

Why Do We Explore? An Online Professional Development Workshop
Presented by NOAA's Office of Ocean Exploration and Research (NOAA OER), and the
College of Exploration (COE)

Course Dates: June 21 – July 2, 2010
(Coursework will be due by July 7, 2010)

Instructor for Grad Credit Portion: Melissa Ryan (NOAA OER)

Workshop Facilitators:

Dr. William Bragg (COE)
Peter Tuddenham (COE)
Dr. Tina Bishop (COE)
Susan Haynes (NOAA OER)
Melissa Ryan (NOAA OER)
Mellie Lewis (COE)

Location: The College of Exploration's online campus at www.coexploration.org

Cost: Free to participants
Optional: One biology graduate credit through California State Fullerton is available for \$100.

Workshop Description

This two-week online workshop is a collaboration between NOAA's Office of Exploration and Research and the College of Exploration. It presents the *Okeanos Explorer*, the first federal ship dedicated to ocean exploration, reasons why we explore, and the global importance of ocean exploration. Reasons for ocean exploration that will be discussed will involve:

- The relationship between the ocean, climate change, and ocean life
- The benefits of marine organisms to human health
- The potential for new energy sources
- The conservation and sustainability of our ocean

The workshop will feature scientist presenters who are experts in their respective fields and who have made significant contributions to our knowledge of the ocean.

Participants will be formal and informal educators, as well as interested members of the public. An unlimited number of people will be able to participate. Workshop components will include online spaces for Teacher Professional Development, a collection of resources, discussion rooms for keynoters to interact with participants, and discussion rooms for teachers of different grade levels. Leader's Guides for teachers and new lesson plans relating to the keynote topics will be introduced. Participants taking this workshop for graduate credit will be guided to explore and discuss all materials with particular emphasis on ocean life and deep-sea ecosystems, and the

ocean's impacts on human health. For example, new lesson plans that explore the biological impacts of climate change, species interactions at undersea methane hydrate sites, the benefits of marine organisms to human health, and the effects of human-induced stresses on marine life will be discussed and reviewed.

Course Outline

Week One – June 21-27, 2010

Topics

- The *Okeanos Explorer*: The Nation's First Federal Ship Dedicated to Ocean Exploration
- Climate Change and the Ocean
- Energy Sources from the Ocean

Objectives:

- Describe the importance of the *Okeanos Explorer* to deep-ocean ecosystems
- Discuss the impacts of climate change on the ocean and its inhabitants
- Explain how ocean exploration can lead to the discovery of new energy sources

Week Two – June 28 - July 2, 2010

Topics

- Benefits of the Ocean to Human Health
- Ocean Health

Objectives:

- Discuss the ways in which deep ocean organisms can contribute to pharmacology and cite examples
- Describe the potential effects of ocean acidification and other ocean health issues on marine organisms
- Explain why ocean exploration is important to sustaining life

Graduate Credit Requirements

1. Read and Participate in all online sessions. Join and read each of the keynote presentations.

- Listen to/read presentations, ask questions
- Review and explore lessons, resources, and standards (all related to the particular presentation)

Total ~ 9 hours

2. Participate in breakout session(s).

- Dialogue with other teachers/break out sessions (Resource room, Café, etc.)
- Explore other resources (web links, books, and other shared resources and lesson plans)

Total ~ 6 hours

3. Answer the “question for the week” in the graduate credit room. The question will relate to the Keynote topics.
4. Demonstrate intended or actual classroom applications for one of the two one-week sessions, by choosing **one** of the options below:
 - A. Choose two of the lessons presented in this course and describe how you would incorporate them into your curriculum. Include a timeline for your implementation, your target audience, web site links, and additional resources.
 - B. Create an annotated bibliography of at least eight new resources beyond those presented in this course related to the session that would be useful for others as a reference. These may include Web links, articles, books, and other recommended resources. A description of each resource, as well as suggested grade level(s), possible use in the classroom, and assessment of its value should be included.
5. Complete the Workshop Evaluation. The survey will be posted online and will include questions about the participants' individual learning as well as the workshop format, structure, and content.

COURSE ASSESSMENT:

Participants will have until July 7, 2010 to complete the requirements for graduate credit.

Instructors to ascertain that all requirements have been met as stated above.

Note: Attendance related stats will be verified using a manager's monitoring feature of our Caucus software.