SUMMARY OF COASTAL RESEARCH COMMITTEE MEETING
April 7, 2008- Hampton University

The SURA Coastal Research Committee (CRC) meeting was attended by Chair, Carolyn Thoroughgood (UDel), Harvey Seim (UNC Chapel Hill), Larry Atkinson (ODU), Donald Benson (UA), Frederick Bingham (UNC Wilmington), Cecil Burge (USM), Benjamin Cuker, (HU), Carl Friedrichs, (W&M), Paul Gemperline (ECU), Nancy White (ECU-CSI), George Maul (FIT), Deidre Gibson (HU) and Don Wright, Philip Bogden, Joanne Bintz, and Luis Bermudez (SURA).

At the outset, it must be noted that the CRC remains committed to making the DCL a reality. From SURA's mission statement: "SURA's goals are to foster excellence in scientific research, to strengthen the scientific and technical capabilities of the nation and of the Southeast, and to provide outstanding training opportunities for the next generation of scientists and engineers." The CRC supports those goals generally and as they pertain specifically to coastal research. The DCL can enable pursuit of all three goals in unison. There continues to be support for the long-term DCL plan as articulated in the DCL Prospectus and Strategic Plan, which was produced in response to a request from the CRC at its December, 2007 meeting. To reiterate key points from that document: "The SURA Coastal Research Committee supports the establishment of a Distributed Coastal Laboratory (DCL). As conceived, the DCL will be a cyber-enabled *virtual organization* of scientists, data systems (including observatories, regional IOOS observing systems and satellite imagery), numerical models, and computing resources to advance scientific discovery and support applications. A unified interface will provide easy access to and manipulation of data and models. The DCL can transform coastal science by providing a trans disciplinary computational environment to enable intersections of models of physical, ecological, biogeochemical and socioeconomic processes. Processes can be examined on a hierarchy of frequencies and spatial scales. The mission of the DCL is ***to enable transformational coastal science*** and, thereby, to contribute to the long range vision of safe and healthy coasts." The DCL goals are to:

- *Enable discovery of diverse and trans-disciplinary coastal phenomena;*
- *Couple observation and modeling of processes across science domains;*
- *Enable high resolution studies of multi-scale coastal phenomena;*
- *Advance information and predicting services for science, safety, security, and commerce; and*
- *Facilitate creation of innovative projects for education and public outreach.*

These goals are consistent with the overarching mission: *To enable transformational coastal science.*
Figure 1 illustrates the fundamental DCL concept of a single cyber infrastructure that serves multiple but intersecting science domains, information and predicting services for cutting edge applications (such as inundation) and innovative training and outreach. The training sphere was added to the earlier diagram as a result of CRC discussions on April 7. As SURA moves forward in each of these multiple areas of endeavor, it must be remembered that that synergistic integration and trans-disciplinary discovery is the target.

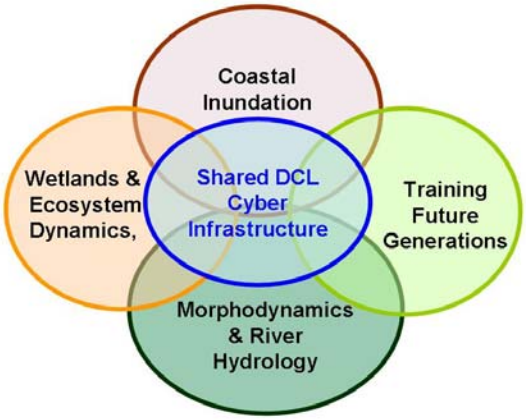

Figure 1. Concept of a single DCL cyber infrastructure serving multiple science domains and training

In the morning session on April 7, Philip Bogden gave a presentation describing the architecture of SCOOP with emphasis on how it can be expanded to serve the needs of a Distributed Coastal Laboratory (DCL). He also gave a brief overview of some of the SCOOP products and tools: event driven forecasts, 24/7 forecasts, retrospective visualization, catalog and archive services, model-model-data comparisons, the sensor web (OOSTethys) and the prototype Splashover tool currently showcased at http://www.openioos.org. The SCOOP program currently has funding only through Aug of 2008 despite having submitted three proposals - two unsuccessful and one in review.

Following the initial morning presentations, there was a question/answer/discussion period focused on the tools of SCOOP that can be utilized as a jumping off point for the DCL. The members of the CRC felt that the DCL could possibly go in several directions. The DCL must ultimately impact "Big Science Questions" once the infrastructure becomes fully mature. For the short term, there was support for a test bed undergraduate education project as a driver for engaging a broader user community. Such a focus can capitalize on expertise within SURA universities and could help to refine an effective demo. The goal would be to bring research quality data (where we include numerical modeling output in the definition of "data") and modeling capabilities (especially those that leverage SURAgrid) into the classroom and to enable students to utilize an evolving DCL to address trans-disciplinary questions. The advantages of an undergraduate education project for the DCL in the short term are that it will bring SCOOP products greater exposure, help in the development of an understandable interface, and provide a target user group. It also allows SURA to develop a presentation layer that can be used for many other research opportunities. Remaining mindful of SURA's mission, this test-bed training project must be viewed as a short-term stage in the pursuit of ***transformational coastal science.***

After lunch, the CRC met in a joint session with the IT Committee to hear Alan Blatecky (RENCI) speak about the Office of Cyberinfrastructure at NSF. He reported that the current RFPs to NSF in that area are geared toward 1) data and visualization interactions; 2) learning workforce and 3) virtual organizations. He felt that with its history of supporting "Big Iron" (supercomputers) rather than programmatic initiatives, that it might be wiser for SURA coastal to pursue funding via the domain specific directorates (i.e. OCE) rather than through the large NSF programs devoted to cyber infrastructure. Alan also clarified that the NSF CI program is not currently supporting, or planning to support, any programs similar to the SURA DCL. Hence, the DCL will not duplicate any foreshadowed NSF initiatives.

The second afternoon session of the CRC meeting evolved into a round table/brainstorming session with the following ideas expressed:

- The UCAR website could serve as a model for interface development (http://www.ucar.edu/tools/education.jsp)
- Create a basic oceanography lab book with modules/lessons linked to the DCL website
- Add additional science focus - e.g. Sea level rise, larval dispersal
- Provide social interaction and networking through the site so that students who are accustomed to using sites like Facebook and Myspace can interact on a familiar level.
- Develop program materials that teachers can use to develop or illustrate lessons.
- Go beyond a data search and discover functionality to create a virtual type environment.
- Follow the Web2.0 example, where scientists and students could not only utilize the site but could also contribute to it - the site should be interactive with a common community access method. Students could contribute to future modules.
- Explore partnership with Google - GoogleCoast, Google Ocean - there are many Google activities in this area.

Consistent with SURA's goal of providing "outstanding training opportunities for the next generation of scientists and engineers", the meeting participants endorsed the idea of utilizing undergraduate education as a *short-term* strategy to promote the DCL as a useful tool to engage and inform students *and faculty*. The DCL could enable students and scientists at all levels to generate and pursue their own research projects. It will provide a training platform to explore, expand, and engage undergraduates and graduate students. The system

interface can be developed based on user-needs. This will also introduce SURA Universities to SURA's coastal programs and illustrate the multi-purpose use of the DCL.

The final discussion of the afternoon focused on funding with a particular emphasis on foundations. Matt Thomas gave an overview of his research into the feasibility of obtaining foundation support for the DCL and led a question and answer session on the subject. It was emphasized that foundations are all mission-specific and that prior to submitting a proposal it would be necessary to ensure that the themes of such proposals closely match the interests and goals of the foundations. It was pointed out by several participants that prior to seeking foundation support it is important to engage the University Presidents via the SURA Council of Presidents. Other suggestions for non-traditional funding included exploring EPSCor regional funding. We also expect to explore the possibilities of partnering with industries such as insurers, petroleum companies and instrument manufacturers.

An action item from the April 7 meeting is to set up a Working Group on Education to design the test bed training demo. It was proposed that a meeting of this working group should take place sometime before the end of June, 2008. Ten names were put forward as nominations to the committee or volunteers from the meeting. The list of names includes several members of the CRC as well as some marine and earth science educators. At its previous meeting in December, 2007, the CRC mandated that SURA staff along with individual CRC members vigorously pursue funding support for the DCL and its central mission from a diversity of federal, state, industry and philanthropic sources. Those pursuits will continue. Furthermore, in accordance with discussions at the April meeting, we will immediately begin researching the interests of appropriate foundations.