

KEYNOTE SPEAKER

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Urban Coast Institute

It has been five years since the US Commission on Ocean Policy issued its landmark report setting out a *"An Ocean Blueprint for the 21st Century"* and calling for national commitment to lifelong learning on ocean issues. While much remains to be done, the National Oceanic and Atmospheric Administration has formed an Office of Education, states including New Jersey are developing ocean action strategies and Governors are joining together to support regional ocean ecosystem-based management. The new Administration has formed an interagency Ocean Policy Task Force to set a new direction for the nation's ocean policy in the face of growing challenges such as climate change, sea level rise, ocean acidification, offshore energy development and continuing pollution and fisheries decline. Given these emerging policies and the challenges, it has never been more important that we strengthen students awareness of the importance of oceans, and have a ocean and scientifically literate public to make informed policy choices.

SCHEDULE OF EVENTS

8:00 - 8:30am	Registration
8:30 - 9:00 am	Welcome & NJMEA Annual Meeting
9:00 - 9:30 am	Keynote Address
9:30 - 10:30 am	Session One
10:40 - 11:40 pm	Session Two
11:50 - 12:45 pm	Lunch
12:50 - 1:50 pm	Session Three
2:00 - 3:00 pm	Session Four
3:00 pm	Surveys, Certificates, & Door Prizes

DIRECTIONS

Monmouth University

- **From the Garden State Parkway:** Take Exit 105. The Parkway off ramp leads directly onto Route 36 East. Continue on Route 36 East approximately three miles to Route 71 South. Go approx. one mile and Route 71 will fork left and become Cedar Avenue. Follow Route 71/Cedar Avenue for approximately one half mile. Continue on 71 South past the traffic light for Larchwood Avenue. Proceed past the first entrance to the University, which is on your right. About 200 feet past the first entrance, turn right at the wrought iron gates and go up the main driveway. Visitor parking (Lot 11) is on the left, slightly past Wilson Hall.
- **From the NJ Turnpike:** From the South, take Turnpike North to Exit 7A. From the North, take Turnpike South to Exit 11 (Garden State Parkway South). After the toll plaza, take I-195 East to Shore Points. Approaching Belmar, I-195 becomes NJ Route 138. After crossing the Garden State Parkway, exit right to NJ Route 18 North, marked Eatontown. Take the Deal Road exit and drive east to the intersection at Monmouth Road. Turn left and proceed to the third traffic light, which is Cedar Avenue. Turn right onto Cedar (also labeled NJ Route 71 South). Follow Route 71/Cedar Avenue for approximately one half mile. Continue on 71 South past the traffic light for Larchwood Avenue.
- **From Trenton and Points West:** Take I-195 East, and follow directions outlined in #2 above.
From the Freehold Area: Take US Route 9 South to I-195 East. Follow directions outlined in #2 above.

For more information, visit www.monmouth.edu

New Jersey Marine Education Association



TEACH AT THE BEACH

(A Professional Development Opportunity for Teachers)

Friday, May 14, 2010

Hosted by
Monmouth University
School of Science
Urban Coast Institute
&
NJ Marine Sciences Consortium/
New Jersey Sea Grant

Earn six Professional Development Credits
while learning about the environment
(NJDOE Provider #999)

**This popular program is limited to 125
participants**

For more information visit us at:
www.NJMarineEd.org

TEACH AT THE BEACH

A great way to learn about our local marine environment is through our annual Teach at the Beach event. This year's program will be hosted by the Monmouth University's School of Science's Urban Coast Institute on May 14, 2010. Monmouth University and the New Jersey Marine Sciences Consortium will include programs that cut across disciplines and allow you to bring the marine environment into any classroom. Lessons and other handout materials will be distributed during each activity.

Registration is due by May 1 2010, but some courses will fill up quickly. Register early to get your first choice and keep prices down. Lunch will be provided.

PROGRAM SELECTIONS

1. Ecology, DNA and the Future of Microbial Source Tracking (Monmouth University—Urban Coast Institute). Fecal pollution from human and natural sources enters soil or watercourses, mixes, then reemerges as a nuisance of unknown origin. Before remediation is attempted, the sources and identities of pollution must be identified. When multiple sources are present, numbers must be subdivided into categories of pollution to define relative importance and select appropriate methods of remediation which are very different for examples such as humans and avifauna pollution. Rather than depending on a single method, we recommend a tiered approach which takes advantage of ecological parameters and conventional microbiology to provide context for more precise DNA data and related statistics. (High School, 1 hr., Session 1)

2. Benthic Habitat Mapping Tools and Techniques (Monmouth University—Urban Coast Institute). Application of techniques will be used to identify and characterize marine benthic habitats, including echosounders, multibeam bathymetry and backscatter, sidescan sonar, sub bottom profiling, underwater video, and Satellite and aerial remote sensing. An overview of positioning and data acquisition techniques will be described and demonstrated using local data and examples to give description of seabed conditions and bottom type classifications. Why this data is important to for environmental and fisheries management will also be discussed. (High School, 1 hr., Session 2)

3. Life is a Beach (Monmouth University School of Education). Explore the myriad life styles and forms of organisms that live in, under, over and around New Jersey beaches. Discover how are these living things are adapted to their particular life styles? (Grades K-8, 1hr., Session 1 or 3)

4. Truth *IS* Stranger than Fiction: Using Real World Environmental Concerns to Write Eco-Literature (Monmouth University Department of Communication). This workshop will examine actual threatened species and imperiled habitats from ocean and coastal environments, paying attention to identifying the drama and interesting elements that might lend themselves to shore stories, novels, poems, etc. writing methods will be discussed, as well as how students can produce their own eco-adventure stories. Science teachers particularly enjoy the idea that this makes science more accessible to the general public. (Middle/High School, 1 hr., Session 3)

5. Lenape and the Jersey Shore (NJ Marine Sciences Consortium/NJ Sea Grant Education Program). This session will provide a historic overview of life along the Jersey Shore from the perspective of New Jersey's Native Americans. You'll have the opportunity to try your hand at fire by friction, traditional hunting and fishing techniques and other Lenape-based activities that you can duplicate in your classroom to demonstrate what life was like along our coast thousands of years ago. (Grades K-8, 1hr., Session 4)

6. Coastal Processes Field Trip (Stevens Institute/NJ Marine Sciences/NJ Sea Grant Education Program). Gain an in-depth understanding of beaches and the processes that influence them during this field trip session to a nearby beachfront location. Through discussion and hands-on activities you will learn about coastal processes (winds, waves, currents and tides), the origins of sand and its movement, beach zonation, the importance of dunes and the challenges of coastal erosion. Hands-on demonstrations of beach profiling, longshore current measurement and sand sampling will be included. (Middle/High School, 2 hrs.; Session 1/2) ****Field Trip****

REGISTRATION FORM

The registration cost before May 1, 2010 is \$75.00 which includes an annual membership to the NJMEA.

- Deadline for all registrations is May 1, 2010
- No walk-in registration available

No refunds after May 1, 2010

Brochure Source: _____ NJMEA Newsletter

(please check one) _____ ANJEE Conference

_____ NJSTA Conference

_____ Other

Please list the number of program selections in order of preference (please fill in 2nd & 3rd choices, or selections will be made for you):

Session 1

1st Choice: ____ 2nd Choice: ____ 3rd Choice: ____

Session 2

1st Choice: ____ 2nd Choice: ____ 3rd Choice: ____

Session 3

1st Choice: ____ 2nd Choice: ____ 3rd Choice: ____

Session 4

1st Choice: ____ 2nd Choice: ____ 3rd Choice: ____

Name: _____

Address: _____

Phone: _____

Email: _____

School: _____

Grade Level: _____

Please send this form and check made payable to:

NJMEA

PO BOX 1149

Manahawkin, NJ 08050

Confirmation of your registration, program updates and additional info. can be found on the NJMEA website:

www.NJMarineEd.org

7. Watershed ED 101 (Rutgers Cooperative Extension/NJ Marine Sciences Consortium/NJ Sea Grant Extension Program). Expand your repertoire of watershed education activities and learn what rain gardens can do for your school and your community. A number of watershed-based activities will be demonstrated including how to put a rain collection barrel together. (Middle/High School, 2 hrs.; Session 1/2)

8. Macroinvertebrate Surveying as a Method to Determine Watershed Health (Colts Neck School & STARS Challenge Program). We will be investigating the fascinating world of aquatic macroinvertebrates and how they relate to ecological health. The basic idea is pretty straightforward – some species of invertebrates are more tolerant of compromised environmental conditions than others. The dominant species in a watershed is a reflection of the level of pollutants present. First, methods of identifying macroinvertebrates will be reviewed, along with resource material that can be used in the field. Then we will don waders and enter the Whale Pond Brook, which runs through Monmouth University. Various methods will be used to extract the macroinvertebrates and identify them. Come join us in the mud for an introduction to a hands-on way to engage your students in their local environment. (Middle/High School, 2hrs., Session 3/4)

9. Biosurveys of Coastal Lakes and Ponds: Species and Water Sampling (Marine Academy of Technology and Environmental Science (MATES) School). Explore life below the surface of Lake Takannasse. Learn how to sample and assess a freshwater ecosystem using various equipment and techniques. Get students excited about a hands-on approach collecting aquatic insects, plants, and fish. Bring bug spray, sunscreen, and shoes that can get muddy. (All Ages, 2 hrs., Session 1/2) ****Field Trip****

10. Fresh and Salt Water Fishes of Coastal Watersheds (Monmouth University Department of Biology). Participants will utilize techniques for capturing nearshore fresh and salt water fishes. These fishes will be identified using fresh and salt water keys. (Middle/High School, 2 hrs., Session 3/4) ****Field Trip****

11. Exploration of Plankton in the Classroom (Monmouth University Department of Biology). This laboratory investigation combines inexpensive computer software, online investigations, live specimens, and preserved slides to teach students about the importance of plankton in marine ecosystems. We will begin with an exploration of Phytopia, an educational CD produced by the Bigelow Laboratory for Ocean Sciences. This is an inexpensive shareware package that can be copied for students, and provides an in-depth examination of phytoplankton and the importance of certain species in plankton blooms. We will also explore the online educational activities and lesson plans that the Bigelow Laboratory provides to coordinate with the software. Participants will then learn where and how to collect live plankton, and will spend time examining both wild-caught and commercially available live and preserved specimens under microscopes. All participants will receive a copy of the software. (High School, 1 hr., Session 1)

12. Discovery Barnegat Bay (Ocean County Soil Conservation District). Discover this regionally significant educational resource with activities ranging from soils to map making. While “Discovering Barnegat Bay” is specifically designed for Barnegat Bay educators, the forty lessons and activities have adaptability to any estuarine coastal watershed. In addition, the guidebook is a great example of “place specific” curriculum and offers some unique perspectives on the local area from a historical and cultural point of view. The guidebook is accompanied by a Treasure Chest which contains 65 additional supplemental resources. This brief session will provide an overview of the guidebook and information on how to attend a workshop and obtain this great resource! (All Ages, 1 hr., Session 1 or 3)

13. Coastal Pollution (Monmouth University Department of Biology). There are 127 miles of ocean coastline and over 18,000 miles of rivers and streams in New Jersey. Some of these waters are impacted by pollution. Several resources, lesson plans, and lab activities will be shared that are designed to introduce students to various aspects of pollution and can be adapted to incorporate local waterways. (All Ages, 1hr., Session 2 or 4)

14. Invasive Species Scavenger Hunt (Georgian Court University/NJ Marine Sciences Consortium/NJ Sea Grant Extension Program). Aliens have landed in New Jersey and we are being surrounded! Participate in a scavenger hunt for alien (“invasive”) plants and animals on Monmouth University’s campus and learn to pick out these imposters. Then discover some simple things we can all do to help prevent more of them from coming into our ecosystems and taking over. This workshop will provide you with the tools and know-how to involve your students in a similar exercise in your own community or schoolyard. (All Ages, 1 hr., Session 3)

15. Learning Today for a Cleaner Barnegat Bay (Jenkinson’s Aquarium). Participants will gain an understanding of the threats to the Barnegat Bay watershed, particularly from non-point source pollution, as well as the bay’s impact on their everyday lives and what they can do to ensure its health. (Elementary, 1 hr., Session 2)

16. Penguin Pointers (Jenkinson’s Aquarium). This program clears up misconceptions as students learn about penguin biology, geography, care, feeding and conservation. Adaptable to Middle and High School groups, we will also discuss how the conservation efforts of zoos and aquariums benefit rare animal species- all while meeting one of Jenkinson Aquarium’s resident African Penguins! (All Ages, 1 hr., Session 4)

****Field Trip**** Sessions will require a short drive (less than 10 minutes) to the session location. Transportation will not be provided, we recommend carpooling.