BIOL/ENEC 669 section 003

1.0 credit hour

Spring 2019

**SEMINAR IN ECOLOGY**

**Using scale to reveal process**

**Instructor:**

Charles Mitchell

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Office: 411 Coker Hall

Office hours: by appointment or drop-in.

**Overview:**

Across fields of science, scale is commonly viewed as a problem, but it can also be a prism. That is, analyses that cross scales can be designed to reveal the process or mechanism causing an observed pattern. Yet, relatively few studies cross scales, and fewer still do so in a way designed to reveal process, mechanism, or causation. What approaches allow scientists to use scale to provide insight? Are there general rules for designing such approaches that apply across fields of science? Can we describe any such rules in a way that stimulates more scientists to employ these approaches?

**Organization:**

This course will seek to answer such questions. It will begin with analysis of papers selected by the instructor, then each student will select and facilitate an in-class analysis of papers from their field of study. We will synthesize our understanding into a conceptual or analytical framework. We will look for opportunities to develop this framework into a student-led paper in a journal.

**Students:**

The course is open to graduate students and advanced undergraduates in the biological or environmental sciences. Undergraduates must have completed BIOL 201 and at least one advanced (400 level or above) Biology course. Experience in reading and discussing the primary research literature is also necessary.

**Time and place:**

We will meet weekly for 50 minutes. The time and place will be established prior to the first day of class. The time will be based on an online poll of the availability of the students who have registered or indicated interest in registering. After establishing a time, a classroom will be reserved and announced.

**Textbook:**

There is no required textbook. Course readings will be posted to the class Sakai site.

**Grading:**

Participation during in-class discussion: 40%

Leading in-class discussion: 40%

Final exam: 20%