

Proceedings of the 2008 NEOSEC Ocean Literacy Summit

Friday, November 7 2008, 8am to 4pm

Boston University School of Management

NEOSEC

New England
Ocean Sciences
Education Collaborative

Agenda

Opening Remarks

Welcome

Rick Murray, Boston University Marine Program (BUMP)

Billy Spitzer, New England Aquarium, PI for NSF funding and founding chair of NEOSEC

Gail Scowcroft, University of Rhode Island, past chair of NEOSEC

The value of networks

Suzy Ryan, University of Southern Maine, Census of Marine Life – Gulf of Maine Area, Chair of NEOSEC

Ms. Ryan delivered an [essay](#) on our individual, professional, and regional need for connections.

Morning Keynote Speech

Making connections: Ocean literacy and global climate change

Kerry Emanuel, Program in Atmospheres, Oceans, and Climate, MIT

Dr. Emanuel, an expert in climate science and especially the extreme weather events that accompany climate change. He described how climatology is related to the study of climate change, and described the role of climatologists in the broader ocean sciences. His central message to the group: we should do all we can to inspire students to become climate scientists, emphasizing the intellectual challenge of this interdisciplinary area of study. He suggested that a background in physics best supports graduate work in climatology, and further, that a range of students, with a range of interests and capacities – from physicists to engine mechanics – all need to have quantitative skills and training in multiple disciplines.

Dr. Emanuel provided an [article](#) describing his work as well as a [PowerPoint slideshow](#)

of his presentation.

Concurrent Sessions: Setting the Stage

Connecting Ocean Literacy and Climate

Dan Barstow, TERC; Sarah Schoedinger, NOAA Education

Dan Barstow was a member of the committee that prepared the national [Climate Literacy \(CL\) Principles](#). Sarah Schoedinger led the national effort that produced the [Ocean Literacy \(OL\) Principles](#). The two shared information about the process and highlighted similarity in the themes covered, including the fact that the ocean is a major influence on weather and climate (OL Principle #3/CL Principle #4), and the ocean makes Earth habitable (OL Principle #4/CL Principle #1). The interconnectedness between humans and ecosystems permeates the thinking behind the two literacy efforts. Also, both were developed with the assumption that educators, and students in turn, will take action if they understand the underpinnings of these topics. The questions for both education efforts become, “how do we build a global mindset? How do we turn learning into action?” In the discussion that followed, participants warned against assuming that providing content alone results in education, that introducing skill sets and opportunities for action are also critical to learning. Another suggestion was to attempt to pull together the various NOAA-sponsored science literacy efforts (e.g., Ocean, Climate, and Atmospheric Science) into an overarching framework, something that has been discussed among NOAA program staff, reported Ms. Schoedinger, but not widely agreed to as yet.

Public perceptions: Polling on Ocean & Climate Literacy

Peter Alexander, Talking Conservation; Theresa Torrent-Ellis, Maine Coastal Program

The speakers shared regional and national polling data about public attitudes toward the ocean and comprehensive ocean planning with attendees.

Ocean & climate science education in New England classrooms

Lauren Rader, Project Oceanology; Julianne Mueller-Northcott, Souhegan High School, Amherst NH

Participants heard about two of the few ocean-and-climate programs underway in New England classrooms; many expressed interest in having access to activities, lesson plans, and organizations that would provide additional materials for classrooms.

Making worlds collide: scientists engaging policymakers

Jake Levenson, International Fund for Animal Welfare; Stormy Mayo, Provincetown Center for Coastal Studies

The panelists described their own work to connect science with policymakers and inject ocean science into decisionmaking and policies.

Concurrent Sessions: Putting Ocean Literacy Principles into Action

Ocean data and mapping tools

Nick Wolff, Census of Marine Life Gulf of Maine Area

Mr. Wolff described [curricula](#) developed by the [Census of Marine Life Gulf of Maine Area](#) that use Google Earth.

Jack Crowley & Mark Smith, UMass Dartmouth; David Welty & Abbey Spargo, Ocean Explorium at New Bedford Seaport

The speakers described a joint program, the [Connecting Oceans Academy](#), between the [Explorium](#) and UMass Dartmouth.

Ocean-climate change connections for middle-school school students

Pat Harcourt, Waquoit Bay National Estuarine Research Reserve; Tom Trott, Suffolk University

This session provided educators with tools for use in multiple settings, as well as an

introduction to the range of materials available locally and [on the internet](#) (this ftp site requires a password [WBftp!!2008] and username [WBNERR]).

Climate concepts: meshing cutting-edge research with education

Jennifer Albright & Christy Herren, University of Maine; Sean Graham, Raytheon Web Solutions

Partners from the [Center for Ocean Sciences Education Excellence – Ocean Systems](#) led a workshop to help bring ocean research to the classroom.

Fostering ocean & climate literacy at large

John Anderson, Ocean Change Education Aquarium Network; Pam DiBona, NEOSEC Ocean7 Campaign

John Anderson, Education Director at the New England Aquarium, described an initiative undertaken by a group of six aquariums around the U.S. and the Vancouver Aquarium in Canada to provide communications training to interpretive staff regarding climate change. The Ocean Change Education Aquarium Network (OCEAN) recently received a three-year grant from the Institute of Museum and Library Science to fund workshops for institutional leaders, and support them as they provide training within their own institutions for staff and volunteers. In the third year of the grant, the aquariums plan to provide training in turn to local partner institutions. The New England Aquarium, as the primary grantee, is coordinating the effort and will be offering training to institutions around the region in 2011. Attendees encouraged the Network to share the information and tools beyond Association of Zoos and Aquariums members. They also challenged OCEAN to draw a picture of an ocean-literate person – what do they do, how is their day-to-day life different?

Pam DiBona, who staffs NEOSEC, presented plans for a Summer 2009 public education campaign to present the seven Ocean Literacy Principles, called “Ocean7 Voyage of

Discovery.” The project is an outcome of the 2006 Ocean Literacy Summit, and the result of work by the NEOSEC Ocean Literacy Outreach Subcommittee. The primary components of the campaign include:

Seven visitors’ sites around New England displaying one of the OL Principles on a banner (ultimately displaying all seven Principles over the course of the summer).

A “passport” or other system to encourage families to embark on the Voyage of Discovery around New England.

Rewards for visiting a certain number of sites (which will help us evaluate the program’s success)

A website for more information (family-friendly; the extent of this aspect will depend on availability of additional funding)

Session attendees provided several useful comments, including ideas for rewards (gift shop discounts or gift cards? Look to MA Department of Conservation and Recreation and the CT State Parks systems for ideas), mechanisms for tracking participation (use SKU codes rather than stamps? Employ geocaching tools?), content related to the OL Principles (add a provocative question for families to discuss? Use cutting-edge, “wow” research? make it relevant to peoples’ lives?), and advertising the Campaign (press event concurrent at all sites? Highlight someone who is planning to visit all of them? Provide a suggested route[s]?)

Afternoon Panel Discussion

The ocean-literate workforce: What is the future job market?

Paul Anderson, Maine Sea Grant (Moderator); Rick Murray, Boston University Marine Program; Buzz Scott, OceansWide; Jeff Rosen, Clancy Environmental Consulting; Riley Morse, Gulf of Maine Ocean Observing System

After each panelist described their backgrounds (see [speaker biographies](#)) and how

they came to their current positions, all participated in a lively discussion with Summit attendees. Topics included:

How can we collect, manage, and integrate data into information that is useful to students, policymakers, and teachers? We need to get better at sharing data, looking in the mirror to address our own shortfalls.

How can we connect trained employees with employers? We need a concerted effort to increase capacity in this area. Attendees listed various isolated efforts by individual groups (including NEOSEC) and asked how they can be connected.

How can we provide classroom teachers with information about training programs for themselves and students? There are isolated tools (like NEOSEC's electronic newsletter, [NEwswave](#)) and opportunities, but there is no collection site for all of the programs that are already available.

How can we establish funding mechanisms for student apprenticeships and internships? Perhaps the Department of Labor has funding for apprenticeships?

How do we bring additional voices to the discussion? Vocational-technical schools are required to establish advisory boards, but they seldom receive adequate support or information. Community Colleges should also be able to provide culminating degrees for marine workers.

How can we provide training for teachers and other adults who can share career information with students?

Evaluations

Evaluations from the day included these positive comments:

"I didn't know what to expect but I gained new information and found organizations that will help me and others I know."

"This was so worth it!"

"Great keynote!" "Keynote speaker was absolutely PERFECT!"

"Many good choices [of sessions] and good presenters"

"It was so important and such a great idea to pull in industry."

As well as suggestions for future Summits:

- Leave more time for breakout sessions

- Make it a 2-day event

- Add an informal resource exchange session for groups of educators

- Start off with an icebreaker to encourage even more networking

- This should happen every year

- Shorten the afternoon panel and facilitate break-out groups to discuss the issues raised by the panelists

- Include decisionmakers so they can hear scientists' needs

And ideas for next steps:

- Internship/fellowship opportunity database

- Additional networking opportunities

- Web portal – becoming part of a resource where educators can go for unlimited resources at their fingertips

- Engage in community outreach and education

- Current resource index – New England state-by-state marine-based jobs, education, career, internship listings, etc.

- Build a matrix of resources that members can provide each other

Focus on NE coastal areas – but don't forget that we are all connected from one side of the world to the other.

Focus on doing things that individual members cannot do (or do well) themselves

Provide listings of scientists available for field experience and classroom visits

Universities should be providing K-8 schools with education and training for teachers on climate change and ocean science.

Provide a forum for teachers to share information about their own classroom-based student research projects

Develop a "Craigslist" to facilitate scientist-educator-student networking and collaboration

Facilitate partnerships between institutions of learning and applied ocean science users

Define marine education/ocean literacy needs in the region

NEOSEC is taking all of these comments and suggestions for next steps as we develop an action plan for the coming year.