

Institutional Effectiveness
2022-2023

Program: Environmental Sciences Ph.D.

College and Department: College of Interdisciplinary Studies, Environmental Sciences

Contact: Tammy Boles

Mission:

Environmental Sciences Ph.D. Program Mission: The Environmental Sciences (EVS) doctoral program's mission is to advance knowledge and promote the leadership necessary to understanding natural environments by incorporating perspectives from social sciences, humanities, and environmental sciences in the program's teaching and research in the fields of natural resources and the environment.

Concentrations: There are five concentrations available within the EVS Ph.D. program:

(1) Agriculture; (2) Biology; (3) Chemistry; (4) Geosciences; and (5) Integrated Research

The Agriculture, Geosciences, and Integrated Research concentrations were officially added in Spring 2018.

Attach Curriculum Map (Educational Programs Only):

Attached Files: See Appendix 1

SLO1: Awareness of Interdisciplinary Nature of Environmental Sciences

Define Outcome:

Students will demonstrate understanding of the interdisciplinary nature of environmental sciences such that they are aware of a wide range of environmental concerns beyond the boundaries of any single, specific discipline.

Assessment Methods:

Comprehensive Exams (usually third year of program):

The EVS faculty will monitor students' understanding of the interdisciplinary nature of environmental science by the administration of oral and written comprehensive exams. The comprehensive exam is interdisciplinary and is comprised of questions written by each member of the graduate advisory committee. The timing of the comprehensive exams represents an ideal opportunity for assessment because the student has just completed all or nearly all of his/her coursework. The exams are provided in two different formats (written and oral) that allow better insight into the student's interdisciplinary knowledge and proficiency. The results of these exams are kept on file by the EVS Director.

Criteria for Success (Thresholds for Assessment Methods):

Criteria for success is students passing their comprehensive exams.

Results and Analysis:

Six EVS students, one in Agriculture, four in Biology, and one in Integrated Research, successfully completed their comprehensive exams during the 2022-2023 reporting period. One portion of the exam covers the core courses all students are required to take. There are five core courses in Agriculture, Biology, Chemistry, Geology, and Social Policy, and students take courses and comprehensive exams in four areas. They do not take the course in their area of study.

Integrated Research students, along with their advisor, choose which four courses to take.

Use of Results to Improve Outcomes:

The department is currently reviewing the need for a standardized rubric for scoring individual components of the comprehensive exam.

SLO2: Communication Skills Development through Technical Presentations

Define Outcome:

Students will improve oral and written communication skills by giving technical presentations at symposia, conferences, and similar venues where abstracts are peer-reviewed for acceptance.

Assessment Methods:

Student Annual Reports (submitted once per year):

In December of each year, the program Director requests annual reports from each student that cover the previous 12-month period. EVS students are required to submit an annual report to allow direct assessment of student productivity and development of written and oral communication skills in terms of presentations and publications. The report template also requires additional details regarding the nature of the presentation or publication. Reports are due by the end of January. For example, student reports received in January 2019 covered the reporting period of January - December 2018. Students are provided with a template to follow when preparing reports. The Director and academic staff members review each report and tally the total number of presentations and publications generated by students during the reporting period.

Criteria for Success (Thresholds for Assessment Methods):

The School of Environmental Studies provides supplemental support for student travel to meetings for the purpose of making presentations.

Criteria for success is students traveling to meetings (local, regional, national, and/or international to present their research either through oral or poster presentations.

Results and Analysis:

Table 1. Scholarly activity related to oral communication skills shown by EVS Ph.D. students in the current (2022) and previous six calendar-year reporting periods.

Type of scholarly activity	Student annual report period						
	2016	2017	2018	2019	2020	2021	2022
Conference attendances	25	22	32	32	18	27	30
Poster presentations	17	14	15	15	25	15	18
Oral presentations	9	26	19	16	13	22	43

Use of Results to Improve Outcomes:

Presentations and conference attendance increased in 2022. The department will continue to monitor this outcome and discuss ways to continue encouraging conference and presentation participation.

SLO3: Communication Skills Development through Submission to Peer-Reviewed Publications

Define Outcome:

Students will improve written communication skills by submitting manuscripts to peer-reviewed publications such as scholarly journals, conference proceedings, books, or similar outlets.

Assessment Methods:

Student Annual Reports (submitted once per year):

In December of each year, the program Director requests annual reports from each student that cover the previous 12-month period. EVS students are required to submit an annual report to allow direct assessment of student productivity and development of written and oral communication skills in terms of presentations and publications. The report template also requires additional details regarding the nature of the presentation or publication. Reports are due by the end of January. For example, student reports received in January 2019 covered the reporting period of January - December 2018. Students are provided with a template to follow when preparing reports. The Director and academic staff members review each report and tally the total number of presentations and publications generated by students during the reporting period.

Criteria for Success (Thresholds for Assessment Methods):

Criteria for success is students submitting and publishing manuscripts.

Results and Analysis:

Table 2. Scholarly activity related to written communication skills shown by EVS PhD students in the current (2022) and previous six calendar-year reporting periods.

Type of scholarly activity	Student annual report period						
	2016	2017	2018	2019	2020	2021	2022
Conference attendances	25	22	32	32	18	27	30
Manuscripts submitted	10	13	14	27	8	15	11
Manuscripts published	12	14	10	16	12	10	9

Summative Evaluation:

- The department will continue to monitor student progress on the comprehensive exam.
- The department will review ways to continue encouraging student participation in conferences, presentations, and publications.

List of Appendices:

Appendix 1: Curriculum Map

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Table 4. EVS course alignment with program goals and student learning outcomes.

Course	Title	Interdisciplinary environmental understanding	Communication skills (conference presentations)	Communication skills (journal publications)
EVSA 6010	Environmental Agriculture	x		
EVSB 6010	Environmental Biology	x		
EVSC 6010	Environmental Chemistry	x	x	
EVSG 6010	Environmental Geology	x		
EVSS 6010	Environmental Social Policy	x		
EVS 7900	Scientific Writing and Grantsmanship		x	x
EVS 7910	Environmental Sciences Seminar		x	x
EVS 7990	Research and Dissertation	x	x	x
7000-level electives	(various courses)	x	x	x