



## TRANSMITTAL AND ABSTRACT OF SENATE REPORT

**Date Presented to the Senate: December 6, 2007**

**Presenter: Carmen Balthrop, Chair, Senate Programs, Curricula, and Courses Committee**

**Subject of Report: Proposal to establish B.S., M.S., and Ph.D. degree programs in Environmental Science and Technology**

**Senate Document Number: 07-08-24**

**Voting: (a) on resolutions or recommendations one by one, or  
(b) in a single vote  
(c) to endorse entire report**

### **A. Statement of Issue:**

The College of Agriculture and Natural Resources and the Department of Environmental Science and Technology (ENSP) propose to establish B.S., M.S., and Ph.D. degrees in Environmental Science and Technology as the final step in the departmental and degree program reorganization that began in 2006. All three degree programs are tailored to provide education in particular areas and applications of environmental science and technology. Their specific, science-based focus complements and strengthens the existing range of environment-related degree programs at the University.

The B.S. program will include four clearly-defined and integrated concentrations: 1) Ecological Technology Design; 2) Environmental Health; 3) Soil and Watershed Science; and 4) Natural Resources Management. The four concentrations comply with all requirements and, if approved, will be listed out on the MHEC program inventory for UMD. The B.S. will prepare students for graduate study and careers in a wide scope of public and private entities and provides them with the knowledge and skills base to understand the natural and built environments and to resolve environmental problems. Although the academic programs cover some of the same broad areas as other degree programs (e.g., the Environmental Science and Policy program), the programmatic goals and curricula are distinct. The B.S. in Environmental Science and Technology focuses on teaching students how to apply science and technology to environmental problems using a systems approach. All concentrations build from a 46-credit common core of 19 credits of ENST courses and 27 credits in foundational and related courses in math and science.

Students in the M.S. and Ph.D. programs will specialize in one of three areas: 1) Soil and Watershed Sciences; 2) Ecological Technology Design; or 3) Wetland Science. Most courses for the graduate degree programs have been approved and already are being taught.

The M.S. program requires a minimum of 30 credits beyond the B.S. and includes thesis and non-thesis options. The minimum 24 hours of coursework includes a common core of two ENST foundation courses, one course in statistics, and two semesters of the graduate seminar. Students will specialize in one of the three areas listed above through a coherent set of courses.

The Ph.D. program builds upon the proposed M.S. program and requires a minimum of 50 credits of coursework beyond the B.S. in addition to 12 credits of dissertation research. All students in the Ph.D. program will be required to complete a core including two ENST foundation courses, two courses in statistics, and two semesters of the graduate seminar. Students must have completed all the coursework in their specialization required for the M.S. degree. Each of the specializations also requires a set of courses.

These proposals were submitted to the Senate by the Office of Academic Affairs following favorable recommendation by the Academic Planning Advisory Committee (APAC) on October 22, 2007. The Senate Programs, Curricula & Courses Committee approved the proposal for the B.S. on November 2. The M.S. and Ph.D. proposals were approved by the Graduate Programs, Curricula & Courses Committee on October 26, the Graduate Council on November 14, and the Senate Programs, Curricula & Courses Committee on November 16. If the Senate approves the proposals, they would still require further approval by the President, the Board of Regents and the Maryland Higher Education Commission.

## **B. Recommendation:**

The Senate Committee on Programs, Curricula, and Courses recommends that the Senate approve the proposals to establish the following new programs:

1. the B.S. in Environmental Science and Technology with four concentrations in a) Ecological Technology Design; b) Environmental Health; c) Soil and Watershed Science; and d) Natural Resources Management.
2. the M.S. in Environmental Science and Technology; and
3. the Ph.D. in Environmental Science and Technology.

## **C. Committee Work:**

The Committee considered the proposal for the B.S. at its meeting on November 2, 2007. Leon Slaughter, Associate Dean for the College of Agriculture and Natural Resources, Frank Coale, Chair of the Department of Environmental Science and Technology, and Andrew Baldwin, Associate Professor and Undergraduate Coordinator, were present at the meeting to respond to questions. The Committee considered the proposals for the M.S. and Ph.D. degrees at its meeting on November 16. Leon Slaughter, Frank

Coale, and Martin Rabenhorst, Professor and Director of Graduate Studies, were present to answer questions. In both cases, the Committee voted unanimously to recommend approval of the new degree proposals.

**D. Alternatives:**

The Senate could decline to approve the B.S., the M.S., and/or the Ph.D. in Environmental Science and Technology.

**E. Risks:**

If the Senate does not approve the B.S., M.S., and Ph.D. in Environmental Science and Technology, the College of Agriculture and Natural Resources will be unable to complete their reorganization to better align their programs with the University's mission and strategic goals.

**F. Financial Implications:**

There are no obvious financial risks. Many of the resources associated with these degrees are already in place through existing programs. The College of Agriculture and Natural Resources has allocated additional resources and the Office of the Provost has also allocated funds to provide assistance with start-up costs.