. He received his B.S. in Marine Science-Biology from the University of Tampa and his Ph.D. in Oceanography from UMCES Horn Point Lab under Dr. Judy O'Neil. On ECOHAB cruises Kevin assists with microzooplankton grazing experiments and collection, bacterial productivity experiments using H^3 labeled leucine and thymidine, *K. brevis* toxin experiments, and chlorophyll collection. In the laboratory he identifies and enumerates microzooplankton, enumerates bacteria via epifluorescent microscopy, and determines chlorophyll concentration from samples taken on cruises. His research interests are in microzooplankton grazing dynamics, microbial oceanography, and toxin production of harmful algal blooms.

Contact Information:
Faculty
Linn-Benton Community College

Kevin.A.Meyer.226@gmail.com
410-221-8284

John Walsh, Ph.D. Project P.I.

As a biological oceanographer, J.J. Walsh has focused on systems analyses of continental shelves over the past 40 years and has published more than 100 books, papers, and reports. In addition to prior studies of coastal upwelling off Peru, northwest Africa, Baja California, and Venezuela, his work has stressed the ecological components of global carbon and nitrogen budgets. He has used satellite images to constrain coupled numerical models of biophysical processes affecting species succession of plankton within the food webs of the Southern Ocean, the Bering/Chukchi/ Beaufort seas, the Mid-Atlantic/South Atlantic bights, the Sargasso/Caribbean seas, and the Gulf of Mexico. Continuing research involves simulation analyses of the food web consequences associated with the loss of ice cover in arctic seas. During recent years, this basic research has led to applied simulation analyses of the origin, transport, and fate of Florida toxic red tides in shelf waters of the southeastern United States. This work will be used to develop phytoplankton competition ecological models (affected by biochemical cycling of multiple elements and nested within physical circulation models) and is part of the newly formed Center for the Prediction of Red Tides (CPR) at the University of South Florida.

Contact Information:
Dr. John J. Walsh
College of Marine Science, University of South Florida
140 7th Avenue S
St. Petersburg, FL 33701
phone: (727) 553-1164
e-mail: jwalsh@marine.usf.edu

Bob Weisberg, Ph.D. Project P.I.

Dr. Robert H. Weisberg is a University of South Florida (USF) distinguished university professor and professor of physical oceanography in the College of Marine Science, where he heads the Ocean Circulation Group. He is an experimental physical oceanographer who combines observations and models for studies of ocean circulation and ocean-atmosphere interactions in the tropics, on continental shelves, and in estuaries. Dr. Weisberg's undergraduate education was at Cornell University. He received a Ph.D. in physical oceanography in 1975 from the Graduate School of Oceanography, University of Rhode Island, after which time he joined the faculty at North Carolina State University before moving to USF in 1984. His research began in estuaries and then progressed to equatorial studies in the Atlantic and Pacific oceans. In the early 1990s he initiated a program of study on the West Florida Shelf, combining observations with numerical models, and he recently returned to his work in estuaries. Along the way, he authored more than 100 articles in professional journals. He heads the coastal ocean component of the Coastal Ocean Monitoring and Prediction System (COMPS) program and was a founding member of the SouthEast U.S. Atlantic Coastal Ocean Observing System (SEACOOS) program. Professional service highlights include editor of the Journal of Geophysical Research–Oceans and member of the National Research Council Committee on New Orleans Regional Hurricane Protection Projects. Dr. Weisberg received the USF Distinguished University Professor award in 2007.

Contact Information:
Dr. Robert H. Weisberg
College of Marine Science, University of South Florida
140 7th Avenue S
St. Petersburg, FL 33701
phone: (727) 553-1568, fax: (727) 553-1189
e-mail: weisberg@marine.usf.edu

Web Sites:
http://ocgweb.marine.usf.edu
http://comps.marine.usf.edu