Online M.S. in Science Translation and Outreach (STO) in Agriculture, Food and Environment

Curriculum 2 Feb 2021

Program Description

A transdisciplinary program that builds student capacity to identify credible scientific information and incorporate that into programs relevant to issues of public concern. Applications of these skills will occur in potentially any issue relating to agriculture, food and environment. This is a non-thesis program of study.

Student Learning Objectives

1. Engage with diverse audiences and explore information sources to ascertain issues of concern relating to agriculture, food and environment and their transdisciplinary relationships
2. Locate, identify and evaluate the credibility of relevant scientific information in agriculture, food and environment, and distinguish it from non-scientific information
3. Develop and assess evidence-based outreach programs that focus on issues of public concern in agriculture, food and environment

Core Courses (12 credits, required)

Program Development and Evaluation (STO 601 [CLD/SOC 665], 3 cr). The purpose of this course is to provide a basic understanding of program evaluation processes, concepts, and theories and to develop expertise needed to design and conduct systematic evaluations of formal and non-formal programs. The material to be covered is applicable to a wide range of topics and disciplines, including social welfare, youth development, family studies, agriculture and the environment, community/economic development, and other formal and non-formal educational programs. Such programs have a common goal of achieving their desired objectives and being held accountable for the resources they obtain from agencies and stakeholders.

Because program evaluation is part of a larger interdisciplinary content area that includes research design and methods, the course will briefly cover needs assessment and asset building, with program development also being a necessary component. The majority of the course will focus on evaluation design, methods, and implementation. A range of program evaluation and research methods will be presented, and students will be encouraged to identify those approaches that most closely match their own philosophical perspectives, as well as strategies that will be utilized by their groups, organizations and current/future employers. Students will participate in class discussions and activities, reflecting on any experience working with community programs when applicable. Web-based publications, journal articles and the assigned text readings will comprise the content of the course.

Science Literacy and Translation (STO 602, 3 cr). Students will explore, translate and interpret scientific findings into application and policy, enhance their scientific literacy, and learn to evaluate the credibility of sources of scientific information, principally by:

- Examining scientific methodologies including its potential and limitations
- Practicing critical and reflective thinking on relevant scientific issues
- Reviewing scientific literature and evaluating its merits

- Designing an original, evidence - based learning module of a public interest issue

Research Methods (STO 603, 3 cr). This course provides students with foundational knowledge for scientific inquiry and the use of research to inform evidence-based practice. It covers fundamentals of understanding, analyzing, and critiquing research, through an exposure to science philosophy and techniques used to conduct scientific investigations. It covers aspects of the research process from developing a research question to writing the research report. Students will be introduced to qualitative and quantitative research design, methodology, and ethical issues associated with conducting and evaluating research.

Capstone in Science Translation (STO 650, 3 cr).
Students in this course use principles of science translation and outreach to (1) Identify an issue of public concern; (2) Design an original, evidence-based outreach program to address the concern; (3) Create a program implementation plan; and (4) Develop an evaluation plan for the program.

Types of Capstone Projects

1. **A mini-research model** (hypothesis-testing), in which the student translates current scientific information into an applied research question. Such projects must have a grounding in the peer-reviewed literature. Students should be aware that circumstances may impede the completion of such projects during the semester the capstone course is taken. Consult in advance with your Advisory Committee and the DGS concerning this. Project is grounded in peer-reviewed literature.
2. **Translation of scientific content into outreach for selected audience(s)**, in an area somewhat unfamiliar to the student. These may result in typical Extension programming: publication, radio, web site, multimedia. Such projects must have a grounding in peer-reviewed literature. Furthermore, the student's report must reflect that academic grounding.

Elective Courses (18 credits)

In consultation with their advisory committee and subject to approval of the Director of Graduate Studies, students will develop individualized programs of study totaling at least 18 credit hours of elective courses. Electives may be chosen from any academic unit in the College of Agriculture, Food and Environment, including AEC, AFS, BAE, CLD, DHN, ENT, FAM, FOR, PLS, PPA, and RTM. Elective courses from other UK colleges may be considered with the approval of a student's advisory committee and the STO DGS. Courses at the 600 level, 500 level, and 400G level will be acceptable, subject to the following conditions:

- Advisory Committee/DGS approval;
- The program of study is constituted of no more than 15 credit-hours of 400G-level plus 500-level courses.

While the core curriculum provides learning appropriate to the practice of science translation, elective courses serve several purposes: (1) To allow students to gain deeper knowledge in the disciplinary area of their undergraduate degree; and (2) To gain broader, transdisciplinary exposure to less familiar science content, expanding their capacity to translate science content to lay audiences. STO students are encouraged to take at least two electives outside one's area of specialization. Advisory committees will have the responsibility to ensure that students enroll in electives of both types. Such flexibility reflects

the great diversity of programmatic challenges our students will encounter over their careers, particularly Extension agents.

Other Requirements

The Advisory Committee shall be chosen and submitted to the DGS for approval by the end of the second semester of the student's tenure for the M.S. degree.[1] Completion of program requirements include passing a final online oral Exit Exam administered by the student's graduate committee. Content of the final oral exam will include an oral report on the student's capstone project and may include questions on general curriculum content from core courses and/or elective courses.

Admission

Admission will be based on procedures described in the current Graduate School Bulletin.

[1] As per the UK Graduate Bulletin, "the examining committee consists of at least three qualified faculty members recommended by the Director of Graduate Studies and appointed by the Dean of the Graduate School. At least two committee members (including the chair or co-chair) must be members of the Graduate Faculty, and at least one of the two must be a Full member of the Graduate Faculty." Students will have considerable flexibility in selecting additional members of their advisory committee, providing individuals selected have some relevance to the student's professional interests and needs. Additional members of the advisory committee may include community partners in the public sector but outside academia, in the private sector, or in government. All committee members are subject to the approval of the DGS.