

Environmental Sciences

An interdisciplinary program in the College of Natural Resources and the Environment offering the B.S. in Environmental Sciences.

■ The Review Process

This was a standard AQAD review. Reviewers were:

Brad Smith (Western Washington University)

Robert Tate (Rutgers, the State University)

DeWitt John (Bowdoin College)

■ Main Issues

The visiting team found that the program “offers a high quality interdisciplinary education,” and that “program graduates are successful at obtaining good entry-level positions” in a range of related fields. The team observed that “one unique aspect of the ES major is the availability of a series of applied courses taught by non-traditional faculty from the private sector.” These courses provide specific skills that allow graduates to be “preferentially hired.” Several specific issues were identified by the team:

- **Operational structure.** Because Environmental Sciences at UMass Amherst is an interdisciplinary program without its own faculty, it faces certain challenges. The team noted that faculty participation can be problematic if faculty are “concerned about the split nature of their teaching and scholarship between their home department and the ES program and the potential impact of the divided allegiance on promotion and tenure decisions.” This was acknowledged as a “common concern” for similarly organized programs across the country, and the team suggested several steps to address these concerns: incentives to encourage junior faculty to participate in the program; policies to encourage departments to allow faculty to discharge their teaching and advising obligations through the Environmental Sciences program; and discouragement of duplication of Environmental Sciences offerings in departmental curricula. The team also recommended returning to an earlier practice of providing for formal shared positions between Environmental Sciences and an academic department.

The team reported encountering “a considerable amount of discussion” on the topic of whether the program might be better off as an academic department vs. an interdisciplinary program drawing faculty from departments. The team made no recommendation on this point, and observed that “there are arguments to be made for both models.” The team did, however, note that some of the discussion hinged on issues of program visibility and sustainability, and recommended “a concerted effort by the ES program to reach out” to other UMass Amherst programs, and to pursue joint majors, funding and research opportunities. The team reported that “strong statements supporting continuation of the program were provided at all administrative levels during our visit.”

The team also reported encountering discussion of a possible graduate program in Environmental Sciences, and suggested that the University should “strongly consider the

development of 5 year MS programs in ES with appropriate academic units/departments” and within the Five College consortium.

- **Sustainability.** The team reported that a “primary objective of the faculty as documented in the Self Study Report and verified during meetings with individual faculty members is the desire to maintain (and expand) a sustainable, high quality ES program.” Toward that end, the team recommended both a “traditional” response (“development of a strong curriculum that results in employed graduates) and a less traditional approach “linked more with external visibility and selling of the program to students.” Attractive promotional materials and web sites, and evidence of student achievement of learning objectives that could “demonstrate to students the benefit of attending UMASS, versus competing environmental science programs,” were recommended. Regarding program sustainability, the team also considered possible expansion of the program, and concluded that “some growth in the number of majors can be accommodated,” but that “expansion of the service role may require additional faculty and support resources.”

- **Curriculum and student experience.** Program quality was found to be strong, and the commitment and enthusiasm of faculty and the generally strong academic profiles of students were cited. Students had “**particular praise for faculty advising, internship opportunities, and guidance in finding jobs after graduation.**” The team noted that some **Environmental Sciences programs “require an internship of all ES majors; this could be a long-term goal.”** In terms of program content and emphases, the team observed that **both the curriculum and the program steering committee “would benefit from a larger representation from the social sciences,” especially in the areas of resource management, the economics of climate change, and energy policy.** In addition, the team suggested that the program consider “a truly inter-disciplinary, team-taught capstone or first year course” with participation from both the natural and social sciences.

■ Response to the Review

The Environmental Sciences Steering Committee examined three options for the program’s operational structure: 1) creation of a department of Environmental Sciences; 2) integration of the existing program into an appropriate academic department; and 3) continuing as a free-standing interdisciplinary program. The committee cited advantages and disadvantages of each option, but did not endorse one option over the others. The committee did, however, agree with the teams recommendations regarding policies supporting faculty participation in the program, and recommended that the program director seek replacement of retiring core faculty when departments make future hires. The committee agreed to continue to consider a graduate program, promote student recruitment, and shift some existing courses to constitute more of a capstone experience.

The Dean urged that the questions related to operational structure and a possible graduate program be taken up in fall 2007 through a formal planning process with the incoming Dean of the College. The Dean also expressed confidence that faculty participation in the program would remain strong without formally shared positions, and that departments would be attentive to program needs when making hiring decisions.