

AGENDA

Gulf of Maine Ocean Observation Educator Workshop

Topic: ***Seasons in the Sea: Understanding Change in the Gulf of Maine through Buoys, Boats and Satellites.***

**What:** 5 Day teacher workshop incorporating

**When:** June 27, July 1, 2005

**Where:** University of New Hampshire, Durham, NH

**Who:** Classroom Teachers 7-12 levels

**Why:** To bring classroom teachers together to learn background information on incorporating ocean observation related data into an existing curriculum.

**OBJECTIVES**

- To prepare 20 teachers with marine science content and educational tools to use ocean observation data in their curricula.
- To provide expertise, ideas and materials to help teachers write activities and lesson plans that incorporate ocean observing data and information.

**DELIVERABLES:** Teachers will...

- Learn cutting edge content in oceanography and marine biology disciplines.
- Interact with scientists who are helping shape the field of ocean observation.
- Spend an afternoon on a research cruise learning and testing scientific equipment.
- Collaborate with teachers to write a useable 2 week curriculum unit.

**SPONSORS**

- University of New Hampshire's Coastal Observing Center
- Gulf of Maine Ocean Observing System (GoMOOS)

Monday June 27, 2005

Tuesday June 28, 2005

Wednesday June 29, 2005

Thursday June 30, 2005

Friday July 1, 2005

2005 Educator Institute

**Monday June 27, 2005**

**Theme:** Understanding the Gulf of Maine Ecosystem

**Objective:** Teachers will:

- Learn background information on the region
- Practice using web tools to monitor change in the ocean.

7:30 – 8:15 Continental Breakfast at Cole Hall

8:15 – 9:50 Introduction: “*Seasons in the Sea*” Educator Institute

Activity: Assemble, Share, Brainstorm

What you know already. What you want to get out of this workshop.

Break

10:00 – 10:45 Seasonal Change in the Gulf of Maine

Content Talk by Dr. Ru Morrison

Break

11:00 – 11:30 Activity: Investigation Cards: break down and process new content

11:30 – 12:00 How we know what we know about the Gulf of Maine:

Technology, tools and all that data! Dr. Ru Morrison

12:00 - 1:00 Lunch

1:00 – 1:45 Oceanographic Webtools: GoMOOS, WebCOAST, and other sites

Break

2:00 – 3:15 Activity: Earth Exploration Toolbook Chapter When is Dinner Served:

Predicting the Spring Phytoplankton Bloom in the Gulf of Maine

Break

3:30 – 4:30 Activity: Curriculum Building: Calendars as Mini-interdisciplinary Units

4:30 Daily Feedback

5:00 Dinner

7:00 – 8:00 Lessons Learned from a Classroom Teacher: Ocean Observing in the Classroom: Jonah Rosenfield Waynflete High School

**Tuesday June 28, 2005**

**Theme:**

**Objective:**

7:30 – 8:15 Continental Breakfast

8:15 – 8:45 Introduction:

Science Translation - How have you used marine science topics in your curriculum?

8:45 – 10:30 Opener Activity:

Phytoplankton and You: What do you know already? “WYKA”  
Phytopia CD ROM: An Effective Learning Tool  
Content Talk: Abby Manahan Bigelow Laboratory, Boothbay Harbor  
a. Tutorial/lecture 45 min  
b. Computer lab practice 45 min (use specific lesson plans i.e Hatch to Catch etc)

Break

10:45 – 11:45 Phytoplankton revisited: What do you know *NOW*? Brainstorm/List  
Activity:

Making Room for the New: Curriculum Building with Calendars

11:45 – 12:45 Lunch

2:00 – 6:00 Research Cruise aboard the R/V Gulf Challenger

*Leave campus at 1:15 to go to boat*

*Transportation will be provided*

6:45- 8:45 Dinner: Red Hook Brewery

*Transportation will be provided*

2005 Educator Institute

**Wednesday June 29, 2005**

**Theme:** Understanding change in the Gulf of Maine ecosystem through studying three different trophic levels.

**Objective:** Teachers will:

- Gain new content related to cutting edge research
- Get experience in UNH research labs
- Interact with scientists and more.

7:45 – 8:30 Continental Breakfast

8:30 - 9:00 Introduction: Research Lab Stations

Traveling in small groups, teachers will visit 4 stations; 3 research labs and 1 non-academic station. Each of the 3 lab stations will provide teachers with information about current research studies at UNH, marine science content and will give teachers the opportunity to engage in laboratory science.

Lab Stations:

1. Dr. Ru Morrison – Primary Production: Phytoplankton
2. Dr. Jeff Runge – Secondary Production: Copepods and shrimp
3. Dr. Molly Lutcavage – Large Pelagics: Tuna and turtles
4. Self directed thoughtful digestion time

9:00 – 9:50 Station One

10:00 - 10:50 Station Two

11:00 – 11:50 Station Three

12:00 – 1:00 Lunch

1:00 – 1:50 Station Four

2:00 – 3:45 Group debrief about research lab stations.  
What was learned, what was missed?  
How will it fit into your curriculum?

4:00 – 4:30 Panel discussion from research scientists

4:30 Daily Feedback

5:00 – 6:00 Dinner

2005 Educator Institute

**Thursday June 30, 2005**

**Theme:** Detecting Change from space and Curriculum Planning

**Objective:** Teachers will:

- Learn about how satellite images can be interpreted
- Practice downloading and interacting with different types of satellite images
- Collaborate and brainstorm with other teachers to create practical lesson plans to be used in their classrooms.

7:30 – 8:15 Continental Breakfast

8:15 – 8:30 Introduction/Announcements

8:30 - 9:15 “Detecting Change using Satellite Images”

Content Talk: Dr. Janet Campbell

Using the primer and other available website tools

9:30 - 10:45 Activity: Satellite Images

By hand: 30 min

By computer 40 min

Break

11:00 – 11:45 Integrating Satellite Data into the classroom: Calendars as mini units

12:00 – 1:00 Lunch

1:00 – 1:15 Explain Learning Stations to help with curriculum development

The room is equipped with “topic tables” which are areas that have books, information and resource materials that will help encourage brainstorming and planning on that topic, each table will have activity idea cards to indicate variety of methods, examples and guidance to make sure different levels of critical thinking are being integrated as well as different learning styles.

1:30 – 5:00 Curriculum Collaborative

5:00 – 6:00 Dinner/BBQ

2005 Educator Institute

**Friday July 1, 2005**

**Theme:** Curriculum Collaborative

**Objective:** Teachers will:

- Present curriculum materials in a user friendly format
- Explain how what they have learned and what they have generated can be implemented into the classroom.
- Gain new ideas from other teachers

8:30 – 9:00 Continental Breakfast at Cole Hall

9:00 – 12:00 Teachers share presentations of their curriculum materials

12:00 – 1:00 Lunch

1:00 – 2:00 Workshop Wrap Up  
In school support, future follow up workshop, etc

3:00 Workshop Conclusion