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ABSTRACT

This report discusses the establishment of the Center for Marine Sciences and Technology (CMAST), a collaborative effort between Carteret Community College (CCC) (North Carolina) and North Carolina State University (NCSU). The CMAST project began as a concept in 1992, when NCSU officials and science faculty saw the need for a coastal facility to enable more extensive marine and environmental research. Construction began in 1998, and the facility was completed in the summer of 2000. NCSU faculty and staff are housed on the first two floors and a portion of the third, and CCC occupies the fourth floor, which includes a video-conference classroom, labs for biology, physics, and Internet technologies, and faculty offices. Goals of the NCSU-CCC partnership include: (1) to improve the success of community college students in science and math courses; (2) to increase the articulation of students into core science, mathematics, engineering, and mathematics/science teacher education programs at NCSU; (3) to ensure that graduates will be well prepared for the workforce; and (4) to provide comprehensive professional development activities for community college and NCSU science and math faculty. State and local officials expect that CMAST will provide outstanding opportunities for economic, educational, scientific advancements in eastern North Carolina. (JA)

Presentation for League for Innovation in the Community College: 2000 Conference on Information Technology

Building a Collaborative Bridge: Community College and University Interaction and Sharing

By Pamela Hilbert, Janet Spriggs, and Pete Evans

Innovative leadership, broad vision, and technological collaboration have enabled Carteret Community College in Carteret County, North Carolina, to partner with North Carolina State University (NCSU), Raleigh, North Carolina, in establishing a Center for Marine Sciences and Technology (CMAST) on the Carteret CC campus. The collaboration includes sharing a building, strengthening articulation agreements, and creating a state-of-the-art infrastructure to support undergraduate, graduate, and continuing education programming and research. The campus network, video conferencing capabilities, and a comprehensive Information Technology strategy not only under-gird the success of this cutting-edge partnership but also offer exciting opportunities for the larger community.

The case study in Attachment A provides an overview of considerations for the pivotal concept of institutions in two separate systems entering into a comprehensive collaboration. The case study is by no means all-inclusive, but rather gives the reader a sample of the diverse issues involved when a university and a community college partner in facility and programming efforts. This document serves as a synopsis of the history

and outcomes of the collaboration of NCSU and Carteret CC for the creation of the CMAST facility.

Facility Planning

The Center for Marine Sciences and Technology began as a concept about eight years ago. NCSU officials and science faculty saw the need for a coastal facility to enable more extensive marine and environmental research. Two other universities already had a presence in Carteret County for the purposes of Marine Research because the county borders the Atlantic Ocean and includes Bogue Sound, Back Sound, Core Sound, several bays, and portions of several rivers and tributaries. Therefore, Carteret County seemed a logical choice for a coastal presence. The concept became more formalized with the formation of a Marine Sciences Council in 1995 which was created to allow more effective planning and coordination for efforts in the marine sciences within NCSU. The Council consists of representatives of four of the major colleges within NCSU as well as representatives of the North Carolina Sea Grant College Program and the University Research Office. Under the auspices of the Council, the effort to plan and build a facility on the coast of North Carolina began in earnest.

Discussions extended to external partners, University of North Carolina in Chapel Hill (UNC-CH) and Duke University, both of which have facilities in Carteret County, N.C. Other significant additions to the group were representatives of the Carteret County Chamber of Commerce and the Carteret County Economic Development Council. The editor of the local paper, the local representative to the NC General Assembly, the University Chancellor and Provost, and others also became involved in the project. Meanwhile, the president and board members at Carteret CC developed local support for

the idea of having the NCSU facility on the community college's campus. The location of the campus in the central area of the county and on the Bogue Sound waterfront promised an ideal location for accessibility to and support of marine-related research.

As the group became larger and more diverse, planning moved from the theoretical to the concrete. The University of NC System General Administration and administrators of NCSU and Carteret CC began to discuss with legislators the funding of a facility to be located on the campus of Carteret CC. It was decided that NCSU would own the facility to be built on the Carteret CC campus, and those two organizations would share the building with the Sea Grant program and with Carteret County Cooperative Extension. Although the original plans for the facility showed a four-story building, for a while it was scaled back to two stories due to initial funding constraints. With the Director of the Economic Development Council acting as a local champion and a NC senator providing the political motivation, additional funding was appropriated to take the plans back to four stories. Many meetings were held between Carteret CC and NCSU officials to forge agreement on building specifications, information technology needs, and maintenance plans. Construction began in 1998, and the facility was completed in the summer of 2000. NCSU faculty and staff are housed on the first two floors and a portion of the third and they have a Seafood Safety demonstration kitchen, marine research labs, and offices. The Cooperative Extension staff are located on the third floor. Carteret CC occupies the fourth floor which includes a video-conference classroom, state-of-the-art labs for biology, physics, and internet technologies as well as ten faculty offices.

Academic Planning

As construction progressed, faculty and administrators of the two institutions came together to collaborate on academic programming initiatives. An important goal of the partnership was to improve the articulation of Associate degree students into the science-based programs at NCSU. In addition, programming enhancements to benefit the coastal community were desirable. As a result of the planning meetings, Carteret CC and NCSU began to lead a collaborative effort for the advancement of articulation between Associate's degree and Bachelor's degree programs. Faculty and administrators at these institutions recognized that this partnership, along with the central location of Carteret CC in the eastern NC coastal plain, provided an outstanding opportunity to strengthen existing articulation agreements between NCSU and the coastal region community colleges. A consortium was formed with four NCSU Colleges [Physical and Mathematical Sciences (PAMS), Agriculture and Life Sciences (CALS), Education and Psychology (CEP), and Engineering (COE)], and with Brunswick Community College in Supply, Coastal Carolina Community College in Jacksonville, Craven Community College in New Bern, Lenoir Community College in Kinston, and Pamlico Community College in Grantsboro. The purpose of the collaboration is to advance the success of community college science and math students and the articulation of those students into upper division Science and Engineering Technology programs. The consortium has applied for grant money to support its efforts.

Goals of the consortium include the following: (1) to improve the success of community college students in science and math courses; (2) to increase the articulation of students into core science, mathematics, engineering, and mathematics/science teacher education programs at NCSU; (3) to increase the retention and success of those students

after transfer; (4) to ensure that the graduates will be well-prepared for the workforce; (5) to increase diversity and provide access for underrepresented populations; (6) to achieve curricular coherence between community college and upper division core courses so that students transfer to NCSU ready for junior–level studies; (7)to collaborate on the advisement and orientation of college transfer students; (8) to provide comprehensive professional development activities for community college and NCSU science and math faculty; and (9) to document the findings of the project and to share methodologies and resources with public high school and middle school science and math teachers.

The first project of the consortium was the Down East Symposium for Science and Math Faculty which was held on October 13 and 14, 2000, at Carteret CC campus in conjunction with the Opening Ceremonies for the CMAST facility. Over 100 faculty and administrators from Eastern NC community colleges and NCSU participated, and the consortium hopes to repeat the symposium annually.

Technology Planning

A major factor in the success of the CMAST will be the connectivity to the outside world and the state-of-the art technical support for programming and research. The participating departments decided that having sufficient bandwidth to allow the facility to interact as part of the NCSU main campus was necessary. Moreover, the UNC-CH Institute for Marine Sciences, which is located two blocks away from Carteret CC campus, also wished to be connected to the CMAST. Consequently, the three colleges pledged to defray the cost of a DS-3 circuit from the Research Triangle to Morehead City and Carteret CC. The circuit was activated during the summer of 2000. With the enthusiastic cooperation of the Carteret CC Information Technology staff, the

circuit was terminated in their main computer facility and connected to CMAST via fiber. Carteret CC had completed an infrastructure upgrade prior to the DS-3 termination that connected the CMAST facility to the campus-wide fiber optic network. The DS-3 circuit increased the speed and bandwidth of the community college's Internet access, the connectivity to the state-wide community college system, and access to the N.C. Research and Education Network [NCREN]. This connection made Carteret CC the first community college in N.C. to serve as a point of presence on the NCREN. Future work will connect Duke University and Carteret General Hospital, and possibly East Carolina University's Medical School, to the DS-3 circuit. Connection of Duke University's Piver Island research facility would allow nearby coastal research vessels and National Weather Service facilities access to the same bandwidth. Currently, CMAST and Carteret CC can access NCSU main campus resources directly. The campus computing facilities and software licenses are available to machines having NCSU IP addresses that were provided for all computers within the facility. Access to the digital library provided by NCSU's D. H. Hill Libraries are available to university and community college personnel. Regional leaders anticipate that the powerful and varied computer connections will help bridge some of the 'digital divide' that has existed between the counties down east and the high tech Research Triangle Park area of NC.

Two video conferencing facilities have been installed within the facility. One is set up as a conference room and the other as a classroom. The latter is intended to allow courses to be offered by NCSU faculty to NCSU students in Carteret County. The video-classroom will also allow the community college to conduct meetings and classes with remote sites.

Three departments of the University, the College of Agriculture and Life Sciences [CALS], the College of Physical and Mathematical Sciences [PAMS], and the College of Veterinary Medicine [CVM], the NCSU Extension Service, Carteret CC, and the Sea Grant Program now occupy the facility. The collective mood is positive and anticipatory. State and local officials, as well as the institutions involved, expect that the CMAST will provide outstanding opportunities for economic and educational and scientific advancements in Eastern North Carolina.

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www.carteret.cc.nc.us

(Attachment A)

BUILDING A COLLABORATIVE BRIDGE

A Case Study Pamela Hilbert, Pete Evans, Janet Spriggs

A large state university needs space for programs in a county where your community college operates. Two other universities (one state-funded and one private) already have satellite science programs in your county which are not connected to the community college other than through professional relationships among faculty members. State University officials contact your president about purchasing or leasing some land in order to build a science research facility. Your community college's Board of Trustees communicate with the officials and find that there is some interest in a collaborative building project. The collaboration would allow shared land, shared classroom and research space, and possibly some programming partnerships to benefit students of both institutions. The university answers to its own Board of Trustees and the State Board for Universities, and it is funded with state funds and support from private donors, federal funds for some special programs, and some grants. The community college answers to both a local Board of Trustees and the State Board of Community Colleges, and it is funded by state money for programs and salaries, county funds for most capital needs, and federal funds for some special programs.

I. List the logistical steps necessary to plan, fund, and implement a building on community college property which is to be over 50 percent controlled by State University.

2. Discuss possible points of contention in the planning, funding, and building processes.

3. Discuss possible ways such a partnership could benefit community college students.

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