



Year 3 (2004-2005)

Mid-Year Progress Report

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SEACOOS Members

(parties to the SEACOOS Master Agreement and Articles of Collaboration):

- University of South Florida (USF)
- University of Miami (UM)
- Skidaway Institute of Oceanography (SkIO)
- University of South Carolina (USC)
- University of North Carolina at Chapel Hill (UNC-CH)
- South Carolina Dept. Natural Resources (SCDNR)
- Florida Sea Grant (FSG)
- Georgia Sea Grant (GSG)
- South Carolina Sea Grant Consortium (SCSGC)
- North Carolina Sea Grant (NCSG)

SEACOOS Affiliate Members

- Atlantic Oceanographic and Meteorological Laboratory/Office of Oceanic and Atmospheric Research/NOAA
- Naval Surface Warfare Center/USN
- Carolinas Coastal Ocean Observing and Prediction System
- Center for Coastal Fisheries (NOAA)
- Center for Operational Oceanographic Products and Services/NOS/NOAA
- Coastal Ocean Research and Monitoring Project (CORMP)/UNC-Wilmington
- Coastal Services Center/NOAA
- Field Research Facility/United States Army Corps of Engineers
- Florida Keys National Marine Sanctuary/NOS/NOAA
- Fish and Wildlife Research Institute
- Gray's Reef National Marine Sanctuary
- Miami Regional Weather Forecast Office/NWS/NOAA
- NAMETOC/USN
- Marine Modeling and Analysis/NCEP/NWS/NOAA
- National Coastal Data Distribution Center/NESDIS/NOAA
- National Data Buoy Center/NWS/NOAA
- Naval Surface Warfare Center/United States Navy
- South Florida Ocean Measurement Center (SFOMC)
- Southeast Fisheries Science Center/National Marine Fisheries Service/NOAA

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WORK STATEMENTS AND BUDGET JUSTIFICATIONS

OBSERVATIONS

UNIVERSITY OF SOUTH FLORIDA

Observational subprogram – P.I. and Workgroup Chair Robert Weisberg (West Florida Shelf), co-P.I. Mark Luther (Coast and Tampa Bay), USF

- | | %COMPLETE |
|--|-----------|
| ▪ Moored Array: Continue to maintain the offshore array, providing real-time data to the general public via the COMPS and SEACOOS Internet sites and providing these data to NCEP via the NDBC (Internet site and GTS). COMPS will also maintain a set of coastal stations. | 60 |

Status: An array of 6 telemetering and 4 internally recording moorings is being maintained. Limited by ship time and spares we are fighting telemetry down time and met. station failures, a necessary frustration for full, robust telemetry of met., \underline{V} , T/S. Equipment from SEACOOS (and related grants) will hopefully solve the spares problem. Coastal stations are being maintained and new equipment are being tested.

- | | %COMPLETE |
|---|-----------|
| ▪ HF Radar: A long-range CODAR array will be completed (acquired in Year 2) and maintained for real time surface currents and as a radar test bed over a broad, gently sloping shelf with in-situ measurements for comparison. Three antennae sets will be positioned from Naples to St. Petersburg, and we will collaborate with Rutgers/Mote on a fourth. Joint analyses comparing WERA and WFS in-situ data will be completed with N. Shay. | 60 |

Status: Three sets of antennae are deployed [St. Petersburg, Venice (with Mote/Rutgers), Naples]. A fourth set (separate funding) is ordered for use at Cedar Key. After much problems, stemming from lightening strikes, these three stations are presently active. A paper with Shay is in progress.

- | | %COMPLETE |
|--|-----------|
| ▪ Profilers: BSOP (profiling float) developments are progressing under separate funding. Our first extended (16 days), unattended deployments were conducted in November 2003, and limited operational deployments are planned. Near real time profiles will be served on the Internet. | 40 |

Status: We are continuing with other funding sources.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Data analyses: Analyses will be aimed at understanding the synoptic, seasonal and inter-annual variations on the WFS, both for the ocean circulation and ocean-atmosphere interactions and for the biological ramifications of these. | 60 |

Status: Papers are both in press and in progress.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Construct a replacement SEACOOS buoy (1 of our 6 SEACOOS/COMPS surface moorings): This will help facilitate a regular servicing interval and improve reliability. | 100 |

Status: The replacement SEACOOS buoy (our C17) was built and deployed in March.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Design and construct a near shore station: Measurements (met., currents & T/S are needed in the region of estuarine influence not covered by the long-range CODAR (within a few km of the beach). We anticipate using a fixed platform with acoustic telemetry to transmit data from a bottom mounted ADCP (possibly with waves). This may lead to matching support and will provide for outreach. | 60 |

Status: Testing was completed with an RDI-Waves-Nemo, acoustically linked (with Benthos acoustic modems/transducers) from a remote subsurface location to a Coast Guard channel marker at the mouth of PAG Channel. Results will be presented at the RDI ADCPs in Action mtg. in April. Equipment has been purchased for the PAG location, with deployment scheduled for later this year. With separate funding we are testing similar concepts with Nortec.

OBSERVING (CONT.)

USF Satellite Remote Sensing -- co-P.I. Frank Muller-Karger, USF

| | % COMPLETE |
|---|------------|
| <ul style="list-style-type: none"> ▪ Produce high temporal and spatial resolution sea surface temperature fields from MODIS and AVHRR to be served by SEACOOS; | 70% |

Status: Algorithm development has been completed. SST derived data products from both MODIS and AVHRR are being provided to SEACOOS. We are currently focusing on daily operational and quality control issues which are ongoing and will always need to be addressed.

| | % COMPLETE |
|---|------------|
| <ul style="list-style-type: none"> ▪ Produce ocean color data from MODIS and SeaWiFS (the latter one in a protected mode available to researchers and educators) in a format compatible for SEACOOS access and in a manner similar to that for the SST products; | 70 % |

Status: IMaRS is currently providing ERGB, CRGB and Chlorophyll-a ocean color data derived from MODIS daily to SEACOOS. We are currently focusing on daily operational and quality control issues which are ongoing and will always need to be addressed.

NASA and Orblmage failed to reach an agreement on the scientific use of SeaWiFS data. Even password protected near real-time data access is not currently an option, so we are unable to provide access to SeaWiFS data – this is completely out of our control as it is an arrangement between a Federal agency and a private company that owns the satellite.

-
- % COMPLETE
-
- Plan for delivery mechanisms of other relevant satellite data including altimetry and scatterometer observations (sea surface height and winds, respectively) 70%

Status: We have made significant progress in providing intellectual and scientific guidance to SEACOOS on how to import these data from national microwave satellite processing centers and scatterometer/altimeter databases located at the Jet Propulsion Lab. The SEACOOS portal now offers prototype wind and sea surface height products developed with our input.

OBSERVING (CONT.)

UNIVERSITY OF SOUTH CAROLINA

SC Near shore Monitoring Stations – P.I. George Voulgaris, USC

-
- %COMPLETE
-
- Continue to operate and maintain two established near shore monitoring stations. 70%

Status: Two stations have been established: (i) Springmaid; and (ii) Folly Beach. The stations are online in a non-official web page (<http://nautilus.baruch.sc.edu/waves/index.php>). Maintenance and Operation is currently divided in hardware and Springmaid pier is currently operational (<http://nautilus.baruch.sc.edu/waves/springmaid/index.php>) while the Folly Beach Pier (<http://nautilus.baruch.sc.edu/waves/folly/index.php>) is offline due to damage to the computer on the coastline. Efforts are currently underway to bring Folly beach on real time and improve robustness of the system.

-
- %COMPLETE
-
- Generate the near shore directional wave climate for the coast of South Carolina for the two stations. 30%

Status: Data are continuously recorded even when the stations are offline. Data have been collected since October 2004 thus having a database of almost 6 months. The first climate results will be established once we have data from a complete year.

-
- %COMPLETE
-
- Continue to provide real-time information to assess coastal circulation to be used for the design and execution of coastal nourishment projects and for boating. This information can also be used as a prognostic tool for the forecasting of near shore circulation and mixing that control the transport and diffusion of colloid bacteria loading in the Myrtle Beach area as a result of storm rainwater runoff. 10%

Status: The two stations established although online (see first statement), the data are not broadcasted as fully operational since we are still going through the process of developing data analysis and quality assurance protocols. The experimental sites have been demonstrated to the NOAA/NWS Operational officers for Charleston, SC and Wilmington, NC and we are working in including this in the decision making process for the rip current forecasting activities

OBSERVATIONS (CONT.)

HF Radar – P.I., Richard Styles, USC

| | % COMPLETE |
|---|------------|
| <ul style="list-style-type: none"> ▪ Deploy a long-range HF Radar (CODAR) system in coordination with SKIO partners in the central South Atlantic Bight. Antenna locations will be selected based on site surveys, permitting considerations, and radial overlap options determined in Year 2. | 50 |

Status: At present we have made the following progress toward completing our Year 3 goals. 1) We have ordered 1 long-range WERA Radar system that is scheduled for arrival in early June. 2) We have hired a fulltime technician to install and maintain the HR Radar. 3) We have identified and received permission to install the system on Pritchard’s Island located near Beaufort, SC. 4) We have acquired from RSMAS a Hewlett-Packard 85-91EM Spectral Analyzer and we have modified it for autonomous data logging. The purpose is to scan for frequency gaps in the radio band to fine tune HR Radar operational frequencies. 5) We have constructed a poster to describe how and HR Radar works to be used as an educational/outreach tool. 6) We have established a dialogue with SC Sea Grant to serve as a liaison between the scientific team and government agencies, the public and private land owners. The purpose is for Sea Grant Agents to help identify possible sites for future HR Radar installations. 7) We have initiated steps towards acquiring an FCC license to operate the radar in South Carolina and Georgia. Once the operational frequency band has been determined, we will complete the application.

OBSERVING (CONT.)

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

SI Charlie Barans

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none"> ▪ maintain and upgraded the primary video site | 50 |

Status: The primary video system provided images for most of the year with impaired visibility due to resuspended sediments or fouling during the fall, 2004. The computer system was upgraded, but the new computer immediately malfunctioned. Diagnostic tests have to be preformed. Development of upgraded software to capture video images has been initiated.

| | % COMPLETE |
|---|------------|
| <ul style="list-style-type: none"> A data logger will be placed at a key fisheries research site on the shelf to expand visual data collections. | 65 |

Status: A video data logger was tested extensively for deployment at the CORMP hydrographic site in Onslow Bay, NC. Software revisions have been initiated for the prototype system to obtain the capture and log the video files required.

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none"> The modification and training of the MBARI neural network system to the project's fisheries video will be subcontracted and include the cost of travel to MBARI. | 30 |

Status: Completion of this task required participation of a staff representative or consultant in a technology transfer workshop by MBARI. MBARI has postponed the workshop until just beyond the end of Year III. Therefore, this task will be replaced with the expansion of task #2, and will include deployment of an additional data logger at the Gray's Reef National Marine Sanctuary remote video site, established in Year II. This important task will be attempted in Year IV.

OBSERVING (CONT.)

SKIDAWAY INSTITUTE OF OCEANOGRAPHY

P.I. and Workgroup Co-Chair Jim Nelson, and P.I.s Rick Jahnke, Dana Savidge

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none"> Maintain the SABSOON observing system on the Georgia continental shelf (mechanical systems, power, communications, instrument packages). | 50 |

Status: Routine maintenance on the offshore packages is performed at 5-6 week intervals. Unscheduled maintenance/repairs have included: replacement of a failed board in a data acquisition board for the in-water packages on R2; generator repairs on R8; replacement of individual instruments on some packages. ADCP replacements at M2 and R8 are planned for the spring of 2005. Extensive work by the Navy on their power system limited helicopter time and access to the offshore towers in the summer and fall of 2004, delaying some planned maintenance. SkIO personnel also coordinated logistics planning with UNC partners for deployment of a self-contained UNC package on the R4 tower.

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none"> Deploy a long-range HF Radar system in coordination with USC partners in the central South Atlantic Bight. Antenna locations will be selected based on site surveys, permitting considerations, and radial overlap options determined in Year 2. | 20 |

Status: After evaluation of HF Radar options, it was decided to deploy the WERA system in Georgia and South Carolina. Permission for the shore deployment has been obtained at two coastal sites in Georgia (St. Catherines Island and Jekyll Island; final permits are pending) as well as for the USC site in South Carolina (Prichard's Island). Site surveys have been conducted with WERA personnel, and quotes have been obtained for the radar system and accessories and for installation of power and communications at the shore sites. It is

anticipated that State funds will be available in late spring to early summer for the second Georgia site (pending a bond sale).

| | % COMPLETE |
|---|------------|
| <ul style="list-style-type: none">Obtain surface wave information through deployment and maintenance of a directional wave buoy system with partner Paul Work (Georgia Institute of Technology, Savannah campus). The deployment location will be based on evaluation of initial results from Year 2. | 50 |

Status: A Triaxys directional wave buoy with Iridium communications was deployed off Tybee Island Georgia (10 m depth) in July, 2004. The buoy and mooring hardware were inspected during small vessel/diver trips in September and November, 2004. An internally recording, bottom-mounted ADCP was also deployed in November, 2004 for evaluation of tidal current influence on the buoy wave measurements and for inter-comparison of Triaxys- and ADCP-derived wave products. The buoy was retrieved in late February, 2005 for servicing and deployment at Key Largo as part of the SEACOOS surface wave experiment. A replacement buoy will be deployed off Tybee Island in late March, 2005.

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none">Continue incremental upgrades of instrument packages, power monitoring and control, data acquisition hardware and software, and communications components. | 40 |

Status: The major installation work for the first half of Year 3 has been completion of the power system on the R8 platform (including a propane back-up generator). A back-up power system was also installed for the R2 platform to make the SABSOON systems less susceptible to interruptions in the Navy power generation system. New ADCP frames with a pop-up buoy system have been fabricated. These will provide systems that should eliminate the need for the larger vessel and reduce the diving required for ADCP deployment and recovery. SkIO engineering has also designed and had fabricated the mounting components for a surveillance radar system for the Gray's Reef National Marine Sanctuary (GRNMS) program (a SEACOOS Affiliate) on the R2 tower, and the system installation is underway.

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none">Continue prototype development for a profiling CTD/optical package for tower deployment. | 5 |

Status: Design work for this package has been limited. Priorities for SkIO Engineering for the first half of Year 3 have targeted servicing/upgrade of existing offshore systems.

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none">Plan logistic support for a deployment of an air-sea gas exchange measurement system at one of the Navy towers (a separately funded project of Wade McGillis, Columbia University, LDGO) | 0 |

Status: McGillis has been requested to provide an update on the status of the development of his package and logistic support requirements. Further deployment planning can proceed once this information is obtained.

UNIVERSITY OF MIAMI, RSMAS

*Radar Test Bed for the East Florida Shelf (EFS) with Waverider Buoy - P.I., Lynn K. Shay
MPO, RSMAS*

| | % COMPLETE |
|--|------------|
| ▪ Complete analysis of radar-derived surface currents and compare these data to moored ADCP data over the West Florida Shelf from the ~2-month deployment in August and September 03 | 75% |

Status: Completing analysis of in-situ data and drafting a manuscript for JAOT. Results will be presented at the upcoming ROW-5 Meeting in May 05.

| | % COMPLETE |
|---|------------|
| ▪ Maintain three surface current radar sites along the EFS thereby establishing a radar testbed (RTB) in a regime with large gradients that occur over short-time scale and compare to ADCP transect data from the Explorer of the Seas | 65% |

Status: Crandon Park and Key Largo WERA sites are working well, however, Ft. Lauderdale radar site (in direction finding mode) is down awaiting completion of the major beach renourishment activities and reconstruction of the boardwalk. Discussions are underway to establish US Navy SFTF as the node in the WERAnet and place the phased array in front of a planned Kevlar fence. We are awaiting retrieval of a moored ADCP (see below) in the WERA domain as we do not have EOS ADCP data for comparisons at the present time.

| | % COMPLETE |
|--|------------|
| ▪ Provide hourly estimates of surface current maps via the Web | 100% |

Status: See <http://iwave.rsmas.miami.edu/WERA> for this capability. We are continuing to refine the web page.

| | % COMPLETE |
|--|------------|
| ▪ Deploy a waverider buoy in the WERA domain for real-time measurements of the two-dimensional wave spectra for comparison to wave spectra derived from WERA | 60% |

Status: Deployed an AWAC, and two ADCPs and ADPs for mini- waves experiment. Awaiting return of the R/V Walton Smith from drydock to deploy the Georgia Tech and NDBC Tri-Axys buoys in the WERA domain as no waverider buoy funds were provided by SEA-COOS in year 3. We will also turn around a moored ADCP (Bill Johns) in about 100-m of water during this surface wave instrument deployment cruise.

Real-time Oceanographic Profiling Stations Along the East Florida Shelf, P.I. Bill Johns, MPO/RSMAS

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none"> ▪ Two SWAMP (Shallow Water Autonomous Profiler) systems will be maintained on the EFS within the HF radar domain. Housed in a bottom platform, these contain a fixed ADCP and a buoyant CTD, periodically released to the surface and winched back to the bottom. They will provide real time profiles of velocity and T/S from shallow environments (<100 m) without the need for surface buoys. | 80% |

Status: Several trials of the SWAMP prototype system have been completed in local waters with successful data telemetry by HF radio. Problems identified with the winch control mechanism for the CTD probe have been addressed and are ready for testing in a second generation system (SWAMP-2). An Iridium handset has been incorporated into the surface probe so that both radio and Iridium telemetry can be activated with swap-out of modular telemetry components.

| | % COMPLETE |
|--|------------|
| <ul style="list-style-type: none"> ▪ Deployments will be off Carysfort Reef and northern end of Elliott Key, both in 30-35 m depth at the outer edge of the reef tract. Anticipated are hourly current and 6-hourly CTD profiles transmitted every 6 hours. The data will be transmitted by Iridium and incorporated in the EFS radar test-bed and the SEACOOS data streams | 0% |

Status: Deployments of the SWAMP systems are still planned for the same two sites in the EFS HF-Radar domain but due to the redesign issues noted above these are now anticipated to begin in June 2005 with a long term (3 mo.) pre-operational test. Due to the delays in our deployment of these systems, a conventional subsurface ADCP mooring was deployed in August 2004 at 100m depth within the EFS HF-Radar domain (25° 24.'N, 80° 06.0'W) to provide needed validation and comparison data with the HF-radar data. This mooring will be maintained through at least May 2005.

OBSERVING (CONT.)

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

NC Observing, Harvey Seim, PI

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Fixed platforms: deploy/maintain/harden 2 tower deployments off Oregon Inlet and a buoy off Cape Lookout. Test lithium batteries for these. Acquire spares and build additional systems. Conduct outreach and assess additional needs. | 25 |

Status: R4 deployment functioning well. Test buoy for Lookout lost; need to understand mooring failure. NC tower deployments in planning. Considering best way to conduct lithium battery tests.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Moving platforms: focus on shipboard and autonomous T and S mapping. Ship time is necessary for acrobat and glider experimentation in SABSOON, and to support the NE and central NC operations. | 25 |

Status: two cruises to test glider canceled due to poor weather; implemented number of upgrades to glider, just need to get out.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ HF-radar: Operate and evaluate existing HF radar and develop ties to other NEOS and SEACOOS HF-radar networks. Plan for an additional site near Cape Lookout to cover the Gulf Stream as it leaves the shelfbreak. Also consider higher resolution systems for the near-shore region. | 50 |

Status: Sites functioning reasonably well since last move of Buxton site; no major downtime this year. No progress in planning for additional sites.

INFORMATION MANAGEMENT

UNIVERSITY OF SOUTH CAROLINA

Information management and communications – P.I. and Workgroup Chair Madilyn Fletcher, P.I. Dwayne Porter

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Mapping products. USC will continue to provide the interface for continuing and newly developed geospatially-referenced, web-based products. We will coordinate with other SEACOOS partners to receive their data and their input on map product design and function. | Ongoing |

Status: The technical aspects of the GIS based mapping have been developed, and we are addressing additional SEACOOS data and how best to aggregate and provide these data to users via several data request protocols, e.g. WMS/WFS, DODS/OPeNDAP. The ability to quickly create pre-generated maps or existing aggregated SEACOOS data using the MapServer GIS command line capabilities is also being utilized for use in the 'Carolinas Coast' project, a collaborative demonstration project targeting the WFOs in the Carolinas. We are currently identifying mechanisms to train users on the existing mapping products.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ QA/QC libraries. QA/QC code will be developed, e.g. for establishment of range limits and time continuities. | 30 |

Status: We have initiated analysis of how to leverage our combined QA/QC efforts in a technically open and understandable way, with the inclusion of appropriate and available expertise and tools used by federal partners, e.g. the NDBC. Documentation of a proposed SEACOOS netCDF convention which incorporates QA/QC flags is available at http://nautilus.baruch.sc.edu/twiki_dmcc/bin/view/Main/QCNotes#Sample_gc_netcdf_description . Documentation of a proposed QA/QC web service is available at http://nautilus.baruch.sc.edu/twiki_dmcc/bin/view/Main/QCNotes#QC_Web_Service .

%COMPLETE

- Maintenance and enhancement of operational hardware. A second server has been acquired and will be utilized to support existing production oriented processes as well as host a duplicate aggregated archival database which will allow query by partners and potentially the public. This server will also support computational needs by other groups. The necessary software is currently being installed on this server to support these processes.

Ongoing

Status: There are 2 Dell Poweredge Servers which are currently setup and share the load for SEACOOS and other applications. A third AMD Opteron server which has much better processing capabilities is being brought online to help determine possible advantages resulting from an alternative hardware setup. All SEACOOS data have been available on the existing relational database system since August of 2004.

%COMPLETE

- Maintenance and enhancement of operational software. USC will continue to contribute to the development of scripts and programs for automated input and aggregation of SEACOOS data streams. We will also continue to provide Caro-COOPS data to the SEACOOS platform.

Ongoing

Status: USC continues to add code examples to the community code repository, including “DODS Filter Column” (http://nautilus.baruch.sc.edu/twiki_dmcc/bin/view/Main/DODSFilterColumn), “Platform To Database” (http://nautilus.baruch.sc.edu/twiki_dmcc/bin/view/Main/PlatformToDatabase), and “ScreenScraping” (http://nautilus.baruch.sc.edu/twiki_dmcc/bin/view/Main/ScreenScraping). The prototype scripts for providing all Caro-COOPS data to the SEACOOS aggregation scheme via the SEACOOS netCDF convention are in place, and Caro-COOPS mooring wind data are being supplied and displayed within the SEACOOS system. We are currently going through a group process to determine how to aggregate additional data types, as well as associated data standards.

%COMPLETE

- Incorporation of Meta-door components (i.e. metadata generation) in to SEACOOS framework. Metadata will be documented by all partners for SEACOOS observation data.

80

Status: The development of the initial phase of Meta-Door (http://nautilus.baruch.sc.edu/twiki_carocoops/bin/view/Metadoor/WebHome is) complete, allowing users to manage their FGDC oriented record data. Mechanisms for training and discussion within the group are being planned.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Documentation. Processes and protocols that will be documented a data dictionary, descriptions of processes and protocols, and a record of the approaches required for the multi-institutional data integration effort. | 80 |

Status: A draft “Data Dictionary” has been developed, and needs for enhancement and validation by the community are being analyzed. Interaction with the Marine Metadata Interoperability Project has been established (<http://marinemetadata.org>). Documentation of the technical steps taken to develop existing SEACOOS visualization product is in process, and the current status is available at http://nautilus.baruch.sc.edu/twiki_dmcc/bin/view/Main/SEACOOSCookbook2.

INFORMATION MANAGEMENT (CONT.)

SKIDAWAY INSTITUTE OF OCEANOGRAPHY

P.I. and Workgroup Co-Chair Jim Nelson, and P.I.s Rick Jahnke, Dana Savidge

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Provide near-real time data to the SEACOOS modeling group and web site, and to the NWS and NDBC. Provide public access to recent data and graphics through the local SABSOON web site (updated hourly). | 40 |

Status: Data acquisition from two bottom-mounted ADCP packages was interrupted due to equipment failures and will be restored in the spring, 2005. Hourly data delivery to NWS/NDBC and update of SABSOON data on the local web site continue. Several processing/web display issues have been identified that can interrupt web display. These will be addressed in further updates to the data processing and web display scripts.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Coordinate with DMCC for SEACOOS data formatting and exchange procedures, and implementation of SEACOOS QA/QC standards. | 30 |

Status: A new hire, starting in late April, 2005, will have primary responsibility for continuing a major upgrade of the SABSOON database structure and metadata system (interrupted in late fall, 2004 when our database manager shifted to a SkIO IT coordinator position). A SkIO DMCC representative attended the QUARTOD II workshop that focused on QA/QC standards for ADCP and HF Radar current data.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Update data processing scripts in collaboration with UNC partners, and implement improvements to the SABSOON historical database and metadata records (following up from work initiated in Year 2). | 20 |

Status: A major upgrade of the IT infrastructure that supports SABSOON data processing and access has been initiated. This has included acquisition and installation of a new server and

RAID array (underway, with funding from SkIO and other projects as well as SEACOOS), and reconfiguration of the SkIO IT network. These improvements will facilitate interactions with programmers at UNC and USC, as well as streamline the processing/web display scripts. The planned update of the data processing scripts and database structure will proceed once our new hire becomes familiar with the system.

INFORMATION MANAGEMENT (CONT.)

UNIVERSITY OF MIAMI

Observations from the Explorer of the Seas and Associated Data Systems - P.I., Edward Kearns, MPO/RSMAS

| | %COMPLETE |
|--|------------------|
| <ul style="list-style-type: none"> ▪ The Explorer of the Seas will continue to provide daily real-time data from the Straits of Florida and the northern Caribbean Sea. These observations include ADCP, bulk and skin SST, sea surface chemistry, standard meteorological measurements, incoming radiation, aerosol characterizations, upper air wind profiles, radiosonde profiles, pCO₂, and wave height estimates. New real-time products will be delivered to SEA-COOS aggregation servers as the formats for these products are developed in the course of Year 3. | 70% |

Status: Data collection efforts are continuing as planned, and data deliveries are on schedule.

| | %COMPLETE |
|--|------------------|
| <ul style="list-style-type: none"> ▪ The Explorer will continue to serve as a testbed for instruments from both the oceanographic and meteorological communities. | 80% |

Status: Testing and development is continuing as planned. No major problems.

| | %COMPLETE |
|---|------------------|
| <ul style="list-style-type: none"> ▪ The Explorer will continue to pursue public outreach opportunities to educate and inform passengers about oceanography in general and the SEA-COOS program in particular. New displays will be installed aboard Explorer, with the aid of the SEA-COOS O&E group, for these purposes. | 70% |

Status: Continuing as planned.

| | %COMPLETE |
|--|------------------|
| <ul style="list-style-type: none"> ▪ The Explorer's shore-side real-time data stream and the high-resolution archival data system will strive to support the data streams from other Miami SEA-COOS investigators (Mooers-EFSIS, Shay-WERA, Johns-profilers) and the USF and RSMAS Remote Sensing laboratories (Terra-& Aqua-MODIS ocean color and SST, AVHRR SST, etc.). Limited data processing will also be conducted at RSMAS to facilitate satellite product generation. | 70% |

Status: Archival and data distribution system is performing as planned. Limited satellite data

processing from CSTARTS has been accomplished but is pending new licensing agreements and hardware installations (non-SEACOOS).

%COMPLETE

- The Explorer archival-quality database will be recast to adopt new SEA-COOS and IOOS standards for data formats, QA/QC methodology, and accompanying metadata. Reprocessing of various datasets (e.g., ADCP) will be pursued in order to better facilitate their use among the SEA-COOS community.

60%

Status: The 38kHz ADCP data have been reprocessed but await proper error analysis/estimation. New data format (netCDF based) has been implemented. New database prototype has been developed. Proper QA/QC implementation is pending DMCC developments.

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Subcontract to Office of Arts and Sciences Information Services, UNC-CH

%COMPLETE

- **New server hardware** for modest increases in reliability and performance for the website (www.seacoos.org). Support for www.seacoos.org will continue to be available Monday through Friday, from 8am to 5pm.

75

Status: servers purchased; work continues on best configuration. Now have bank of 4 to work with.

%COMPLETE

- A one-time subcontract will be used to fulfill the requirements of a RFP to **redesign the website** (www.seacoos.org). The production of the RFP will be facilitated by OASIS and the SEACOOS Project Manager, utilizing input from SEACOOS members and external evaluations obtained by the Outreach Work Group. Significant emphasis will be placed on a new look and feel (design) for the website.

canceled

Status: Other work priorities have supplanted the website redesign so far and plans to outsource to a subcontract have been canceled. The Modeling Products and Output section of the website was re-done via the PIC process and another PIC for a merged water level observations product is underway. Development of online tools for the cross-functional teams (outlined at the 2004 Fall SEACOOS Workshop) will have significant impact on the current website and will have more impact on SEACOOS efforts than a total site redesign.

%COMPLETE

50

- **Minimal ongoing changes to functionality and content of www.seacoos.org.** Following fulfillment of the subcontract, occasional changes to the website can be made depending on available resources as apportioned by the SEACOOS COO. Principle responsibility for new content will rest with individuals' use of the Content Management System, which allows for distributed content additions and revisions.

Status: The webmaster and GIS specialist have transferred to the Marine Science department. Their work hours are now significantly more available for website modifications. The current water level (merged obs) PIC will produce significant work to be implemented on the web site, as will the online tools for teams (see previous status update).

%COMPLETE

ongoing

- Ongoing **support of Celoxis** will include documentation, version upgrades, and new server hardware. Support for Celoxis will continue to be available Monday through Friday, from 8am to 5pm.

Status: Celoxis is still up and running and being used primarily for ExComm communications and broadcast emails to SIs.

%COMPLETE

75

- **Programming & technical inquiry** will be provided by OASIS staff to enhance existing and research developing technologies in support of the SEACOOS website. Additional support may be available for task-specific programming and research activities for ancillary projects (e.g., Year 2 efforts for the UNC tower SBC, NDBC data marine encoder). Number and size of projects completed in Year 3 will be determined by assignment of resources by the SEACOOS COO.

Status: now limited to support of Iridium communications and informational website; both have moved forward.

%COMPLETE

ongoing

- **Data support of www.seacoos.org** and Celoxis will include regular backups and system monitoring.

Status: Ongoing and operating as scheduled.

| | %COMPLETE |
|---|-----------|
| ▪ <i>Continued Data Integration:</i> Collaboration with SEACOOS data management personnel to implement processes to aggregate internal and external data streams for modeling and outreach products. External data streams are from federal data providers such as NBDC, NWS, and USGS. | 75 |

Status: Good progress to date on inclusion of additional variables. Haines principal participant.

| | %COMPLETE |
|--|-----------|
| ▪ <i>Data Quality and Control:</i> We will implement QA/QC practices as identified by SEACOOS partners. This includes procedures for near, real-time observational data, as well as, after-the-fact. | 25 |

Status: discussions now begun, expected to be a significant effort for next few months.

| | %COMPLETE |
|--|-----------|
| ▪ <i>Establish metadata and data structure for NC observations:</i> We will assist in identifying SEACOOS minimums for data structure and metadata needs for HF radar and in-situ measurements. These will be made available in a manner that are consistent with those throughout SEACOOS | 75 |

Status: Initial description of HF radar complete; observations now visible on SEACOOS beta-site. Work on in-situ continues.

| | %COMPLETE |
|---|-----------|
| ▪ <i>Operational data streams:</i> Scripts and programs will be developed to automate the processes of converting, calibrating, and aggregating data as they are received from remote sites and pushed to data servers for Internet access. These automated processes will need to be sensitive to when sensors and equipment are brought online and offline or when there is a telemetry failure. Also, these scripts will need to access information about changes in calibrations and maintenance. | 85 |

Status: written and functioning well. Now in maintenance mode.

| | %COMPLETE |
|---|-----------|
| ▪ <i>Design relational equipment database:</i> A relational database will be designed to hold information about field equipment and sensors, history of maintenance, calibration data and threshold standards. This will improve the communication of very detailed and pertinent information between the field personnel and data management personnel. This database will be updated by field personnel and used by operational scripts and programs—a crucial step towards operational function. | 35 |

Status: design underway, and some beta testing ongoing. Expect further progress in coming months.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ <i>Continued development of nccoos website:</i> to work out coordination of display with central site. | 50 |

Status: ongoing. Exploring use of phone, issues with hosting various displays.

INFORMATION MANAGEMENT (CONT.)

UNIVERSITY OF SOUTH FLORIDA

USF Data management-P.I. Mark Luther, USF

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ We are participating in all areas of data management integrating efforts with colleagues at USC, UNC and RSMAS. Data are being served at the COMPS, NDBC, and SEACOOS websites. Opendap access to data has been implemented and will be maintained. | 70 |

Status: USF Data Management (USF-DM) team continued to participate with SEACOOS partners (USC, UNC, Skidaway and UM) DMCC colleagues in all SEACOOS data management efforts (Partner/NDBC/NOS sites data integration, Display and Data Sharing standards development). USF continues to provide data from West Florida Shelf COMPS sites and NOAA-NDBC monitoring sites in the SEACOOS region on the USF OpeNDAP server for SEACOOS website (http://seacoos.marine.usf.edu/cgi-bin/nph-dods/data/seacoos_rt_v2/). We have acquired a Dell Precision Server as well as two Dell Poweredge servers. They are being utilized for enhancing the USF-DM efforts.

MODELING

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

P.I. and Modeling Working Group Chair, Francisco Werner, UNC-CH

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Baroclinic circulation. To include hydrography, atmospheric fluxes, and river discharge. Blending of climatology and recent observations will be used to initialize the hydrography. | 80% |

Status: We have had success in completing runs of the order of a week with initialization from climatology, from HYCOM (see below), and imposed atmospheric fluxes.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Coupling with HYCOM. To include bathymetry matching, examine accuracy/compatibility of mass field and momentum fluxes, and exploration of techniques for merging fields | 50% |

Status: We have imported HYCOM fields into our regional model runs. Additional quantitative analyses are still required for the solutions at the shelf-edge.

| | %COMPLETE |
|---|-----------|
| ▪ Data assimilation. Explore implementation of techniques developed under SABLAM for assimilation of ADCP and sea level observations, and examine methods for HR radar data assimilation | 50% |

Status: The procedures for assimilating the ADCP and sea level data are in place. Assimilation of the HR data is not.

| | %COMPLETE |
|---|-----------|
| ▪ Quantitative assessment of generated fields & skill assessment. Will include all modeled fields for which observations are available | 60% |

Status: This effort is continuously ongoing and metrics refined.

| | %COMPLETE |
|---|-----------|
| ▪ Quantification of transport (along- and cross-shelf). To include Lagrangian characterization of SAB, fisheries/MPA applications, and biogeochemical flux considerations. | 75% |

Status: Ongoing with particular application to transport of larval fish on the South Atlantic Bight. There are two papers in preparation for submittal.

| | %COMPLETE |
|--|-----------|
| ▪ Preparation of ocean weather maps, for daily posting and for state of the SEA-COOS coastal ocean domain report. | 10% |

Status: In early stages of planning and development.

| | %COMPLETE |
|--|-----------|
| ▪ Ensemble SEA-COOS domain modeling – explore the use of SEA-COOS wide domain models with USF and UM, including the development of quantitative model ensemble forecasts/hindcasts. | 0% |

Status: We have not begun this effort at this point in time, as it requires the definition of a common grid, time-frame, etc.

| | %COMPLETE |
|--|-----------|
| ▪ Examine the capabilities of the ocean-atmos coupled models with ROMS-WRF. We will beta-test a coupled ROMS-WRF model that was developed by Dale Haigvogel of Rutgers University and Chris Moore of PMEL in Seattle. | postponed |

Status: We have deferred consideration of this effort at this stage – for at least 2 years. This is not a research objective at this point.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Write papers on the above for scientific publication. Peer-reviewed publications will be written and will provide an objective measure of the quality of our findings. | 60% |

Status: Underway for the Lagrangian tracking, the cool 2003 summer event and the hindcasting of the March 2002 events.

MODELING (CONT.)

UNIVERSITY OF MIAMI, RSMAS

East Florida Shelf Information System (EFSIS), P.I. Christopher N. K. Mooers, OPEL/RSMAS/UM.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Complete the barotropic EFSIS comparisons and participate in MODPROD Working Group publications; | 70 |

Status: Reviewing final draft ms.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Implement and test the baroclinic EFSIS within the nowcast/forecast system; | 70 |

Status: Implemented; testing continues.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Establish a high-resolution, nested subdomain model corresponding to the WERA testbed, conduct model validation studies with WERA data, and explore data assimilation there; | 60 |

Status: Established; verification studies in progress; validation studies planned.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Import Global-NCOM (and possibly IAS-NCOM) fields from NCDDC for use as open boundary and initial conditions and evaluate their realism; | 70 |

Status: Global-NCOM fields imported daily; used as OBCs for EFSIS; evaluation in progress.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ Follow-up studies with the NPZD model, the Dry Tortugas nested subdomain, and Lagrangian simulation studies; | 60 |

Status: Studies continue.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Initiate an exploratory effort with surface gravity wave models (e.g., WAVEWATCH III and SWAN); | 10 |

Status: Low priority at the moment.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Significant involvement is planned in developing the annual State-of –the-Southeast USA Coastal Ocean Report. | 90 |

Status: Reviewing final draft report.

UNIVERSITY OF SOUTH FLORIDA, CMS

West Florida Shelf Modeling Subprogram- P.I. Robert Weisberg, CMS/USF

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Baroclinic hindcasts and forecasts – Continue the development Optimal Interpolation methods to composite SST and wind fields and use these for model intercomparisons between POM, ROMS, and FVCOM. | 60 |

Status: SST, color, and SSH-geoV fields are automated and available at <http://ocg6.marine.usf.edu>. Wind fields are in progress (using EDAS + data). A three month POM, ROMS, FVCOM hindcast inter-comparison was completed and presented at IMEMS2004 in Oct. 2004. For the purpose of providing open boundary values ROMS is presently being nested in HYCOM.

| | %COMPLETE |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Nowcast/forecast – Complete barotropic nowcast/forecast skill using EDAS nowcast/forecast for the WFS POM, inclusive of tidal forcing at the open boundary, and implement baroclinic nowcast/forecasts. | 40 |

Status: Coastal SL comparisons were added to the barotropic n/f. By nesting with ROMS we are working toward a fuller domain baroclinic n/f.

| | %COMPLETE |
|---|-----------|
| <ul style="list-style-type: none"> ▪ SEACOOS domain model - Explore the coupling of regional coastal ocean models with larger scale deep-ocean models in collaboration with SEACOOS colleagues and other modeling groups (NRL NCOM, HYCOM, and NOAA ROFS) and plan for data assimilation implementations. | 60 |

Status: We nested a regional ROMS in the Atlantic 1/12th degree HYCOM. Testing is underway. Seasonal baroclinic runs were made with a SEACOOS domain ROMS using climatology for

initialization and monthly mean winds and heat flux.

%COMPLETE

- **Estuarine applications** - Use the FVCOM for the Charlotte Harbor and Tampa Bay estuaries.

60

Status: Completed is a Hurricane Charley storm surge simulation for CH using FVCOM, including an explanation for why a breach occurred at N. Captiva Is. A manuscript will be written. Completed is a three-month simulation of TB using FVCOM with an explication of the flow fields by tides, winds, and rivers. A manuscript is in preparation.

%COMPLETE

- **Linking the estuaries with the shelf** – Use the FVCOM for linking the Tampa Bay and Charlotte Harbor estuaries with the WFS.

40

Status: This is a continuation of work started in the previous year. We improved on the sigma coordinate pressure error that was impacting the shelf slope, and we are presently running long-term simulations for CY2004 through 2005.

OUTREACH AND EDUCATION

SC SEA GRANT

South Carolina Sea Grant Outreach – P.I. and Workgroup Chair, Robert Bacon, SCSGC

| | %COMPLETE |
|---|-----------|
| ▪ SC SEACOOS Coordinator: The coordinator will assume all SEACOOS outreach responsibilities for SC Sea Grant. Specifically the coordinator will be responsible for helping to identify and develop a strong constituent base for SEACOOS products. The coordinator will be responsible for identifying appropriate users for participation in product development, review, and evaluation and conducting such reviews as appropriate | 50% |

Status: Work continues on the identification and engagement of ocean observing constituencies. Several activities completed include:

- Development of a contacts database.
- Completion of the draft user characterization summary.
- Initiated an assessment of cruise line industry use of IOOS in the southeast region.
- Initiated an assessment of port industries use of IOOS in the southeast region.
- Initiated an assessment of energy sector use of IOOS in the southeast region.

| | %COMPLETE |
|---|-----------|
| ▪ Coastal Climate and Hazards Program: (see project description in GA SEA Grant section) | 0% |

Status: Due to changes in Georgia's partnership in the E&E workgroup (as directed by the SEACOOS Board), this project is no longer an element of the Year 3 workplan. The workshop component of the project that was to be funded through SC Sea Grant is being re-scoped to address hazards issues in a different manner. The project will now focus on developing a public/private sector demonstration to utilize SEACOOS storm surge data to enhance existing emergency management products.

| | %COMPLETE |
|---|-----------|
| ▪ Establish Dialogue on Ecosystem-based Fisheries Management: interact with regional fishery management councils to increase their awareness of SEACOOS and begin to develop linkages between fishery management users and SEACOOS PIs. Will include a presentation to the South Atlantic Fishery Management Council Science and Statistics and/or Ecosystem-Based Management Committees to discuss applications for SEACOOS data. | 75% |

Status: Have established and on-going relationship and dialogue with SAFMC staff related to regional fisheries issues. With Dr. Mooers, U. of Miami, held a targeted "super-user" meeting focused on SEACOOS and fishery management user needs with representatives of AOML and NOAA Fisheries Science Center. Generated a report back to the EXCOMM, which has led to the creation of an interdisciplinary thematic working group in fisheries.

SOUTH CAROLINA SEA GRANT/SOUTHEAST COSEE

Lundie Spence, SCSGC

-
- | | |
|---|------------------|
| | %COMPLETE |
| <ul style="list-style-type: none">▪ SEPORT (South East Portal to Ocean Research for Teachers) will offer leadership opportunities for the teachers/participants of the 2004 SECOSEE Ocean Sciences Leadership Institute, and extend ocean sciences information to new groups of educators in partnership with "free choice" institutions. In these 6-hour ocean awareness sessions, information about SEACOOS and other ocean sciences will be distributed and taught. | 80% |

Status: 14 Of 15 SEPORTS have conducted, evaluation surveys are being analyzed. These SEPORT support the emerging network of ocean sciences interests groups through which informal science facilities can access SEACOOS information and products are they are developed. They have received the Waves posters.

- | | |
|---|------------------|
| | %COMPLETE |
| <ul style="list-style-type: none">▪ Passport to the Sea is an electronic newsletter partially supported by SECOSEE and partially by SEACOOS, Articles focus on SEACOOS projects, products and researchers. | 95% |

Status: 2 issues have been web-published

- | | |
|---|------------------|
| | %COMPLETE |
| <ul style="list-style-type: none">▪ Project Maury is a national set of oceanographic lessons provided by the American Meteorological Society, US Naval Academy and master educators. Dr. David Smith from the US Naval Academy and Terri Hathaway, NC Sea Grant Marine Education Specialist will develop extensions of specific lessons to include SEACOOS coastal ocean observing data. | 95% |

Status: 2-day workshop completed in May and projects are in development by AMS and US Naval Academy

- | | |
|--|------------------|
| | %COMPLETE |
| <ul style="list-style-type: none">▪ SEACOOS Poster web support to increase awareness of SEACOOS products and their application in the K-16 system. A web component will be built to complement the waves poster done in Year 2. | 95% |

Status: Additions to SEACOOS.org website have continued to be made on waves lessons, including the recent Tsunami information for educators. In addition, funding has been used to support the development of a DVD on COOS in regard to careers, buoys and research processes which combines SEACOOS and CARO-COOPS. The product should be completed summer.

%COMPLETE
95%

- **SECOSEE Physical Science Workshop for middle school teachers.** A second physical science workshop for teachers will be conducted to demonstrate how SEACOOS coastal ocean data and information can be used in inquiry-based examples for physical science concepts.

Status: Funding was divided into three exploratory workshops: the first involved Margaret Olsen with SkIO scientists and regional teachers in a three day workshop in Savannah; the second involved Dr. Carrie Thomas with educators and NCSU scientists; and the third will target USC. The first two are completed and the materials are in development. The third is in planning.

Evaluation by the USC Office of Program Evaluation has provided evidence that educators and teachers are receiving ocean sciences information, which includes SEACOOS information.

OUTREACH & EDUCATION (CONT.)

UNIVERSITY OF MIAMI

P.I., Ed Kearns RSMAS

%COMPLETE

- **Univ. of Miami Explorer of the Seas OOS Outreach and Informal Education:** We will design and install a touch screen OOS/SEACOOS kiosk exhibit for the exhibit gallery area on Explorer of the Seas and upgrade the graphical explanatory signage of the exhibit galleries to focus on long-term monitoring basics and purposes. The new exhibit will focus on the plans and implementation of a coastal observing system. The exhibit content will be developed by the UM and the O&E Working Group.

100

Status: Done and delivered.

OUTREACH & EDUCATION (CONT.)

FL SEA GRANT

Florida Sea Grant Outreach – S.I. Mike Spranger (FLSG)

%COMPLETE

- **SEACOOS Regional Outreach Coordinator** – A full-time (12 month) education coordinator, based in Florida, has been hired to assist in the design, development, implementation and evaluation of regional education and outreach programs. This individual will assist the outreach specialists and researchers in the identification of constituent needs and in the development of useful and relevant coastal ocean observation products and services.

50%

Status: Co-facilitator of three user group meetings that were held in Georgia, South Carolina, and Florida. Provided 15 formal presentations to scientific, educational and user groups in region. Served as E/E Work Group representative on two SEACOOS Product Interface Committees (Barotropic Model PIC and Water Level PIC). Coordinated SEACOOS DVD filming with Jack Thigpen. Content is currently being edited. Created bi-lingual information posters that were displayed at Hispanic Heritage Days in St. Peterburg, FL. Completed several NOAA case studies on application of OOS data by resource managers.

%COMPLETE

- **Recreational Boater Demonstration Project** - This project will determine needs, potential products and services, and application to Florida's boating community. FSG staff will regularly attend the Clean Boating Partnership, a coalition of Florida's marine industries that is focusing on Florida's marinas and boatyards. Their information needs, potential products and services will be determined and useful ocean obs products developed.

50%

Status: Attended 2 quarterly Clean Boating Partnership programs. Made one presentation on SEACOOS and implications to marine industries and recreational boating. Made one presentation on the Coastal Storms Initiative (now called Coastal Storms Program) pointing out similarities in methodology and results with SEACOOS. Attended and presented at the Miami Boat Show, featuring SEACOOS objectives and "WIIFM" for boaters (200 quality contacts, 8,000 casual contacts). Produced a poster-size exhibit that will be used in future boat shows and at personal appearances before boating organizations.

%COMPLETE

- **Explorer of the Seas Exhibit Evaluation** – This project will be conducted in conjunction with the Explorer Exhibit project and will develop and implement evaluation instruments that will measure the successfulness of these educational programs. These evaluation instruments may be formal and/or non-obtrusive. The Gulf of Mexico COSEE Educator will assist in the development of these evaluation tools.

20%

Status: Discussed project and evaluation methodology with Liz Williams, program manager for Explorer program. Reviewed a preliminary version of the computer program. We are now coordinating time where we can see the new kiosk, and develop appropriate evaluation instruments.

%COMPLETE

- **SEPORT** (South East Portal to Ocean Research for Teachers) – The Florida Sea Grant Program, through its Gulf of Mexico –COSEE Project will coordinate this SEPORT project, which involves developing 6-hour ocean awareness professional development workshops on SEACOOS and ocean sciences.

25%

Status: Discussed implementation of workshops with Florida Sea Grant faculty at annual meeting in October 2004. Discussed implementation of SEPORT workshops with FL COSEE in February 2005. We will make presentation on SEPORT workshops at Florida Marine Science Educator Conference in April 2004. Planned SEPORT workshops will occur in next 6 months throughout Florida.

FL COSEE

Florida Sea Grant Education – Barbara Spector (USF)

%COMPLETE

- **Poster:** A SEACOOS poster focusing on hurricanes and observing will be designed and printed.

Status: There is a color draft of the poster out to hurricane experts and some seacoos educators now. As soon as the feedback comes back we will respond to it and print print. I hope that will be within the month of April.

%COMPLETE

- **DVD:** A DVD will be developed for use in teacher education throughout the SEACOOS states and other states. The subject of the DVD will be the SEACOOS physical science workshop being pilot tested in the summer of 2004 by Florida COSEE. The Gulf of Mexico COSEE will assist with the project.

Status: The DVD is completed and should be ready for distribution within the next two weeks.

%COMPLETE

- **Technology Module involving Center for Ocean Technology:** A teaching-learning module designed for use in teacher education programs will be developed. This module will enhance pre-service teacher understanding of SEACOOS science and give them opportunities to develop skills and abilities to share SEACOOS science with their students through real world applications.

Status: This module was integrated with the information supporting the physical science workshop onto one CD as part of a continuous story line. It should be ready for distribution within the next two weeks.

GA SEA GRANT

The contractual agreement with the University of Georgia and the involvement of the UGA SI, Dr. Davis Stooksbury, was mutually terminated effective December 31, 2004. The University of Georgia has identified another faculty member to assume the SI responsibilities for exention and education in Georgia effective February 1, 2005. Following is the workstatement for the UGA SI for the remainder of Year 3.

MARINE EXTENSION SERVICE

SI, Randy Walker

- The University of Georgia Marine Extension Service will hire a full time Marine Educator, preferably with a strong background in the physical sciences, to organize and run a SEACOOS sponsored extension and outreach program in Georgia and to coordinate Georgia's efforts with South Carolina, North Carolina and Florida's programs. Once in place, this individual will attend a training workshop to learn the history, current operations and the future directions of the SEACOOS and IOOS Programs. The Training workshop will be performed by faculty members of the Skidaway Institute of Oceanography whom are directly involved in SEACOOS. Quarterly meeting will be will between the educator and scientists at the Skidaway Institute of Oceanography. This individual will be housed in an office in the Marine Education Center and Aquarium adjacent to the Skidaway Institute of Oceanography.
- This individual will develop and deliver a series of talks for the general public, k-12 students, in-service teachers, local municipal officials and marine related businesses explaining the program and how the objectives of the program can affect local governments and business enterprises. The educator will also be responsible for developing visual displays explaining the goals of SEACOOS. The educator will also work to develop a kiosk which explains SEACOOS.
- One such display will center around the benefits of using the newly developed High Frequency Radar System being deployed along the southeastern U.S. coastline. This program can benefit Search and Rescue Operations in Georgia by providing information on the direction and speed of surface currents, as well as, providing important information in the event of harmful algal blooms or toxic spills.
- The Marine Extension Service will instigate talks with both the new Georgia Aquarium and the new Gwinnett Co. Environmental and Heritage Center (water-based theme center) in establishing SEACOOS displays and the kiosk at those facilities.

OUTREACH & EDUCATION (CONT.)

NC SEA GRANT

North Carolina Sea Grant Outreach – Jack Thigpen, NCSG

- | | % COMPLETE |
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| ▪ Offshore Boating product development – CODAR: we will work with recreational and commercial fishermen and power and sail boaters to identify useful products and methods of delivery CODAR information and products This will be accomplished through a combination of personal interviews and formal focus groups. | 50 |

Status: Preliminary CODAR products have been developed and are part of a suite of obs products being installed and tested at Jenette's Pier, Nags Head, NC. Mike Muglia, CSI/SEACOOS and Sara Mirabilio and Chelsea Sebastian, NC Sea Grant have designed software and a kiosk that will be installed at the pier in mid-May. Evaluation of the delivery system will take place in June/July 2005.

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- **Offshore Boating product development – Cape Lookout:** we will develop an information delivery scheme for the Cape Lookout buoy measurement system. We will determine the information needs and delivery methods of a real-time wind and wave monitoring system that will improve the safety for recreational boaters in the region.

Status: Commercial fishermen, recreational anglers, dive operators and power and wind boaters have been informed about the eventual availability of ocean and meteorological data available from the buoy. Interest and enthusiasm from local user groups is high. The Newport/Morehead City NOAA/WS office is involved as well. Unfortunately the buoy slipped its moorings and it is currently lost at sea. A spare buoy is being outfitted and the project will resume as soon as possible.

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- **SEACOOS DVD:** As a companion product to the SEACOOS 101 PowerPoint presentation and the SEACOOS brochure, a DVD product will be developed. This interactive tool will be used to generate awareness and understanding about SEACOOS products and researchers with the general public and information-users.

Status: Filming has been completed for the DVD project. This involved gathering film footage from all eleven institutions in the four states. This raw footage is being edited into a 1) an overall SEACOOS documentary (10-20 min); 2) our 10 min documentaries highlighting the structure and function of the four individual work groups; 3) twelve partners 5 min segments. The project completion date is June 30, 2005.

MANAGEMENT

UNIVERSITY OF NORTH CAROLINA SYSTEM

UNC Office of the President, Dr. Russ Lea, Managing PI

Grants Manager Sarah Smith

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- *Financial and Administrative Oversight.* UNC will provide financial and administrative oversight for the project including compliance monitoring, budget management, and project coordination for governance. UNC will work closely with Dr. Seim and the SEACOOS Board of Directors on development of the budget along programmatic lines as well as the annual review of carry over funds. The Contracts and Grants Manager will follow-up on the administrative site visits conducted in Year 2, to ensure “best practices” are being followed for the administration of grant funds and compliance.

Status: UNC continues to work closely with its SEACOOS program partners to ensure administrative and financial compliance for the expenditure of grant funds. Year Two carry over has been finalized and the transition of the UGA SI has been completed. The Year Four proposal was submitted March 21, 2005 and the proposal and budget development process along programmatic lines proved to be efficient.

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- *Biannual SEACOOS PI Conference Support.* UNC will coordinate SEACOOS support for the Biannual SEACOOS PI Conferences. As host sites are identified, UNC will provide discrete funding for these activities. The Fall Conference will be hosted by South Carolina Sea Grant Consortium in Charleston, SC. The Spring 2005 conference location will be determined at the fall SEACOOS Board meeting.

Status: The fall workshop was held in Charleston, SC. The spring 2005 conference will probably be held jointly with SECOORA.

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- *Program Evaluation.* UNC will coordinate a SEACOOS program evaluation component, scheduled for early spring 2005. The evaluation activity will provide independent and objective review of SEACOOS progress toward iterated goals and alignment of goals for the coming program year. The evaluation team will consist of non-SEACOOS personnel with relevant experience in ocean observing, oceanography, formal and informal education and large-scale projects.

Status: The SEACOOS Program Evaluation was conducted at USF January 17-19, 2005. The Evaluation team has delivered its draft report, to which the SEACOOS Board and Executive Committee have responded. The final report has not yet been delivered.

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

*Subcontract to Office of Arts and Sciences Information Services (OASIS), Director,
Rick Peterson*

- **Project Manager:** duties include expediting project-level goals and specific tasks; handling day-to-day management details for the SEACOOS COO; coordinating conferences and meetings; facilitating partner communications; gathering information and creating status reports; Celoxis training and functional assistance; and managing day-to-day office tasks (filing, answering/making calls, etc.).

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ongoing

Status: Efforts are underway to divide this position into two new positions: an Administrative Support position and a Program Manager. It is hoped that this division will enable both functions to be carried out more efficiently and cost effectively. The Administrative Support position will hopefully be hired sometime after June 2005. The Program Manager will require a broader and more formal search. Discussions are underway with SECOORA to divide funding for this position between SECOORA and SEACOOS.

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- The Project Manager will continue to provide Celoxis training for individuals and groups within SEACOOS as needed. Existing training materials will be updated to reflect changes in version upgrades. Additional training materials may be produce as resources allow.

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canceled

Status: Executive Committee did not want to use Celoxis. Celoxis is being replaced incrementally with other tools such as listservs (primarily hosted and maintained by USC). A general document repository has been created on seacoos.org. Efforts are underway to develop additional project management tools with existing Plone tools and USC infrastructure. We believe these current efforts represent a more organic project management approach that may prove more effective.