

The Massachusetts Marine Educators present the:
North Shore High School Marine Science Symposium
Wednesday, March 13, 2019

Snow Date: Thursday, March 14th, 2019
Salem State University, 352 Lafayette Street, Salem, MA

Please join the Massachusetts Marine Educators (MME) for an exciting glimpse into the marine world through a diversity of perspectives from around New England. Presenters will include experts from Northeastern University, the Seacoast Science Center, Mass Audubon, NOAA Fisheries, Gloucester Biotechnology Academy and others. Students will have the opportunity to investigate current and on-going projects in marine science and related disciplines.

Symposium Schedule:

8:00-8:45 Presenter and student registration
8:45-8:55 Welcome/opening remarks
9:00-9:40 Session 1
9:50-10:30 Session 2
10:40-11:20 Session 3
11:30-12:10 Keynote
12:20 Lunch
1:00 Event ends



Featured Presentation: *More Than The Sum*, presented by Dr. Robyn Hannigan, Founding Dean of UMass Boston's School for the Environment. Highlighted in the media over the years, Dr. Hannigan's research centers on what happens before death, specifically the death of billions during mass extinctions and how climate change drives these events. In this presentation, Dr. Hannigan will share her story of growing up as a mixed heritage, low income kid with a learning disability, becoming the first in her family to finish college. She will share how she embraced her personal history to gain success in a field where women and minorities are few and far between. The presentation will be a conversation about the pursuit of success in science and how to empower others, and yourself.

Workshops: There will be 9 hands-on marine science workshops that will be repeated in each of the three time slots. Students will attend two workshops during the day in addition to the featured presentation and the ocean science fair.

Ocean Science Activity Fair: Presenters will lead short activities and demonstrations at tables, and students will have 40-minutes to rotate between different tables, learning and networking with marine science professionals.

Space is limited, and registration will take place on a first-come, first-served basis.

Steps to register:

- 1) Fill out the **registration form** here: <https://tinyurl.com/hsmssnorthshore2019>
- 2) **Pay** online via PayPal, or initiate a purchase order for payment by check. An invoice will be sent to you upon registration. With the exception of scholarship recipients, full payment is due by the day of the event.
- 3) Collect **student workshop preferences** and submit to the google form: <https://tinyurl.com/northshoreworkshops> by Monday, February 11th. To the greatest extent

possible, workshop attendance will be assigned based on student preferences while ensuring an even distribution of participants in each session. If you prefer to submit workshop preferences in written form, please contact Emily at e.duwan@northeastern.edu.

- 4) Collect **media releases** (below) for every student and chaperone, and bring these with you on the day of the event.

Workshop preferences and final # of students attending are due February 11th. Schools will be charged per student, based on the numbers we have on February 11th. Even if you bring less students on the day of the event, you will be charged for the number registered on February 11th

Cost: \$13 per student includes registration materials, morning refreshments and lunch.

Scholarships: We are pleased to offer a limited number of scholarships to cover student registration. This opportunity is aligned with national efforts to create and foster diversity in the pursuit of academic and career opportunities related to STEM. The scholarships are made possible through the generous support of Northeastern University, Massachusetts Marine Educators, Friends of Lynn and Nahant Beach, and others.

Scholarships will be offered to students in districts where >40% of students are classified as economically disadvantaged. To determine if your district is eligible, please visit the Massachusetts Department of Elementary and Secondary Education website district profiles at: <http://profiles.doe.mass.edu/>.

Scholarships will be granted on a first-come, first-served basis until all funds have been allocated. Due to the limited number of scholarships, there is no guarantee that the entire group of students from a given school will be supported. Scholarship funds will cover student event admission fees only, and all schools are responsible for providing their own transportation to and from the event. Teachers interested in applying for scholarship funds should complete the form at the end of this packet and submit to Emily Duwan via email: e.duwan@northeastern.edu or fax: 781.581.6076.

Refreshments: A light snack will be provided during the registration period, as well as lunch for all registered students, teachers, and chaperones. Vegetarian options will be available. *If any participant has other specific dietary limitations besides vegetarian, they are advised to bring their own snack and lunch.*

Other logistics: We request a chaperone ratio of 1:10. Schools are responsible for their own transportation.

If you have any questions, please email Emily at e.duwan@northeastern.edu or call 781-581-7370, x373. Please visit ma-marine-ed.org for more information.



**Northeastern
Marine Science Center**





Massachusetts Marine Educators

New England Aquarium

Central Wharf

Boston, Massachusetts 02110

Media Release

By signing below, I hereby:

1. Grant to Massachusetts Marine Educators (MME), the right and permission to use, reuse, and/or broadcast, publish, and distribute in any form whatsoever, including print, photograph, or by electronic means such as the World Wide Web, the media (images, video, and/or audio) that is the subject of this release.
2. Use my name in connection to any media taken.
3. Waive any right to inspect or approve of the original or any copies of the media that is subject to this agreement.

I understand that I will not be compensated in any way for the use by MME of any media subject to this agreement and that any use by MME of an image(s), video(s), or audio clip(s) that is subject to this agreement shall not constitute an unreasonable, substantial, or serious interference with my privacy.

I hereby certify that I am over eighteen years of age, and competent to contract in my own name.

I have read and understood the foregoing.

Participant name

Street address

City, state, zip

Participant signature

Date

If participant is under age 18, please also complete the following:

I further state that I am the Participant's parent/guardian and am fully competent to sign this agreement; and that I execute this release for full, adequate and complete consideration fully intending for myself, for the participant and for the participant's family, estate, heirs, administrators, personal representatives or assigns to be bound by same.

Parent/guardian name

Parent/guardian Signature

Date

Workshop Offerings

Use the **workshop number** in designating student preferences on the online google form:

<https://tinyurl.com/northshoreworkshops>

To the greatest extent possible, workshop attendance will be assigned based on student preferences while ensuring an even distribution of participants in each session.

Workshop preferences and final # of students attending are due February 11th. Schools will be charged per student, based on the numbers we have on February 11th. Even if you bring less students on the day of the event, you will be charged for the number registered on February 11th.

#	Topic	Content
1	Getting to Know the North Shore Seashells	Over 50 species of marine mollusks are commonly encountered on North Shore beaches. These include a clam that can live for over 500 years and may hold the key to curing Alzheimer's Disease, a distinctively marked snail that dispatches its victims with neuro-toxin, and a local scallop with 100 gray eyes that can "swim" away from predators. After learning about these and other fascinating mollusks, the participants will study how invasive species are negatively impacting not only our local mollusks, but the marine environment at large. Presented by the Friends of Lynn and Nahant Beach
2	Marine Mammal Rescue and Anatomy	Seals come on to the beach to rest and soak up the sun. Yet, what happens when a seal is in distress and in need of rescue? Students will learn all about the common species of the Gulf of Maine, find out how our Marine Mammal Rescue Team responds to seals on the beach. Using real seal and dolphin bones, students will "reconstruct" skeletons and learn about the species' form and function. Fantastic images and hands-on activities make this program unforgettable. Presented by the Seacoast Science Center
3	Fluid and Dynamic: Hacking The Ocean-Related Career	"What do you want to be when you grow up?" is a dumb question. Don't let old thinking stick you in a box. Join an active discussion about busting out of boxes, cross-pollinating careers, applying creativity to your work, and forging new paths in a bold future. In the face of some of the greatest challenges our society faces, we need to think, act, and work differently. How will you blow up the status quo? Presented by ollie
4	Sea-Run, Go! Using Technology to Learn about Historic Sea-Run Fish	Most fish live in either salt or freshwater. But did you know some species live in both? We call these species sea-run fish, and they are an important part of salt and freshwater ecosystems. Unfortunately, some of these historic fishes are now listed under the Endangered Species Act. We'll use games and a new app to learn about: the history of sea-run fish, habitat connectivity, diadromous life cycles, and a call to action! Presented by NOAA Fisheries Service
5	Seeking Relief from Sea Level Rise - Student Mapping and Leadership Initiative	How can high school students help their towns prepare for rising sea level, and increased storm surges? What tools are available to help us see what areas are most vulnerable to coastal flooding? Learn how high school students are helping Mass Audubon and local communities plan and prepare for the future. Use maps to assess vulnerability of coastal Massachusetts communities, and beyond! Presented by the Mass Audubon
6	Innovative Ocean Resources: Aquaculture, Seaweed, and Bioplastics	Join us to learn about aquaculture and new markets for seaweeds. On Hurricane Island, we have been researching how to effectively grow scallops and kelp. After hearing about our research, you will explore different uses of seaweeds, from foods to bioplastic! You will taste seaweed products and make your own bioplastic to take home. Presented by Hurricane Island Center for Science and Leadership
7	Beachcombing-- Which Critters Can You Identify?	Do you enjoy beachcombing? Have you come across shells, crabs or other items that you wish you knew more about? Come explore the world of invertebrates. You will be able to handle several specimens (non-living) of mollusks, echinoderms, arthropods and more. You will learn what they are, some cool facts about them and discover how they live. After this workshop, you will definitely know more about invertebrates and other critters found on the beach! Presented by Norfolk County Agricultural High School

8	Marine Plastic Pollution	<p>Join us to learn how plastic pollution can harm marine life and how you can reduce plastic litter in our own community. After learning about the steps the Beach Sisters High School Peer leaders are taking to reduce plastic pollution in Lynn, you will make your own reusable T-shirt bag and participate in an art project to help raise awareness.</p> <p>Presented by Beach Sisters Peer Leaders of Northeastern University Marine Science Center and Girl's Inc.</p>
9	Mussel Feeding Experiment	<p>Mussels are filter feeders that are important organisms in our marine environments. Mussels are sustainably grown for food in aquaculture as well as for bioremediation to prevent algal blooms resulting from eutrophication. This workshop will observe and measure filter feeding rates in the blue mussel <i>Mytilus edulis</i>.</p> <p>Presented by Cat Cove at Salem State University</p>

SCHOLARSHIP APPLICATION FORM

North Shore High School Marine Science Symposium

Please return this via email to e.duwan@northeastern.edu or fax to 781-581-6076. Scholarships will be awarded on a first-come, first-served basis, based on the date we receive this form.

School Name: _____

District Name: _____

Lead Teacher: _____

Number of Students Registered for Event: _____

Number of Scholarships Requested: _____

Eligibility:

Is your school/district eligible for a scholarship based on the criteria of greater than 40% of economically disadvantaged students enrolled? To determine if your school/district is eligible please visit the Massachusetts Department of Elementary and Secondary Education website district profiles page: <http://profiles.doe.mass.edu/>.

Yes No

Transportation:

Is your school/district able to provide transportation for participants to/from the event?

Yes No