

Community Ecology- Foundations and Frontiers - Graduate Seminar

BIOL 608E 2 credits Fall 2013

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One 2- hour meeting per week,

Time and location to be set at first meeting based on student's schedules

Communities have been a key area of study since the beginning of the field of ecology. While much is known about the structure and dynamics of communities, community ecology continues to be a rapidly developing field. The goal of this graduate seminar is to explore the frontiers of research in community ecology, while at the same time grounding the discussion with foundational papers that continue to be relevant. When appropriate, we may use short analysis vignettes in R to highlight particular approaches or techniques.

Format:

This seminar will explore current topics in the field through class discussions of readings and short lectures. At the beginning of the seminar, participants will collectively decide on 6-8 community ecology topics to focus on during the semester. We will then explore each of these topics over 1-2 class periods through discussions of the primary literature and short presentations.

Each week, one student, the **lecturer**, will be responsible for providing a short (15-20 min) lecture on the general topic under discussion that week. A second student will be the **discussion leader**, who will have chosen the assigned readings (in consultation with me) and will lead the discussion of these readings. Each week, one or two key papers or book chapters will be assigned for all students to read. In addition, each student will read at least one additional paper, either on their own or along with a few other students. The discussion leader will present the primary reading of the day and will lead the class discussion of the primary and secondary readings.

Topics:

Below are some of the possible topics we might explore through this seminar, and I encourage student suggestions for additional topics to consider.

possible topics include:

- Niche relations and modern coexistence theory
- Community assembly and null models
- Functional trait-based ecology
- Beta diversity and regional influences on community structure
- Phylogenetic perspectives on community ecology
- Intraspecific variation and 'the ecology of the individual'
- Neutral theory
- Metacommunities
- Phenological impacts of global change
- Microbial ecology and microbiomes

Lecturer's task:

Prepare a 15-20 min lecture providing background on the topic to be discussed that day. The exact content of the lecture is up to you, but consider including a historical perspective on the topic, what the major questions are, an overview of landmark papers and major players in the field, and your sense of where the field is going or what important questions remain to be addressed.

Discussion leader's tasks:

Two weeks before: Find at least 10 possible related articles on the topic and discuss these with me at the end of our meeting period to identify those that will be assigned.

One week before: At the end of our meeting period, tell students about the reading assignments for next week. By the end of the day, post pdfs of the files to the course website.

Class discussion day: Present the major findings of the primary paper and lead a discussion on this paper. All students should volunteer insights from their reading of the primary paper as well as their secondary readings (either during the mini-lecture or during discussion of the primary paper). If near the end of the discussion any students have not contributed something from their secondary paper, the discussion leader should ask those students to provide an overview of that paper.

Grading:

Students' grades will be based on presentations, leading of class discussions, brief write-ups of papers being discussed, and participation in discussions. We only meet 14 times, and you need to be present in order to participate. Discuss any absences with me, ahead of time if at all possible.