

APPENDIX M

September 25, 2002

MEMORANDUM

To: Committee on Educational Planning, Policies and Programs
From: Molly Corbett Broad
Subject: Establishment of the Global Institute for Energy and Environmental Systems at UNC Charlotte

Request to Establish

In September 2001, UNC Charlotte received authorization to plan the Global Institute for Energy and Environmental Systems. The planning is now complete, and UNC Charlotte has submitted a request to establish this unit as an institutional research institute. The following sections briefly summarize the information provided by UNC Charlotte to satisfy the requirements of Chapter 1200.6[R] in the *University of North Carolina Policy Manual*.

Goals and Objectives

The goal of the institute is to promote interdisciplinary research and education on environmental issues related to civil infrastructure and energy generation, supply, and use. The need to provide efficient and affordable energy resources to power civil and industrial infrastructure for a growing population within and outside the Charlotte region provides an opportunity for the institute to excel in cross-disciplinary research and professional activities. To that end, the institute will:

- enhance the ability of UNCC departments to provide students with high-quality cross-disciplinary environmental and energy research experiences;
- establish strong and mutually beneficial collaborations on projects with the private sector, especially firms based in North Carolina;
- conduct cross-disciplinary research and provide technical support to local, state, and federal agencies on environmental issues pertinent to regional growth, energy infrastructure, and hazard mitigation;
- develop research and allied program links with related North Carolina units and lead consortia of domestic and international universities;
- operate professional development, outreach, and technology transfer activities such as seminars and colloquia, international conferences, and exchange programs.

UNCC was recently selected as the headquarters of the International Society for Environmental Technology, a growing organization of more than 500 members

the Global Alliance for Disaster Reduction, and soon will serve as the headquarters for the planned International Consortium of Environmental and Energy Research Institutes and Centers.

Relevance to Institutional Mission; Relationship with Existing Academic Units

UNCC has been recruiting new faculty in the areas of energy and environmental systems for several years. Building on these recruits, the institute will focus on environmental and energy issues that draw on a constantly changing mix of disciplinary expertise in response to international, national, and regional initiatives and investment decisions. In particular, the institute will support regular academic programs in Civil Engineering, Geography and Earth Sciences, Architecture, Chemistry, Biology, Electrical Engineering, Business Administration, Economics, and Public Policy. Two other UNC units—the Carolina Environmental Program (UNC-Chapel Hill) and the Applied Energy Research Laboratory (NCSU)—focus on related environmental and energy issues but in different ways. The former focuses primarily on the public health aspects of the environment, whereas the latter focuses on the development of energy technologies and student training in thermal sciences. The directors of the three units have discussed opportunities for collaboration with each other and with other UNC units. UNC has no other units with an integrated focus similar to that of the proposed institute.

Anticipated Effects on Instructional Programs

The institute will influence instructional program in two ways. First, research results will be included in course delivery. During its one-year planning period, for example, the institute organized a special course on disaster mitigation engineering, attracting several students from a variety of disciplines and external firms. The interdisciplinary resources and contacts established by the institute made this course possible. Second, students will have opportunities to interact with active researchers and resident fellows. During the past year the institute collaborated with Duke Energy Corporation to initiate a research program addressing technical and policy issues of importance to Duke Energy. It also hosted several international researchers, served as the editorial headquarters of the Monitoring Section of the United Nations Encyclopedia of Life Support Systems, initiated research collaborations with seven universities in the U.S. and abroad, and provided research support and professional opportunities to 22 graduate students and 12 undergraduate students. These opportunities will continue and expand as the institute grows.

Administrative Structure

The institute's Director will be Dr. Hilary I. Inyang, the Duke Energy Distinguished Professor of Environmental Engineering and Science (in Civil Engineering) and Professor of Earth Sciences. The Director will report to the Associate Provost for Research. An Advisory Board, consisting of 10 senior leaders from the private sector, public agencies,

Memorandum

Page Three

September 25, 2002

and academic institutions, will advise the institute on strategic planning, seek opportunities for partnerships, and evaluate the institute's performance. The Deans of the Schools Arts and Sciences and Engineering will serve on the Advisory Board. Research groups led by coordinators will operate across departments and colleges on cross-disciplinary research

proposals, pooled equipment support, and student recruitment and integration into research and allied professional activities.

Budget and Anticipated Sources of Funding

The institute's first-year budget is expected to be \$1.1 million. Funding will derive from three sources: the private sector, led by Duke Energy, has made over \$600,000 in research and program commitments; UNCC has committed over \$300,000 in administrative support, student assistantships, and infrastructure support; and federal, state, and local agencies have contributed over \$200,000 in programmatic support. The budget is expected to increase by approximately 20 percent during the next four years. The expected increase will derive from external grants and associated professional activities. No additional state funding is requested with this establishment.

Space and Capital Needs

The institute is currently located in the C.C. Cameron Applied Research Center. As the institute's operations grow during the next three years, there are plans to obtain more space within the Cameron Center to host more faculty fellows, research associates, students, and laboratories, as well as to conduct conference planning, a seminar series, and journal production. Expanded space and facilities for the institute will be part of UNCC's facility construction authorized in the November 2000 bond referendum. The institute also will acquire additional research instruments and equipment. Funding for these acquisitions will derive primarily from external research grants.

Recommendation

It is recommended that UNC Charlotte be authorized to establish the Global Institute for Energy and Environmental Systems.