

Welcome to Community Ecology BI 472

About the Course

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Class hours and room: TTh 2:00 – 3:50PM, B040 PSC (the Allan Price Science Commons & Research Library)
Office Hours: Thursdays 4:00 - 5:00PM and by appointment.

Prerequisites: BI 370 Ecology (or equivalent). Please check with me if you are missing the prerequisite. A course in Statistics is recommended, and courses in Calculus and/or Population Ecology (e.g. BI 471) are helpful.

Web Site: Our web site is accessible via the UO Canvas server. Login requires your UO Information Services (Computing Center) email address and the corresponding password.

How I will contact you: All of my communication to you outside of class will take place via email. Specifically, I will use the email registered to you by the University of Oregon. If you use another ISP for your email, make sure you arrange to have your UO email forwarded to it, or arrange to change your registered email address with UO.

Required readings and assignments:

I will be assigning reading from a variety of sources. By 5:00PM Friday, I will have posted the next week's readings and writing assignment on the class website. Most of the readings will be available for download as pdf files. To read these you will need Adobe

Acrobat Reader, free software that is installed on UO computers and can be downloaded from the following website:

<http://www.adobe.com/products/acrobat/readstep2.html>

There is a textbook available for this course: Community Ecology (2nd edition) by Gary Mittelbach and Brian McGill. I will be assigning background reading from this text, and the course outline will generally follow the outline of the book. A copy of the text is available on reserve in the Science Library.

About Community Ecology

Community ecology is a subdiscipline of ecology that studies the properties of species assemblages.

Community ecology arose at the end of the 19th century as an attempt to understand the "balance of nature". Given the bewildering variety of species that can be found in a prairie, pond, or forest, naturalists were curious why there were repeated patterns of species composition and life form. Community ecology seeks to answer these and related questions.

The central questions of community ecology are:

- 1) How do communities form (i.e. what are the processes that allow species coexistence) and what causes communities to change?
- 2) How are communities organized (i.e. are there regularities in the structure of communities)?

- 3) What are the attributes of communities (i.e. how does one describe and compare communities) and what causes variation in these attributes?
- 4) What patterns do communities exhibit in space and time, and why?

We will explore these and related questions during this course.

Community ecology is also a foundational science for many applied disciplines, including conservation biology, the study of invasive species, environmental management, and environmental engineering. We will have the opportunity to discuss examples of these applications during this course.

About Me

I joined the University of Oregon faculty in September of 2006, after 8 years on the faculty at Stanford University. My research group studies the community ecology of microorganisms (viruses, bacteria, archaea, and microeukarya), using a combination of laboratory microcosm experiments and field studies using molecular techniques. I am particularly fascinated with the diversity of microbial life and much of my research is focused on the causes and consequences of microbial biodiversity.

Course Goals

I have two goals for this course.

Help you learn some of the central ideas in community ecology—This course is not a panoramic overview of community ecology. Community

ecology is a very broad and integrative science. In a 10 week course an overview could only be cursory. I feel strongly that as upper division and graduate students you will learn more if we take the time to explore in detail some of the major controversies and hot topics in community ecology.

Help you continue your transition from student to scholar—A scholar is someone who can think critically, argue logically, write clearly, and read effectively. Most importantly, a scholar understands how to organize and use knowledge, and takes responsibility for their own learning. My goal is to provide you with opportunities to practice all of these skills.

Critical thinking involves using a variety of forms of information, synthesized logically, to solve a problem. Critical thinking is a key tool for any educated citizen of the planet, and is essential for a practicing scientist. It will be my job to give you a structured opportunity to practice critical thinking by interacting with the literature, your colleagues, and me. This means giving you readings and assignments that allow you to stretch your mental muscles a bit.

A great way to practice critical thinking is to write out your argument--an idea that sounds great in your head may be less wonderful when down on paper. In this class, you will write short paragraphs and longer essays that ask you to synthesize and apply what you have learned.

The primary literature remains the first front in the advance of science. The quantity of the literature is growing exponentially. Reading it *effectively* is a skill that can be learned and practiced.

Strategy for Achieving these Goals

By now, 95% of your education has likely been structured around lectures. Lectures are good tools for downloading information. They require a particular dynamic. This dynamic, bluntly stated, is “professor professes, student writes it down”. Lectures, however, are pretty lousy ways to learn how to engage the literature and to learn how to read and think like a scientist. Instead, we will use the following tools to work on these skills.

Readings and the case method—We will use the case method to dissect the readings. Through this analysis, we get to know the material by working with it, not by memorizing it. Thus for a typical class, you will be given a background reading (usually from our textbook), one or two readings from the scientific literature, plus some study questions. During the class period we will work our way through the readings in order to better understand the context of the research, its major findings, its flaws and strengths. We may do in-class exercises that will help us explore the ideas in the readings. These exercises may take the form of debates, small group discussion of a scientific question, a computer simulation or other exercise.

Essay Paragraphs—Each week, you will be asked to write a short essay on a study question or questions key to understanding that week’s topic. These essays are an opportunity to get some feedback on your writing and to engage with the material.

Research Proposal — You will have an opportunity to work with ideas from community ecology by writing a research proposal. I will give you a

handout describing this assignment in more detail later. In brief, you will write a proposal in small groups (2 - 3 students). You will begin by deciding (in consultation with each other and with me) on a topic for your proposal. You will then write a short literature review (1 – 2 pages) on your research topic, and craft a 5 page research proposal (including information from your review). Near the end of the term the class will be divided into two groups, and each group will read the other groups’ research proposals, write reviews of each, and choose the best proposal for “funding”. You will be given the reviews of your proposal and will have the opportunity to revise it before it is given a final grade. Your grade for the proposal assignment will be based on your literature review, your initial proposal, your participation in the review process (including the reviews you write) and your revised proposal.

Take-home exam — There will be a midterm exam in this class. This exam will be a “take-home” exam and will consist primarily of questions you will have already encountered as study questions, or as questions posed in class. This is an opportunity for you to think more deeply about the course topics and to demonstrate your progress in understanding the material.

Grading — Your final grade will depend on your performance on the weekly essay questions (40%), the midterm (20%), and the group project (40%). In-class participation is very important in a discussion-centered course such as this one. You will not be graded down if you choose not to participate, but I may increase your grade by up to half a grade for exemplary participation.

Tentative Deadlines

(by 12PM, unless stated otherwise)

Groups assigned: January 16.

Proposal topic due: January 25.

Literature review due: February 6.

Midterm handed out: February 11.

Midterm due: February 18.

Proposal due: February 27.

Proposal reviews due: March 5.

Revised proposal due: March 13.

Tentative course schedule

The topics on the tentative outline below are subject to change. The time schedule is just a guess -- we will take as long as needed on each subject.

Week	Dates	Topic
1	January 7 & 9	What is community ecology?
2	January 14 & 16	Biodiversity
3	January 23 (no class on the 21 st)	Predation & parasitism
4	January 28 & 30	Predation cont'd; Interspecific competition
5	February 4 & 6	Facilitation & mutualism
6	February 11 & 13	Community networks, food chains, food webs
7	February 18 & 20	Metacommunities, spatial ecology
8	February 25 & 27	Disturbance & succession
9	March 3 & 5	Community assembly; Discussion of proposals
10	March 10 & 12	Community evolution; Course synthesis

General UO Course InformationClass Courtesy

Please arrive in class on time. Late arrivals distract the instructor and the other students. Please turn off cell phones during the class meeting times. Use your laptop only for class activities. Do not leave class early unless you have cleared it with the instructor in advance. Ask questions if you did not hear or understand something.

Class rosters are provided to the instructor with the student's legal name. We will gladly honor your request to address you by an alternate name or gender pronoun. Please advise us of this preference early in the quarter (or before) so that we may address you properly.

Open inquiry, freedom of expression, and respect for difference are fundamental to a comprehensive and dynamic education. We are committed to upholding these ideals by encouraging the exploration, engagement, and expression of divergent perspectives and diverse identities. Classroom courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of

race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Our classroom is a learning environment, and as such should be a safe, inclusive and respectful place. Being respectful also includes using preferred pronouns for your classmates. Disrespecting fellow students as well as combative approaches, tones and/or actions are not acceptable. Please make us aware if there are classroom dynamics that impede your (or someone else's) full engagement.

Academic integrity

All students will be expected to adhere to the University's guidelines on academic integrity as outlined in the Student Conduct Code: <https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code>. As detailed in the policy, academic misconduct means the violation of university policy involving academic integrity. This includes cheating ("any act of deception by which a student misrepresents or misleadingly demonstrates that the student has mastered information on an academic exercise that the student has not mastered"), and plagiarism ("using the ideas or writings of another as one's own.") The instructors have a zero tolerance policy for academic dishonesty. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures.

Discrimination and Harassment

Prohibited Discrimination and Harassment

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at safe.uoregon.edu. To get help by phone, a student can also call either the UO's 24-hour hotline at 541-346-7244 [SAFE], or the non-confidential Title IX Coordinator at 541-346-8136. From the SAFE website, students may also connect to Callisto, a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at respect.uoregon.edu or aaeo.uoregon.edu or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216 for help. As UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at [Discrimination & Harassment](#).

Accessible education statement of support

The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center in 360 Oregon Hall at 541-346-1155 or uoaec@uoregon.edu.

Campus resources to support your learning

Tutoring and Academic Engagement Center (<https://engage.uoregon.edu/services/>) Drop-in math and writing support in addition to tutoring, study skills support, and Class Encore. Located in the 4th Floor Knight Library (541) 346-3226, engage@uoregon.edu.

Counseling Center Call anytime to speak with a therapist who can provide support and connect you with resources. Located on the 2nd Floor of the Health Center(541)346-3227

Accessible Education Center The University of Oregon is working to create inclusive learning environments. The instructor believes strongly in creating inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your participation, please notify us as soon as possible. You are also encouraged to contact the Accessible Education Center. If you are not a student with a documented disability, but you would like for us to know about class issues that will impact your ability to learn, we encourage you to come visit during office hours so that we can strategize how you can get the most out of this course. Located on the 1st Floor of Oregon Hall (541) 346-1155, uoaec@uoregon.edu

Center for Multicultural Academic Excellence (CMAE) mission is to promote student retention and persistence for historically underrepresented and underserved populations. We develop and implement programs and services that support retention, academic excellence, and success at the UO and beyond. We reaffirm our commitment to all students, including undocumented and tuition equity students. Located on the 1st Floor of Oregon Hall (541) 346-3479, cmae@uoregon.edu

The *UO Access Shuttle* is an on-campus ride service provided at no cost to students with conditions that limit mobility. More information and a sign-up form can be found on the parking & transportation department website: <https://parking.uoregon.edu/content/access-shuttle>.

Reporting

The instructors of this class are Student-Directed Employees. As such, **if you disclose to us, we will respond to you with respect and kindness. We will listen to you, and will be sensitive to your needs and desires. We will not judge you. We will support you.** As part of that support, we will direct students who disclose sexual harassment or sexual violence to resources that can help. **We will only report the information shared to the university administration when you as the student requests that the information be reported** (unless someone is in imminent risk of serious harm or is a minor). Please note the difference between ‘privacy’ and ‘confidentiality.’ As Student-Directed Employees we can offer privacy because we are not required to report certain information to the university. However, we cannot be bound by confidentiality in the same way that a counselor or attorney is. The sharing of information by confidential resources such as these is protected by federal and state laws. Any information that we as student-directed employees receive may still be accessed by university or court proceedings. This means, for example, that we could still be called as a witness or required to turn over any related documents or notes that we keep.

Please note also that we are required to report all other forms of prohibited discrimination or harassment to the university administration. Specific details about confidentiality of information and reporting obligations of employees can be found at titleix.uoregon.edu.

Mandatory Reporting of Child Abuse

UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. Child abuse pertains to individuals who are under the age of 18. This statement is to advise you that your disclosure of information about child abuse to the instructor may trigger my duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting: [Mandatory Reporting of Child Abuse and Neglect](#)

Safe Ride

541-346-7433 ext 2

pages.uoregon.edu/saferide

Safe Ride is an **assault prevention shuttle** that works to provide free, inclusive, and accessible alternatives to traveling alone at night for **UO students, faculty, and staff**.

We are a schedule-ahead service and riders can (1) call once we open to schedule a ride with a dispatcher or (2) leave a voicemail on the day of their ride request. We do not call riders ahead of time to confirm due to capacity constraints, but riders are always welcome to call us to double-check that their ride was scheduled. We are a feminist, ‘for-the-students/by-the-students’ organization and operate out of the Women’s Center in EMU 12F.