

April 30, 2009

**Building a Basic Observation Buoy Collaborative Workshop
Co-sponsored by COSEE SouthEast and SECOORA**

Final Report

What: A southeastern, regional, collaborative workshop among scientists and outreach specialists to promote and extend coastal ocean observing information, technology and societal benefits using a scaled down, but operational, “Basic Observation Buoy (BOB).”

BOB is a floating buoy platform that can carry a suite of environmental sensors. BOB can be anchored to the bottom in quiet waters. Another version of the BOB is the “Fixed Local Observation (FLO)--a device fixed to a piling or dock structure. These devices are in the design phase, based on concepts developed by Doug Levin, Ph.D., NOAA Chesapeake Bay Office.

Purposes:

1. To demonstrate the transferability of a program of excellence in the NOAA Chesapeake Bay Office to the southeast. This supports the One NOAA concept.
2. To bring great minds together in the SECOORA region for an extension education collaboration.

Objectives:

1. To construct a BOB, mount and calibrate a suite of sensors.
2. To “brain storm” refinements of the BOB design and sensors and potential telemetry of data.
3. To initiate a loose collaborative group to support the extension of this workshop and application of BOBs for teaching, gathering and reporting of environmental data—outreach..
4. To engage SECOORA and the Data Management group to develop a support and reporting system for BOB information.



Support:

This workshop was supported in part by funding from NOAA award to COSEE SE through SC Sea Grant Consortium. Funding supported BOB supplies and sensors, lodging and some meals. Participants provided their own travel. SkIO provided the space in the conference room of the library and the wonderful assistance of Lisa Doser for logistics and catering.

Outreach Strategy Expectations:

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Workshop participants are expected to engage local faculty/educators/teachers to initiate and extend this workshop to undergraduate, informal students (adults or clubs) or middle/high school student project to increase understanding of coastal ocean observation and information. This project addresses instrumentation/sensors, continuous data collection, STEM education and application of technology in a project atmosphere. BOB/FLO workshop builds of COSEE SE Professional Development workshops, such as Taking the Pulse of Our Coastal ocean (TPOCO) and Undersea Research and Technology (Remotely Operated Vehicles-MIT Sea Perch ROVs) and the NOAA Gray's Reef NMS ROV MATE Competition. To promote the extension of BOB/FLO for similar workshops designed for teachers or informal educators or students in FL, GA, NC, and SC through university, schools, aquaria, Sea Grant, or marine extension programs.

Location:

Skidaway Institute of Oceanography
10 Ocean Science Circle
Savannah, GA 31411

Logistics: Lisa Doser, SkIO

Host: Jim Sanders, Ph.D., Director Skidaway Institute of Oceanography

Facilitator: Doug Levin, Ph.D., NOAA Chesapeake Bay office

Coordinator: Lundie Spence, Ph.D., COSEE SouthEast

Workshop Participants:

The workshop participants came from multiple regional institutions and programs: 8 universities--University of North Carolina at Wilmington, University of North Florida, University of Florida, Jacksonville University, Savannah State University, Kennesaw State University, Skidaway Institute of Oceanography, University of South Carolina; 3 NOAA agencies—Phytoplankton Monitoring Network, Gray's Reef National Marine Sanctuary and Sea Grant; . Beaufort High School, SC; DownEast Instruments, NC; SECOORA and COSEE SE.

Agenda:

A two-day format, beginning 4:00 Thursday afternoon, continuing through a working dinner until about 9 pm focused on construction. The second day was focused more on applications and refinements. The agenda was developed to encourage engagement and free thinking. The format was not to proscribe a "recipe," but to develop a forum for critical thinking and problem solving. (Appendix 2: Agenda)

Outcomes:

Functionally, twenty BOB Platforms were constructed and taken home by participants.

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Six BOB platforms were outfitted with sensors (PASCO data logger for DO, pH, conductivity, temperature and wind/anemometer). Sensors went to UNC-W (Burnett), SSU (Hunter) UNF (Welsh) , UF (Waterhouse), Beaufort HS (Mack), and KSU (Adams).

Conceptually, participants provided their own experiences and insights to engineering, calibration, level of data quality, applications and connections to SECOORA.

Collaboration outcomes included the participants indicating a desire to maintain contact and share ideas. Sam Walker suggested that he could provide a data site on SECOORA that would function to pull the group together. Various means of communication were explored, such as blogs. Lundie Spence will connect with George Maul of the SECOORA Education and Outreach Committee to see how SECOORA can continue to support this. Doug Levin, the developer of the BOB and the workshop facilitator, supports our collaboration, One NOAA and will continue to share his refinements.

Appendix 1: Names and Contact Information

Appendix 2: Working Agenda

Appendix 3: Reflections on Ideas and Commitments

Appendix 1: Participants

Facilitator: Doug Levin NOAA Chesapeake Bay Office

NC

Jeremy Burnett UNC W Marine Quest Program

Joe Oliver, UNC W

Jeff Kinder, Downeast Instruments

SC

Allison Sill Phytoplankton Monitoring Network

Kinsler Mack Beaufort HS Lundie Spence COSEE SE

Elizabeth Vernon Bell COSEE SE & SC Sea Grant

Lundie Spence, COSEE SE

GA

Cathy Sakas (Grays Reef NMS)

Lisa Adams Kennsaw State University

Angela Bliss COSEE SE

Dana Savidge SkIO

Jim Nelson SkIO

Gregg Hunter SSU

FL

Pat Welsh University of North Florida

Michael Toth University of North Florida

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Quint White Jacksonville University
Daniel McCarthy Jacksonville University
Lex Waters Jacksonville University
Amy Waterhouse University of Florida
Bilge Tutak, University of Florida

SECOORA Staff
Sam Walker, USC Information Management Manager
Susannah Sheldon, Program Coordinator

Appendix 2:

AGENDA

Thursday January 29, 2009: Building the BOB/FLO

1:00-3:00 Arrive, Check In --SkIO Administration Building

3:30 Move to the Workshop Space

4:00-6:00 Building the BOB/FLO

Observe a working model and discuss from the various aspects of the participants, what is the potential of using a BOB/FLO as a STEM teaching tool, team building exercise, or data collecting buoy for demonstration or real applications. Discuss challenges and opportunities for scaled down model. Connections with SECOORA, suggestions of sensors, telecommunications.

6:00-8:00 Working dinner and construction with BOB buoy kits

Friday January 30, 2009: Instrumentation and Data

8:00-8:30 Continental Breakfast

8:30--noon Deployment of Demo BOB/FLO on dock, orientation to PASCO sensors, installing sensors and calibration. Testing your BOB/FLO for balance and flotation. Continuing collaborative discussion on how to modify the process or add more sensors.

Noon to 1:00 Working Lunch Recover Data Logger from the Demo

1:00-3:00 Retrieve group BOB/FLOs and Data Loggers and upload to Fieldscope or other software for preliminary analysis. Discuss reporting to a SECOORA database.

3:00-4:00 Wrap up and assess the value of this concept for extension in the SECOORA and/or COSEE SE region.

Workshop Applications (so far!)

Kin Mack is starting a BOB club for high school afternoon projects at Hilton Head, SC

Greg Hunter is using the BOB in the SSU summer camp for STEM activities.

Jeremy Burnett and Joe Oliver with Lynn Leonard are scaling the model even smaller for classroom use near UNC W.