

The 23rd Annual High School

# Marine Science Symposium

## *Diving into Marine Careers*

*Featuring  
Keynote  
Speakers*

W. Bruce  
Strickrott

Dr. Brian  
Rothschild

**Wednesday, March 22, 2006**

**8:00 am – 1:00 pm**

**UMass–Dartmouth**

*Sponsored by*

**The University of Massachusetts at Dartmouth  
and Massachusetts Marine Educators, Inc.**



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## The High School Marine Science Symposium

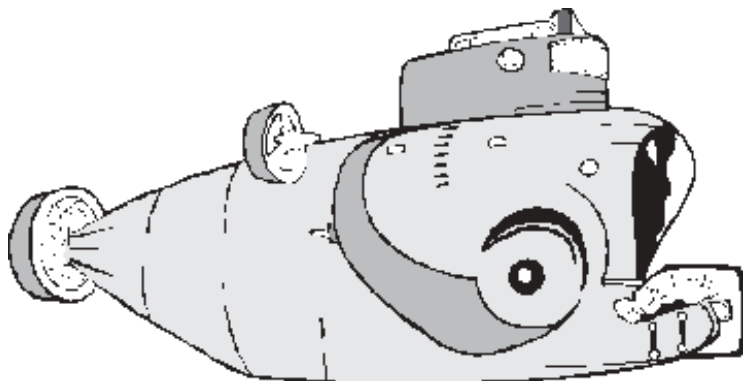
Join us for an exciting glimpse into the marine world from a diversity of speakers from throughout Massachusetts, including researchers from the University of Massachusetts' Marine Science Research Center (SMAST) and its Biology, Chemistry, and Engineering Departments. Students will have the opportunity to investigate current and on-going projects in marine science and related disciplines.

### **MANNED DEEP SEA RESEARCH AT WOODS HOLE OCEANOGRAPHIC INSTITUTION**

**W. Bruce Strickrott**, Chief Pilot of Deep Submergence Vehicle ALVIN will present a pictorial overview of the history of manned deep sea research at the Woods Hole Oceanographic Institution. He will include historical pictures of the submersible ALVIN as well as recent pictures of the submersibles and of the areas that they visit with their submersibles. He will also share the plans for a new replacement submersible scheduled to be on-line within three to five years. The presentation will include a few short animations and videos.

### **DISCOVERY, EDUCATION AND JOBS IN MARINE SCIENCE**

**Dr. Brian Rothschild**, Dean of the University of Massachusetts – Dartmouth School for Marine Science and Technology, will discuss the wonders of the ocean, the ocean currents and the living organisms and how they will change in a changing environment. How do we prepare ourselves to understand these wonders and make new discoveries? What do we have to learn about biology, physics and chemistry? What does the job market look like in the future?



Please use the enclosed form to register your students

### **If you have registration questions please contact:**

Robert Rocha  
ECHO Community Science Programs Manager  
New Bedford Whaling Museum  
18 Johnny Cake Hill  
New Bedford, MA 02740  
(508) 997-0046 ext. 149  
[rrocha@whalingmuseum.org](mailto:rrocha@whalingmuseum.org)

### **If you have Program Information questions please contact:**

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### **If you have high school science related questions about the symposium, please contact:**

Margaret Brumsted  
Science Department  
Dartmouth High School  
(508) 961-2700  
[mbrumsted@dartmouthhps.org](mailto:mbrumsted@dartmouthhps.org)

#### 14. A Teacher's View from Deep in the Ocean

*Margaret Brumsted, Dartmouth High School*

Very few teachers are lucky enough to spend time in a research submersible far beneath the surface of the ocean. Share Ms. Brumsted's experiences in the Atlantic Ocean during the summer of 2005. A variety of weather situations made this a very interesting and educational experience.

#### 15. Local Invasive Creature

*Dr. David Welty, Fairhaven High School, Academic Coordinator in conjunction with NE COSEE*

Learn about nonnative coastal species: Who they are and how they got there. Discover how to identify, sex, and measure non-native and native crab species.

#### 16. Fishing Life's a Drag, Shuck It!

*Tove Bendiksen, Fairhaven Public Schools, Working Waterfront Festival Education Coordinator*

New Bedford has regained its position as the most lucrative fishing port in the USA! What is the difference between a dragger and a scalloper, anyway? Learn how to use the Working Waterfront Festival (WWF) curriculum guide to identify fish species, types of boats and gear, locations of fishing grounds and lists of informative web resources. Learn how you can become involved in the 2006 WWF and help celebrate America's oldest industry!

#### 17. SEA for High School Students

*Judith Froman, Dean of Enrollment, Sea Education Association*

The Sea Education Association offers three-week summer courses for students interested in the ocean environment. The program combines intensive classroom investigations with hands on experience aboard a traditional sailing vessel. College credit is offered in some courses.

#### 18. The PCB Legacy in New Bedford Harbor: Working to Clean Up PCBs and Make Harbor Seafood Safe to Eat

*Stacy Greendlinger and Dave Dickerson, US Environmental Protection Agency*

Find out about the \$600 million cleanup underway in the waters of New Bedford Harbor and discover how the persistent nature of PCBs impacts marine life and your health. This session will combine hands-on activities with a Power Point presentation.

#### 19. Whale Hunting: A Matter of Survival

*Robert Rocha, Community Science Programs Manager, New Bedford ECHO Project*

Whale hunting has been banned in most parts of the world. However, subsistence whaling is still allowed among certain native populations. Whaling is crucial to the survival of these cultures for a variety of reasons, not just for food. This workshop will highlight how polar scientists in Barrow, AK, have worked with the Inupiat to maintain their whaling culture and weave generations of knowledge into scientifically recorded data. Images will include a bowhead whale being flensed.

#### 20. Learning How to Dive

*Bob Mercer, Deke Kelly and Steve Mogilnicki, Bob's Sea and Ski*

This workshop will serve as an introduction to open water and SCUBA certification. You will also learn about the variety of sights and colors in New England waters.

#### Schedule of Events

8:00 am-8:45 am	Registration
8:45 am-9:00 am	Introduction and Welcome
9:00 am-9:30 am	Keynote Address – W. Bruce Strickrott, ALVIN Chief Pilot
9:45 am-10:30 am	Workshop A
10:45 am-11:30 am	Workshop B
11:45 am-12:15 pm	Final Presentation – Dr. Brian Rothschild, Dean UMD-SMAST
12:15 pm-1:00 pm	Lunch and Closing

*The cafeteria will be open to attendees wishing to purchase lunch.*

#### REGISTRATION

**Cost:** \$10.00 per student includes registration materials and morning refreshments. Participants must provide their own lunch or purchase lunch at the cafeteria. **Please indicate on the registration sheet whether your group will be purchasing lunch.**

**Advance registration is required. Register by March 1, 2006.**

**Participation is limited to the first 400 paid registrants.**

**Confirmations and cancellations will be made via email ONLY.**

Teachers may use the attached form to register or may register their students via email, ([rrocha@whalingmuseum.org](mailto:rrocha@whalingmuseum.org)), but they must send a check before the March 1st deadline. Students must be accompanied by their teacher. We recommend a ratio of one teacher for each ten students. Please use the enclosed registration form. There will be about 20 workshops that will be repeated in each of the two time slots. Students will attend two workshops during the day in addition to the keynote address and final presentation. Workshop attendance will be assigned by MME on a first-come, first-served basis. On the morning of the conference, workshop tickets will be provided to teachers to issue to their students. A maximum of two students from each school may attend an individual workshop during each time slot.

**Register early to ensure your place at this popular conference.**

**NOTE: Confirmations and snow cancellation information by email only.**

**Please check your emails for key conference updates.**

## WORKSHOP TOPICS

### 1. Fisheries Biology: Examination of Sea Scallops and Lobsters in the Lab and at Sea

*Chris Sarro and Brent Courchene, UMass–Dartmouth-SMAST*

Lobsters and sea scallops are the number one and number two most economically important commercial species in New England. Come see how we study these animals in the lab and at sea using underwater video and SCUBA.

### 2. The Science of Survival at Sea

*Susan McDonald and David Kane, Northeast Maritime Institute*

Northeast Maritime Institute in Fairhaven, MA, provides professional training to the marine industry, from captain's courses to firefighting to electronic navigation systems. In this workshop, you will be introduced in the use of survival suits and life rafts as well as other survival gear and exercises. Prerequisites: Willingness to put on a survival suit and dive into a life raft!

### 3. Sea Turtle Strandings in Cape Cod Bay

*Leah Dower, Massachusetts Audubon Society, Wellfleet Bay*

Each winter, sea turtles wash ashore on the beaches of Cape Cod Bay. Many of them are still alive and may be rehabilitated with our help. In this session you will find out what types of sea turtles strand, why they strand, how we help, and what we have learned from these efforts.

### 4. Is it Safe to Go in?

*George R. Hampson, Woods Hole Oceanographic Institution and UMass–Dartmouth – SMAST*

What's happening to our harbors, estuaries and beaches? What are the effects of oil spills, natural erosion, recent development and other impacts? How can you help?

### 5. New England's Basking Sharks

*Carol 'Krill' Carson, Captain John Boats and Bridgewater State College*

The Basking Shark is the largest shark that filter feeds in New England waters. Although they are often sighted offshore from April – September, little is known about their biology, distribution and migratory patterns. Learn how the New England Basking Shark Project (NEBShark) is enlisting the services of the general public and area organizations to learn more about these mysterious giants of the deep.

### 6. Renewable Energy from the Ocean

*Patricia Harcourt, Waquoit Bay National Estuarine Research Reserve*

Fossil fuels are in short supply and they are harmful to the environment. We will investigate ways to use wave energy as a resource and use real-time data to locate the best places on the New England coast for wave-powered generators.

### 7. White Shark of Naushon Island

*John Chisholm, Massachusetts Division of Marine Fisheries*

In the Fall of 2004 a female white shark became trapped in a small estuary on Naushon Island. A team of scientists and fishermen eventually freed her. This lecture will

chronicle the team's efforts during the two week event. It will also cover what we know about white sharks in MA.

### 8. Wildlife of the Beach – Research and Conservation

*Jamie Bogart, Lloyd Center for Environmental Studies*

Learn how to survey and protect endangered species of the beach and gather beach data used to help detect ocean health. Piping Plovers and Diamondback Terrapins are featured, followed by a short segment on 'beached bird surveys'.

### 9. Martyr to Freedom: Life and Death of Capt. Daniel Drayton

*Zachary Martin, Providence College / UMass–Dartmouth / Bristol Community College*

Capt. Daniel Drayton is a relatively unknown figure of local New Bedford and American history. He lived the life of an Atlantic Coastal Trader and Abolitionist. Although his life was filled with ambition, in the end it was distracted by failure. History sometimes forgets that those that have failed are just as important as those who have succeeded. This is his story.

### 10. Marine Habitat Protection and Enhancement

*Vin Malkoski, Massachusetts Division of Marine Fisheries*

Marine habitats are facing threats from a variety of sources and activities. This workshop will outline the sources of these threats, the potential impacts, and the steps taken to avoid or minimize the damage. We will also discuss mitigation and restoration options such as artificial reefs.

### 11. Explore the Westport River Watershed

*Shelli Perry, Westport River Watershed Alliance*

Using a special watershed model, students will observe how local landscape impacts the water quality of marine ecosystems of the Westport River and Buzzards Bay. Hear about projects being conducted to clean up the Westport River that will benefit marine species.

### 12. Gulf of Maine Invertebrate Identification

*Robert Michelson, Stellwagen National Marine Sanctuary*

Participants will learn how to identify 73 species of Gulf of Maine invertebrates, including several species of invasives of special concern to scientists who have requested the SCUBA diving / snorkeling communities' assistance in monitoring their spread throughout the region. A new diver education program provided by the Stellwagen Bank National Marine Sanctuary.

### 13. Eelgrass Restoration in Boston Harbor

*Ross K. Kessler, Massachusetts Division of Marine Fisheries*

Eelgrass (*Zostera marina*) is a marine plant that historically inhabited sub tidal coastlines from Greenland to Florida. A lot of eelgrass habitat has been lost to natural and human caused factors. There are numerous efforts to restore eelgrass to our coastlines. Come see and hear what the MA Division of Marine Fisheries is doing to restore eelgrass in Boston Harbor.