

Project Charter for a Cluster for Enhancing Learning and Teaching Environmental Science FYRE (First Year Research Experience)

Description/Background (include purpose and need):

Three different faculty in Environmental Sciences 100-level classes have carried out three distinct approaches to first-year research experience (FYRE) over the past three years. This group is interested in exploring relationships between their unique approaches, their effectiveness, and related topics of interest in Environmental Science FYRE. As FYRE continues to grow in programs at the U of S, our cluster wishes to put forth our best efforts to more fully enhance the student experience in Environmental Science. In doing so we believe we can also help in shaping other science FYRE subjects by understanding and sharing a fuller range of best practices in our subject.

Cluster Lead

Colin Laroque, Professor, Department of Soil Sciences, College of Agriculture and Bioresources, and the School of Environment and Sustainability

Members of the Cluster:

Alec Aitken, Professor, Department of Geography and Planning, College of Arts & Science; Associate member of Archeology and Anthropology, Biology

Xulin Guo, Professor, Department of Geography and Planning, College of Arts & Science

Goals and predicted timeline (specific Deliverables/Milestones) *bullet point please:*

Year 1: explore existing data from FYRE and establish plan for further data collection

- a) Clarify objectives and exchange pedagogy information and data (environmental scan of current and recent FYRE practices)
- b) Hire a research assistant (R.A. who may be research coach)
- c) Set work plan for R.A.; access and analyze existing data
- d) Identify potential journal(s) and methodological Scholarship of Teaching and Learning approaches
- e) Establish goals, criteria, and tools for subsequent data collection
- f) Meet periodically to review progress in research and via email correspondence

Year 2: explore more fulsome data, write up analysis and journal article for publication

- a) Implement suite of additional data collection
- b) Analysis of additional data in light of Year 1 data and analysis
- c) Address and respond to any changes (institutional; specific approaches)
- d) Write-up, edit, and submit for publication to identified journal

Envisioned process (specify how the group will function; e.g., frequency and types of meetings, how you will monitor milestones,):

1. We will hire a research assistant to be with our cluster over the two-year period.

2. We will meet quarterly, but the research assistant will meet with the three PIs monthly to keep everyone abreast of the progress we are making to achieve our team goals.
3. The research assistant will assist us in tracking down past data that will help us in answering our questions, as well as administer and collate any new data that we generate in the process of researching our questions.
4. At our quarterly meetings, we will evaluate how we are progressing towards our end goal of generating a manuscript for publication on delivering First Year Research Experiences in an Environmental Science program.

Financial (specify how funding will be spent, can be high level criteria and processes for allocating funds rather than a specific budget; note any additional or matching funds):

Funding: \$10,000 SoTL Cluster funding requested for 2017/18 and 2018/19 (\$5000 per academic/fiscal year).

Expenses: \$4,500 per year for research assistant
\$500 per year for software licensing (e.g., nVIVO), data collection, survey/focus group incentives, printing.

Scope (Focus):

In Scope: (what is the intended focus of the Cluster)

Three areas of focus will be pursued:

1. Examining student registration, recruitment, and retention behaviour as they may relate to the FYRE in three 100-level introduction to environmental sciences class including “flagging” in the registration system, email and in-person inquiries, in-class survey, third-year and exam data;
2. Analysis of student and potentially research coach perception of FYRE as a value-added and engagement catalyst using existing and projected data collection (to be developed), role of student choice and applied thinking and learning as teaching technique; and
3. Comparing and exploring three unique approaches to overcome identified challenges across approaches, developing recommendations and opportunities for subsequent program adjustment through assessment and supports, and ultimately determining best practices.

Not In Scope: (what will NOT be included in the focus of the Cluster; limits on expenditures may be included here or in the Finances section.):

- Conference presentation support
- Hospitality for meetings

Constraints, Assumptions, Risks and Dependencies of Note

Constraints	Not all professors have taught, or will teach, FYRE in 100-level classes the same number of times; the approaches change each iteration; research coaches are utilized differently in each class/iteration; different organizational culture across departments and colleges.
Assumptions	Projected continuance of FYRE funding and inclusion in courses; the data will

discern projected information. We are also assuming full ethics approval to our research questions and methods of collection of our data from past and future students.

**Risks and
Dependencies**

Although the directions are clear for the questions we ask, we are not sure if all of the data to answer the questions can be ascertained. The questions we pose may have to be tweaked as we explore the available data sources, or the types of data we can expect through surveys of current and past FYRE students.