

Understanding our Changing World

Studies of Large Whales to Small Plankton

42nd Annual Meeting of Massachusetts Marine Educators

Saturday, May 5, 2018

8:30am – 4:15pm

Quissett Campus at Woods Hole Oceanographic Institution



Art: Yinghua Li, gr. 10
Ann Arbor, MI. MME Art Contest

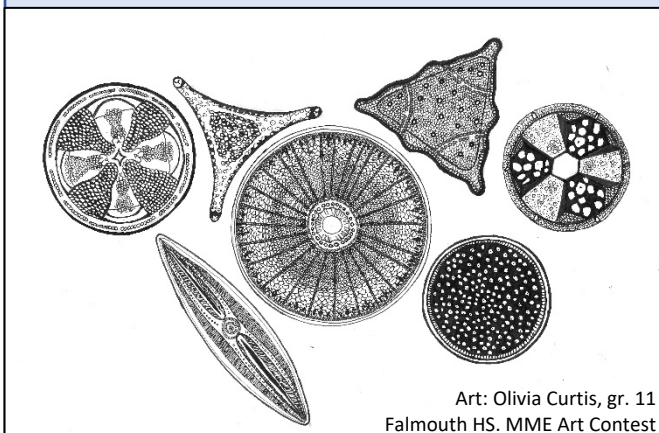
KEYNOTE SPEAKERS

The Singing Planet: Ocean Voices in a Rising Sea of Noise

Dr. Chris Clark, Imogene Johnson Sr. Scientist,
Founding Director Bioacoustics Research Program,
Lab of Ornithology, Cornell University

From Phytoplankton to Fish: The start of a long-term look at coastal shelf ecology

Annette Brickley, Education and Outreach
Coordinator, WHOI's NES-LTER (Northeast Shelf-
Long Term Ecological Research) Program,
STEMming the Gaps Consulting



Art: Olivia Curtis, gr. 11
Falmouth HS. MME Art Contest

SCHEDULE

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| 8:30 am | Registration in Clark Bldg, 5 th Fl. |
| 9:00 am | Welcome and Opening Remarks |
| 9:15 am | Keynote Lectures |
| 12:00 pm | Business Meeting, Awards, Lunch |
| 1:30 pm | Workshops (see back side of flyer)
Session 1 (1:30)
Session 2 (3:00) |
| 4:15 pm | Reception at Sea Education Association |

CHECK WEBSITE FOR MORE INFORMATION

www.ma-marine-ed.org

REGISTRATION

Regular, Walk-In and Student Registrations include a one-year MME membership, lunch, social reception, and all conference activities. Check the website and side 2 of this flyer for descriptions of workshops.

Registration: \$95 (\$65 conference fee and \$30 MME annual membership)

Walk-In Reg. (May 5): \$100 (\$70 conference, \$30 MME)

Full Time Student: \$45 regular; \$50 walk-in (includes MME student membership)

Lifetime Member: \$55

Institutional Member: \$55

Conference questions? Contact: Anne Smrcina
anne.smrcina@noaa.gov or 781-546-6007

REGISTER ONLINE

<https://massmarineeducators.wufoo.com/forms/2018-woods-hole-conference/>

MME ANNUAL MEETING WORKSHOPS (plus optional tours of Nobska Lighthouse and WHOI Dock)

Listening to Fish in the Classroom (session 2) Grades 4-12

Disciplines: Biology, Marine Ecology, Environmental Science, General Science, and a bit of Physics

Workshop Leader: Rodney Rountree, Ph.D., The Fish Listener

Description: It's not just whales! Marine soundscapes are filled with the sounds of many types of organisms, including fishes and invertebrates. Learn how scientists, resource managers and conservationists are beginning to use passive acoustic monitoring to learn about fish and other organisms. How do fish make sounds? Why? See and hear a diverse array of sounds from local waters. Learn how fish sounds and soundscape studies can be incorporated into your classroom. Get a fish-fart ringtone for your phone! Introduction video at: <https://youtu.be/NplXdD616WM>

Student Sentinel Sites: A Student-Centered Monitoring Program (session 1) Grades 6-12

Disciplines: Biology, Oceanography, Geology, Environmental Science

Workshop Leader: Joan Muller, Education Coordinator, WBNERR

Description: Join the Education Coordinator at Waquoit Bay Reserve to find out about two local learning modules that support student-centered citizen science projects. The Student Sentinel Site learning modules include activities focusing on sea level rise, changes in the landscape, plant quadrats and setting up student sentinel sites (areas monitored over time) and stewardship projects. *Bringing Wetlands to Market: STEM Curriculum Linking Salt Marshes and Climate Change* focuses on the values of salt marshes and impacts due to sea level rise, and includes engineering design and "Adopt-a-Wetland" activities. Learn about related real world research happening at the Waquoit Bay National Estuarine Research Reserve, gain an overview of these two resources, and try a sampling of the activities. Targeted at middle and high school STEM teachers.

Cape Cod's Real Pirates (session 1) Grades 3-5 with extensions to grade 8

Disciplines: History, Maritime Archaeology, Forensics

Workshop Leader: Marie Zahn, Archaeologist and Conservator/Science Education Coordinator – Whydah Pirate Museum

Description: In 1717, after plundering millions in gold and silver, a pirate ship met its fate off the coast of Wellfleet. The story of *The Whydah Galley* is about the diverse brotherhood of poor sailors, former slaves, and political exiles struggling against an era of oppression and conflict. Yet the story is also about the explorers, divers, researchers, and archaeologists who raised this compelling tale from beneath the seafloor and brought it back into the light 300 years later. The educational staff at the Whydah Pirate Museum has created a Unit Plan to use the true story of *Whydah*, to teach upper-elementary school students skills and standards in science, history, and language arts. Exploring the museum after completion of these lessons will reinforce and expand upon the concepts and standards they learned in the classroom. The final lesson plan and activities are designed with the expectation that it will be conducted after a class trip. Touring the museum's Sea Lab and Learning Center will provide students with context for exploring the science and technology used to locate, salvage, and preserve artifacts.

Do You Hear What I Hear? (session 1) Grades 3-6

Disciplines: Biology, Life Science, Physics (Waves)

Workshop Leader: Robert Rocha, Director of Education and Science Programs, New Bedford Whaling Museum

Description: The ocean is a noisy place. This workshop will explain some of the basics of sound in the ocean and will encourage you to try some of the activities the New Bedford Whaling Museum has added to its science programming. There will be a focus on cetacean echolocation. We will also demonstrate how you can access a new online resource that is part of a gift to the Whaling Museum from the Woods Hole Oceanographic Inst.

Data Stories from the Shelf: NES-LTER Schoolyard (session 2) Grades 6-12 (plus possible extensions for college level)

Disciplines: Biology, Life Science, Oceanography, Environmental Science, Chemistry

Workshop Leader: Annette Brickley, NES-LTER Education and Outreach Coordinator plus research scientists from the NES-LTER team

Description: The overarching goal of the Northeast (U.S.) Shelf -- Long Term Ecological Research program is to understand and predict how planktonic food webs change through space and time in response to changes in the physical environment, and how those changes impact ecosystem productivity, particularly of higher trophic levels. In this workshop, we will use real data from the project to analyze seasonal and annual changes in the ecosystem and connect them to chapters from Rachel Carson's *The Sea Around Us*.

Voyage off Woods Hole for Data Collection on a Mini Science Cruise (double session) Grades 4-12

Disciplines: Biology, Geology, Oceanography, Environmental Science, General Science

Workshop Leader: Rob Reynolds, Zephyr Marine

Description: (This field trip requires a \$10 additional fee to help defray vessel operating costs.)

Travel out from Woods Hole around the Elizabeth Islands and into Vineyard Sound to view seafloor geology and marine life via a Remotely Operating Vehicle (ROV), touch marine life collected with sampling equipment including sediment grabs and plankton tows, and observe local seals and seabirds. Bring your binoculars and camera. Check the weather before you leave home in the morning and wear appropriate clothing (layers, rubber-soled shoes, hat). If you suffer from seasickness, take medication before getting on the boat, not after you start feeling queasy.

Marine STEAM (session 2) Grades K-3

Disciplines: Life Science, Art

Workshop Leader: Anne Smrcina, Stellwagen Bank National Marine Sanctuary Education and Outreach Coordinator, MME Marine Art Contest Dir.

Description: There's a fascinating world in our ocean backyard. There are enormous whales and alien-like plankton, beautiful jellies and ugly fishes. In this workshop we will explore the diversity of life in local waters and look at several ways students can learn about the variety of species, predator-prey relationships, animal adaptations and how (or if) parents care for their young. We will use art as a learning and communication vehicle by developing animal portraits, wall murals, and student-written picture books. We will view student entries from past years of the MME marine art contest.