Agenda Item 2c

**New Program Proposal**
**Bachelor of Science**
**Environmental Science**
**USC-Columbia**

USC-Columbia requests approval to offer a new program leading to the Bachelor of Science degree in Environmental Science, to be implemented in Spring 2009.

The USC Board of Trustees approved the proposal on June 27, 2008. The Program Planning Summary was submitted to the Commission in November 2007, and reviewed and voted upon favorably by the Advisory Committee on Academic Programs on January 17, 2008. The full proposal was received by the Commission in August 2008.

According to the proposal, the purpose of the program is to provide an undergraduate education that will prepare students to understand and meet the environmental and economic challenges associated with growth, climate change, economic pressures, and energy production. The proposed program will prepare students for employment in both the government sector and environmental industries. The proposal states that graduates will also be prepared for entry into graduate programs in environmental sciences or traditional graduate-level science programs. The proposal also states that students interested in further education in environmental law would be well served by this degree. The program will be interdisciplinary in nature, drawing on expertise from multiple colleges and schools.

The proposal classification section indicates erroneously that qualifying students in the program will be eligible for the LIFE/Palmetto Fellows scholarship enhancement. The proposed program's Catalog of Instructional Programs (CIP) code (030104-Natural Resources Conservation) is not eligible for LIFE/Palmetto Fellows scholarship enhancement.

The proposal states that just over half of the members of the Association of Public and Land-grant Universities (APLU, formerly the National Association of State Universities and Land-grant Colleges) have programs in Environmental Science/Studies, with enrollment in the program ranging up to 500 (Western Washington University). Among the five peer institutions of USC (i.e., the University of Arizona, the University of Colorado-Boulder, the University of Iowa, the University of Kansas, and Indiana University) enrollment in environmental science programs ranges from 70 to 350. Student demand at USC has been demonstrated through enrollment in student participation in the School of the Environment's minor in Environmental Studies, a student petition to create the major, and a Student Senate action to request the proposed major.

The proposal further states that employment in environmental fields is increasing on the national level, and that potential employers of the program's graduates include multiple state agencies and businesses such as BMW.

The institution will actively pursue efforts to create articulation through agreements for two-year students to enter the program, since at the national level 50% of the environmental science/studies majors began their studies at a two-year institution. The proposal states that USC will work through the existing Sustainable Universities Initiative network, comprised of faculty and students at sixteen institutions in the state who share an interest in integrating environmental considerations into their work, to create articulation and collaborative agreements and with two-year institutions.

Within USC, the program will be a catalyst to integrate multiple programs across the University, meeting University and School of the Environment goals and missions by "bringing together strong education, research, and service capabilities to form a unique, interdisciplinary program that serves growing public needs." As described, the proposed program includes courses from multiple departments and programs including: Life Sciences; Earth and Marine Sciences; Geographical Sciences; Mathematics, Statistics, and Engineering; and Health Sciences.

Six South Carolina universities (i.e., Claflin, Clemson, Furman, Lander, Charleston Southern, and Winthrop) currently offer baccalaureate-level programs in or related to environmental science. The proposal states that the programs at Lander and Winthrop are most similar to the proposed program in focus, but that neither can draw on the broad scope of programs and faculty available to USC.

The admissions criteria for the proposed program are: 1) at least 24 credit hours completed at USC or another accredited college or university; 2) a Grade Point Average (GPA) of 2.80 or higher. The proposed program will consist of 128 credit hours of course work. Of these, 62-71 credit hours are in general education, 13-18 credit hours are in electives, and 34-36 are in the major. In addition, students must take Environmental Literacy (ENVR 201 – Introduction to Environmental Studies I and ENVR 202 – Introduction to Environmental Studies II ) and pass with a "C" or higher (eight credit hours). Three new courses will be added to USC's course catalog to support the program.

The program will be evaluated using an assessment process approved by the College of Arts and Sciences. Goals of the program will be tied to specific learning objectives, and evaluation will be used to determine need for program improvement.

Based on interest expressed by students, and on projected employment opportunities, the University anticipates that it will enroll eight students (4.2 FTE) in the

first year of the proposed program, increasing to 15 (15.5 FTE) in the second year, 45 (40.5 FTE) in the third, 50 (50.5 FTE) in the fourth, and 75 (76 FTE) by the program's fifth year. If enrollment projections are met, the program will meet the Commission's program productivity standards for enrollment and degrees awarded.

The proposal states that in the first five years of the program one new faculty (.08 FTE) will be hired, and the teaching loads of other faculty adjusted to create a total of five faculty (1.1 FTE) contributing to the program. In the same period, one administrative/support member will be hired (.5 FTE) and one staff member (.5 FTE). Due to the interdisciplinary nature of the proposed program, faculty from several schools and colleges within the university will be heavily involved with instruction in this program.

There is no specialized accrediting body for the proposed program. The proposal states that USC intends to work closely with the National Council of Environmental Deans and Directors (CEDD) and the National Council for Science and the Environment (NCSE) to address curricular needs of the proposed program.

The existing physical plant and classroom facilities are adequate to provide space for the proposed program. According to the proposal, existing library holdings are adequate to support the proposed program. The library subscribes to 904 environment-related periodicals, including print, online, and government publications, and 304 electronic journals. The library also holds 15,034 core-related book titles, with another 25,511 available through PASCAL.

Anticipated new costs for the proposed program include $10,200 in the first year, increasing to $43,200 in the second year, and decreasing to $43,145 by year five. Categories of new costs in the first five years of the proposed program include program administration ($74,275), faculty salaries ($36,000), and supplies and materials ($9,000). The proposal predicts $181,075 in total new costs for the first five years of the program

Shown below are the estimated Mission Resource Requirement (MRR) costs to the state and new costs not funded by the MRR associated with the implementation of the proposed program during its first five years. Also shown are the estimated revenues projected under the MRR and the Resource Allocation Plan as well as student tuition.

**Estimated Program Costs and Revenue**

| | Estimated Program Costs | | Estimated Program Revenue | | | | |
|---|---|---|---|---|---|---|---|
| | (A) MRR Cost | (B) Other Costs* | (C) Actual State Funding | (D) Tuition | (E) Additional Revenue | (F) Total Revenue (C+D+E) | (G) Total Revenue - Total Costs (F-(A+B)) |
| **Year 1** | $42,021 | $0 | N/A | $44,155 | $0 | $44,155 | $2,134 |
| **Year 2** | $155,078 | $0 | $24,136 | $162,315 | $0 | $186,451 | $31,374 |
| **Year 3** | $405,203 | $0 | $89,369 | $424,068 | $0 | $513,437 | $108,234 |
| **Year 4** | $505,253 | $0 | $233,533 | $527,925 | $0 | $761,458 | $256,205 |
| **Year 5** | $760,380 | $0 | $291,590 | $794,097 | $0 | $1,085,687 | $325,307 |

*Includes costs of an extraordinary nature not otherwise included in the MRR cost calculation (e.g., costs for a new building required to support a program).

These data demonstrate that if USC-Columbia can meet the projected student enrollments and contain costs as shown in the proposal, the proposed program will be able to cover new costs with revenues it generates beginning in the first year of its implementation.

In summary, USC-Columbia is proposing a program leading to the Bachelor of Science degree in Environmental Science. Designed to be highly interdisciplinary, the proposed program will draw heavily on other departments in the university for courses and faculty. The proposed program is intended to provide graduates with skills needed by government agencies at all levels and by businesses which are attempting to monitor and ameliorate their environmental impact.

## Recommendation

The staff recommends that the Committee on Academic Affairs and Licensing commend favorably to the Commission the program leading to the Bachelor of Science degree in Environmental Science at USC-Columbia, to be implemented in Spring 2009, provided that no "unique cost" or other special state funding be required or requested.