

CPR Report Submitted!

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5 **Institution:** Columbus State University
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 School/Division: College of Science
12 **Department:** Department of Environmental Science and Health Sciences
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CPR Findings and Plans for the Master of Science in Environmental Science at Columbus State University

June 24, 2004

1. Major Findings of the Program's Quality, Productivity, and Viability

The Comprehensive Program Review Committee reviewed documentation concerning the courses and programs related to the MS in Environmental Science program at Columbus State University. The Committee noted the clarity of the self-study report prepared by the Department of Environmental and Health Sciences, the insightfulness and honesty of the report prepared by the External Review Team, and the succinctness of the department chair's response to the External Review Team's Report. The committee concluded that the quality of the program is strong, and made recommendations (below) where appropriate to address the productivity and viability of the program.

1a. Quality

As stated in the report of the External Review Team, the best measure of the quality of a program is the post-graduation success of its alumni. In this respect, the Environmental Science program has excelled; graduates are working in an impressive array of jobs related to their field, or they are continuing with their education at higher levels. The program requires a solid foundation in several disciplines, and most importantly, the ability to integrate this knowledge to solve complex environmental problems. The required core curriculum is well suited to providing students with the necessary knowledge base. The program has instituted an excellent and rigorous method of assessment for the degree candidates. The Comprehensive Examination seems to be an effective tool to assure that learning outcomes are achieved and to uphold the standards of the program. The exam also serves to verify to potential employers that graduates of the program have attained the appropriate knowledge base to be successful in the field. Moreover, there are adequate mechanisms provided for students that fail, to either retake the exam or take additional course work. The overall quality of the students is strong. A majority of the students have some work experience before entering the program. The average GRE score during the previous four-year period ranged from 990 to 1047 and the average GPA ranged from 3.43 to 3.69 during this same period (See Table 1: Quantitative Measures). The faculty members working with the Environmental Science program are of the highest intellectual quality. Their credentials are impressive and their achievements are extraordinary, especially in light of their heavy teaching loads and other duties, and the size of the institution. Because the program necessarily depends on core courses offered by faculty in numerous departments, the supervision of quality falls under the purview of several different department chairs. This situation could lead to inconsistencies in the quality of instruction and the level of rigor between courses; however, the review team did not find any indication of substandard instruction. The review team also noted that because of the lack of major environmental science journals in the CSU library, the primary source to these publications is via interlibrary loan.

1b. Productivity and Viability

The Mission Statement for the Master of Science in Environmental Science is clear, and includes a series of expected outcomes of the program that are measurable and realistic. Although the number of students in the program has decreased from a high of 24 in the fall of 2000, the enrollment for the previous three years has remained constant with an average of 16 students per year (See Table 1: Quantitative Measures). The number of degree completions remains steady at approximately three per year. The review team noted that the rigors of the program, including a required thesis, may be contributing to the low number of degree completions. The percentage of female students enrolled during this time period remained consistent at approximately 50 percent, as did the percentage of minority students at approximately 30 percent. The number of credit hours taught fall semester has averaged 137 during the previous four-year period with the cost per credit hour ranging from a high of \$671 in FY2002 to a low of \$394 in FY 2004. The program requires 36 semester credit hours, including six hours of thesis research. An adequate selection of elective courses is offered each semester, and more frequently requested courses are offered on an annual basis. The normal teaching load for the two full-time faculty in the department (including the chair) is four courses or 12 semester hours. Faculty from an array of disciplines teach within the graduate program in environmental science. Faculty obtain external funding on a regular basis to support their research as well as the projects of the graduate students. Since 1996, the chair has obtained \$1,938,768 in funding to support 31 graduate research assistantships. Given the teaching loads and research responsibilities, the review team concluded that the department needs to be expanded by at least one additional full-time environmental scientist.

2. Plans for Improving the Program's Quality, Productivity, and Viability

The Comprehensive Program Review Committee's findings were generally consistent with those of the External Review Team. The Committee recognized the burden inherent in thesis supervision and urged the department to consider ways to incorporate faculty participation into the determination of teaching loads. The committee also expressed concern for the enrollment decline and the low number of degree completions in this relatively new program. In response to the recommendations of both committees, the department has the following major goals for the graduate program in environmental science:

- a. Development of a post-graduate assessment survey that can be used to better modify and evaluate the quality of the course offerings and needs of future program participants.
- b. Recruiting new faculty with a strong background in research and grantsmanship. In particular, an atmospheric chemist, a biometrician, and geomorphologist are specialties particularly needed within the program.
- c. Work with the administration to create a program of incentives for current faculty in order to develop a more diverse external funding base and greater opportunities for thesis-based research.
- d. Assess the needs, potential success and feasibility of the creation of a non-thesis option in the environmental science program.

3. New Resource Allocations for Improvement

The greatest value of the MS in Environmental Science program to CSU is the indirect benefits it delivers to the associated undergraduate programs. For this reason, the administration will support the continuation of the program as follows:

- a. Provide funding from recent resignations for two faculty positions during the 2004-05 academic year.
- b. Add an additional faculty position in 2005-06 as funds become available.
- c. Provide for more space for the delivery of this program by rearranging existing facilities.
- d. Increase funding through grants for graduate assistantships.

4. Plans for Increasing Program Productivity Above Threshold

In addition to those items listed under section 2 above, the dean of the College of Science is committed to the following plans for increasing program productivity above the thresholds:

- a. Reorganize the faculty advisory committee.
- b. Integrate archeology into the curriculum.
- c. Recruit faculty from related CSU disciplines who could contribute to the support of the thesis program.
- d. Develop and implement a formal recruitment program with the assistance of Enrollment Services.

Table 1: Quantitative Measures – MS in Environmental Science

Measure	2000/2001	2001/2002	2002/2003	2003/2004
Number of Declared Majors - Fall Semester	24	18	15	15
Number of Degrees Conferred - Fiscal Year	1	4	3	3
Credit Hour Production - Fall Semester	141	156	138	111
Average Course Enrollment - Fall Semester	4.9	4.5	5.5	4.0
Number of Faculty by EFT - Fall Semester	3.1	5.91	5.91	5.91
Program-Specific Scholarship Funds Awarded	\$0	\$0	\$0	\$0
Cost per Credit Hour of Instruction	\$499	\$671	\$394	\$404
Averages for Declared Majors - Fall Semester				
Average GRE Score	1026, n=20	1047, n=18	1007, n=11	990, n=11
Average Graduate GPA	3.45, n=23	3.69, n=18	3.68, n=14	3.43, n=14
Gender				
Female	9	9	7	7
Male	15	9	8	8
Total	24	18	15	15
Race				
International Students	3	3	4	3
Asian	0	0	0	0
Black	2	1	1	4
Hispanic	0	0	0	0
American Indian	0	0	0	0
Multi-Racial	1	1	0	0
White	18	13	10	8
Total	24	18	15	15
Age				
30 and Under	17	16	9	7
Over 30	7	2	6	8
Total	24	18	15	15
Average	29.8	31.8	31.1	35.3