

Agenda

8:00am Registration, Continental Breakfast & Exhibits

8:30am Welcome (Granite State Room)

*Mark Wiley, University of New Hampshire
Perrin Chick, NEOSEC Past Chair, Seacoast Science Center*

9:00am Concurrent Sessions

- A. From Microbes to Whales: Recording and Sharing Diversity of Ocean Life (room 330)
- B. Tools for Learning about Ecosystem Diversity: "Intertidal Survivor" (room 338)
- C. Tools for Learning about Ecosystem Diversity: Concept Mapping Interdisciplinary Science Topics (room 334)
- D. Tools for Learning about Estuaries: Part 1 (room 336)

10:00am Morning Break

10:15am Concurrent Sessions

- D. Tools for Learning about Estuaries: Part 2 (room 336)
- E. From Intertidal to Deep Sea: Monitoring Ecosystem Diversity (room 330)
- F. Tools for Learning about Biodiversity: Under the Lens (room 334)
- G. Tools for Learning about Human Impacts on Diversity of Life: "Endangered Ocean Ecosystems" (room 338)

Plenary Sessions

11:30am A Few Words from NEOSEC (Granite State Room)

Diana Payne, NEOSEC Chair, Connecticut Sea Grant

11:45am Keynote: Discoveries of the Census of Marine Life: Making Ocean Life Count
to 12:30pm (Granite State Room)

Paul Shelgrove, Memorial University, Newfoundland, Canada

12:45pm Lunch, Networking & Exhibits

2:15pm Panel Discussion: Putting the Census of Marine Life in Context
(Granite State Room)

*Darlene Crist, Director of Communications, Census of Marine Life (Moderator)
Ann Bucklin, University of Connecticut, Census of Marine Zooplankton
Lewis Incze, University of Southern Maine, Gulf of Maine Area Program
Jeffery Bolster, University of New Hampshire, History of Marine Animal Populations
Linda Amaral Zettler, Marine Biological Laboratory, International Census of Marine Microbes*

4:00pm Wrap-up, Next Steps & Reflection

Session Descriptions and Presenters

A. From Microbes to Whales: Recording and Sharing Diversity of Ocean Life

Presented by the Encyclopedia of Life (EOL), an unprecedented effort to make available information for all species of life on Earth. EOL is currently undertaking a Marine Theme, promoting synthesis and dissemination of marine biodiversity information online worldwide, including many Census of Marine Life projects. Learn about new web tools and resources that are being developed and added to allow more people, including students, to contribute to the EOL in and out of the classroom and to enjoy learning about the living world.

Tracy Barbaro is the Project Coordinator for the Learning + Education Group of the Encyclopedia of Life, based at the Museum of Comparative Zoology at Harvard University. She focuses on outreach, the development of tools and resources to help educators and learners utilize the species content from the Encyclopedia of Life and facilitating the development of educational partnerships. Before joining EOL, Tracy taught middle school technology education in the Boston Public School system and was a Project Leader for the AmeriCorps National Service Program.

B. Tools for Learning about Ecosystem Diversity: "Intertidal Survivor"

Immersion Learning guides participants as they build models of rocky shores and sandy beaches and create intertidal creatures with adaptations from each habitat. "Intertidal Survivor", from Immersion's *Monterey Bay* program, will explain why intertidal zones are such harsh environments, as well as describe how to protect intertidal areas.

Katie Cubina of Sea Research Foundation holds an advanced degree in science and environmental education, and brings over 15 years of experience in marine education, media development, non-profit management, and work with informal science education organizations. She currently serves as Vice President and Executive Producer for Immersion Learning, a dynamic academic enrichment program that brings the exciting world of scientific discovery to students in classrooms, after-school programs, and other learning arenas.

C. Tools for Learning about Ecosystem Diversity: Concept Mapping Interdisciplinary Science Topics

The Center for Ocean Sciences Education Excellence - Ocean Systems will provide a short demonstration of concept mapping, then participants will analyze and rework concept maps created by ocean scientists, such as physical oceanographer Jim O'Donnell ("Ocean Currents"), biological oceanographer Deb Goodwin ("Seasons in the Sea"), and ecosystem modeler Andy Pershing ("Right Whale Prediction"). The resulting modular and flexible concept maps demonstrate to learners how organisms are intricately tied to their physical environment.

Carla Companion is a research associate for the Center for Ocean Science Education Excellence (COSEE) Ocean Systems. Prior to joining COSEE-OS, she earned her MS in Environmental Studies/Environmental Education from Antioch University New England and her B.S. in Marine and Freshwater Biology from the University of New Hampshire. In addition to helping run COSEE-OS Scientist-Educator Collaborative workshops and other projects, she has recently begun to facilitate webinars featuring scientist research and educator innovation and to coordinate a blog that allows for further interaction between scientists and classroom educators.

Christy Herren has been a research associate at the University of Maine's Darling Marine Center since 2007, where she works with the Center for Ocean Sciences Education Excellence -Ocean Systems. Prior to COSEE-OS, she earned her PhD in Marine Sciences at the University of California in Santa Barbara, and was a biological oceanographer for 3 years. She is now a scientist-educator "hybrid" who is enthusiastic about helping science researchers transform their cutting-edge data and stories for public audiences.

D. Tools for Learning about Estuaries: Part 1

Three National Estuarine Research Reserves come together to provide an in-depth exploration of estuary species, ecosystem biodiversity, water quality data resources, estuary research and monitoring, and topics including climate change, invasive species and storm water pollution prevention along New England's coasts.

Tools for Learning about Estuaries: Part 2

Participants will develop an understanding of how to lead their own audiences through some creative, offbeat and data savvy lessons in the biodiversity of estuary species and ecosystems.

Kit Van Wagner is Education Coordinator for the Narragansett Bay Research Reserve based on Prudence Island in Rhode Island's Narragansett Bay. She studied Environmental Science at Middlebury College and earned a master's in Science Education from Florida Institute of Technology. With 17 years directing marine science education programs, Kit has created meaningful outdoor experiences for countless audiences. Kit has also designed and developed educational brochures, exhibits, signage, and touch-screen kiosks. She enjoys commuting by ferry to work each day and exploring the New England coast for new surf spots.

Joan Muller is Education Coordinator for the Waquoit Bay National Estuarine Research Reserve on Cape Cod. A certified science teacher (K-8) with a Masters in Environmental Education, she has taught classroom science to students of various ages and abilities and has also worked for Massachusetts Audubon, National Wildlife Federation and as an interpreter for the National Park Service.

Kelle Loughlin is the Education Coordinator for the Great Bay National Estuarine Research Reserve, a program within the New Hampshire Fish and Game Department. She has served as Director of the Great Bay Discovery Center for over ten years. Prior to coming to the coast, Kelle served as the state-wide Freshwater Aquatic Education Coordinator in Concord, NH.

E. From Intertidal to Deep Sea: Monitoring Ecosystem Diversity

Presented by NERACOOS, the Northeastern Regional Association of Coastal Ocean Observing Systems, this session will showcase how ocean observing is being used in both formal and informal education. Participants will see how the Earth as a System is Essential (EaSiE) project of the Maine Mathematics and Science Alliance and the Seasons of the Sea exhibit at the Seacoast Science Center in Rye, NH have utilized the dynamic nature of ocean observing information. Participants will explore the valuable resource of ocean observing systems, including NERACOOS' real-time buoy data, and learn how to engage audiences in understanding the interactions between the Earth's land, oceans, atmosphere, and living world.

Ru Morrison is the Executive Director of the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS) which is one of the eleven regional associations of the NOAA Integrated Ocean Observing System (IOOS). Ru obtained his doctorate from the School of Marine Sciences of the University of Wales. His background is in optical oceanography, ocean color remote sensing, and ocean observing systems. While working as an Assistant Professor at the University of New Hampshire, he worked closely on water quality issues in the Great bay Estuary. He is also the Vice-Chair of the National Federation of Regional Associations for Coastal Ocean Observing Systems. Ru helped to raise funds from NASA and NOAA to create the Seasons of the Sea Exhibit at the Seacoast Science Center.

Joyce Tugel is a K-12 Science Specialist at the Maine Mathematics and Science Alliance (MMSA), and is the Project Director for the NOAA-funded Earth as a System is Essential: Seasons and the Seas initiative. Her work is primarily focused on professional development in science curriculum, instruction, and formative assessment. Joyce taught high school chemistry and physical science for ten years in Southern Maine. Prior to receiving her science teaching certification, Joyce was a researcher in environmental biogeochemistry at the University of New Hampshire.

Session E, continued

Perrin Chick is the Education Director at the Seacoast Science Center. She has been creating and delivering a wide range of programs at the Center and through local and national workshops for close to 10 years. As a former classroom teacher, Perrin's focus is strengthening curriculum connections and developing community-wide partnerships. In addition to her responsibilities at the Center, Perrin serves as a board member of Gulf Of Maine Marine Educators and is the Past-chair of NEOSEC. Perrin was on the exhibit design team that created the Seasons of the Sea exhibit and then created and presented supplementary programs and workshops.

F. Tools for Learning about Biodiversity: Under the Lens

The Sea Education Association (SEA) will help participants observe microbial life in water using inexpensive magnifiers from hand lenses to plastic field microscopes. Leave this session with a new way to show off the diversity of microbial life in every puddle of water.

Erik Zettler has been a member of the Woods Hole scientific community for many years, having worked as a Research Associate in the Biology Dept. at Woods Hole Oceanographic Institution before joining SEA. He has participated on over 50 research cruises on SEA and UNOLS vessels and has done terrestrial field work in Antarctica, Bermuda, Canada, Costa Rica, Spain, and USA. Whenever possible, he teaches in the field including on board the SEA vessels.

G. Tools for Learning about Human Impacts on Diversity of Life:

Endangered Ocean Ecosystems

Mystic Aquarium will lead participants through an interactive program focusing on how climate change, marine pollution, and by-catch from fishing are affecting the oceans' diversity of aquatic plants and animal life. Leave this session with activities and ideas which can be immediately translated into engaging programs.

Kelly Matis is the Vice President of Education and Public Conservation Programs at the Mystic Aquarium, a division of Sea Research Foundation, where she has worked for over eight years. Kelly enjoys the vast array of programs including preschool, camps, overnights, adult programs, school programs and more that the department offers because it provides the opportunity to reach a variety of audiences and teach them about their connection to and influence on the ocean environment.

MaryEllen Mateleska has been with Mystic Aquarium & Institute for Exploration's Education and Public Conservation Programs department for the past 8 years. Throughout this time working as both an Instructor and the Public Conservation Programs Manager, she has been able to follow her passion for educating the public on conservation efforts through hands-on community based programming.

Panelist Biographies

Darlene Crist is director of communications for the Census of Marine Life. She spearheaded outreach efforts and established an international media presence for the Census over the last seven years, including orchestrating a news conference to present its final results, which was covered in 56 countries in 27 languages. Darlene is also an award-winning writer, who authored *World Ocean Census* published by Firefly Books and *American Gargoyles: Spirits in Stone* published by Clarkson Potter.

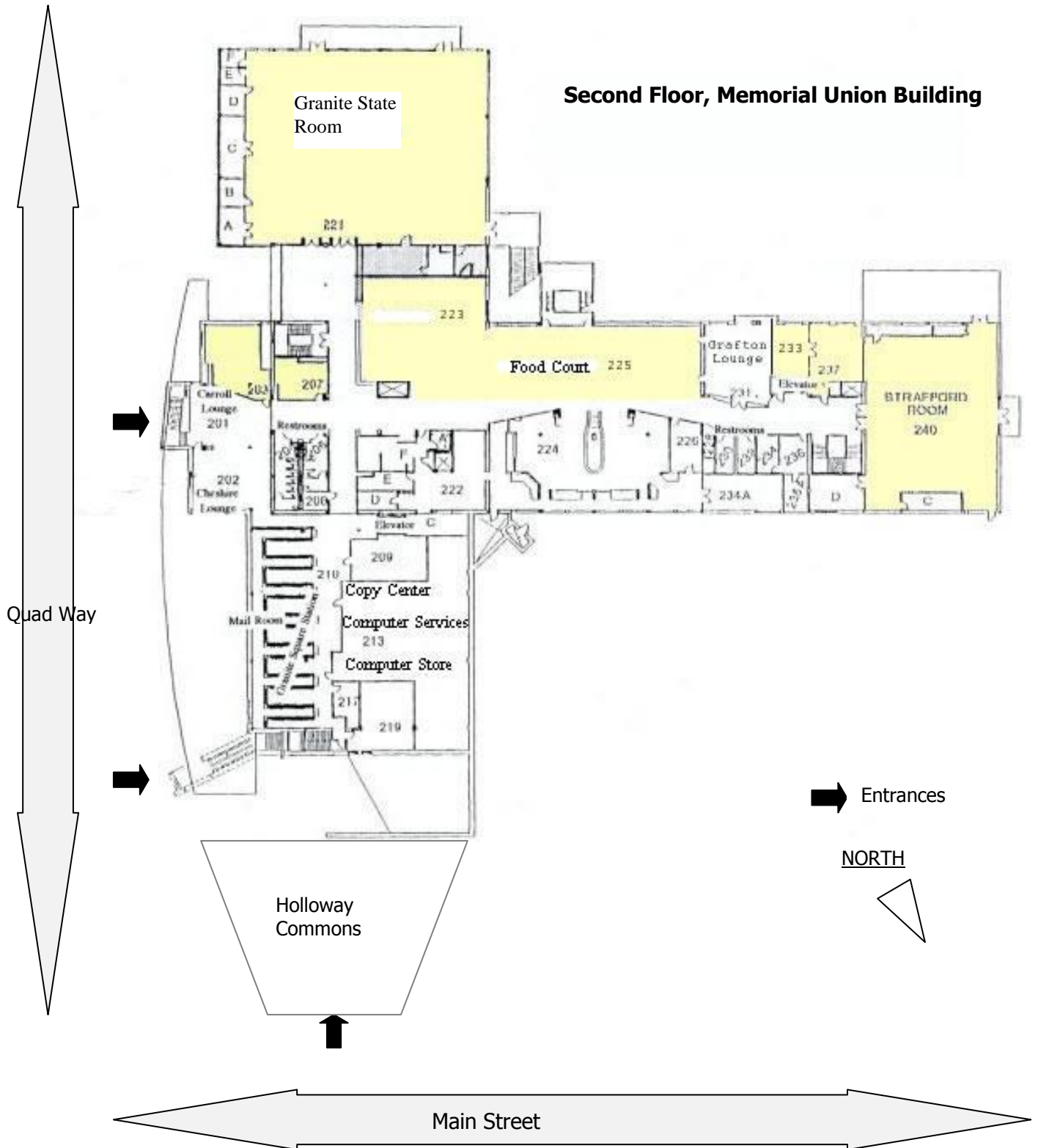
Ann Bucklin is a professor and head of the Department of Marine Sciences and director of the Marine Sciences and Technology Center at the University of Connecticut. During 1992 – 2005, she was a professor in the Department of Zoology and a member of the Institute for the Study of Earth, Oceans, and Space at the University of New Hampshire. She was a Fulbright Senior Scholar in Norway (1992-1993) and was elected Fellow of the American Association for the Advancement of Science in 1995. Since 2004, Dr. Bucklin has served as the principal investigator and lead scientist for a Census of Marine Life ocean realm field project, the Census of Marine Zooplankton (CMarZ). Dr. Bucklin received her B.A. in biology from Oberlin College and her Ph.D. in zoology from the University of California, Berkeley. She was a postdoctoral scholar at the Woods Hole Oceanographic Institution and a NATO postdoctoral fellow at the Marine Biological Association of the United Kingdom. The theme underlying her research interest – molecular ecology and evolution of marine organisms – developed from her early studies of sea anemones. Her current focus is the molecular ecology, phylogeography, and phylogeny of marine crustacean zooplankton.

Lewis Incze is Director of USM's Aquatic Systems Group and a Research Professor in the Department of Environmental Science. He is also an Adjunct Professor of Biology and is on the Faculty of the Graduate School. He is primarily engaged in research in oceanography, plankton ecology, fisheries and climate change effects. He currently teaches ESP 380 "Earth Systems and Climate Change" and ESP 399 "Biodiversity and Conservation" during alternating spring semesters.

W. Jeffrey Bolster is an Associate Professor of History at UNH whose current research is in marine environmental history. Connected with History of Marine Animal Populations, the historical arm of the CoML, Jeff has been part of the interdisciplinary UNH Cod Project for ten years. Their analyses of oceans past have appeared in numerous journals, including *Frontiers in Ecology and the Environment*, *Fish and Fisheries*, *Environmental History*, and *The American Historical Review*.

Linda Amaral Zettler is an Assistant Scientist at the Josephine Bay Paul Center at the Marine Biological Laboratory in Woods Hole, Massachusetts. She also holds a faculty appointment in the Geological Sciences Department at Brown University. For the last 6 years she has served as the Program Manager for the International Census of Marine Microbes that is examining the diversity, distribution and abundance of marine microbes and their environmental context in the World's Oceans.

Second Floor, Memorial Union Building



NEOSEC

New England
Ocean Sciences
Education Collaborative

Ocean Literacy Summit

Friday, November 12 2010

University of New Hampshire, Durham

Third Floor, Memorial Union Building

