

Syllabus Fall 2022
Behavioral Ecology (IB 431, CRN 49658)
Tues, Thurs 11-12:20
2083 Natural History Building (NHB)

Instructor

Alison Bell (alisonmb@illinois.edu)

One on one support is available by appointment. The best way to reach me is via email. You can expect to receive a response to your email within 24 hours Monday-Friday 9am-5pm CST. Weekends I will continue to check email but response time may take up to 48 hours. Time will be reserved at the end of every class period to provide feedback/ask questions.

Welcome to IB 431 Behavioral Ecology!

Behavioral ecology is a fun topic and this can be a very enjoyable class that can change the way you think. I ask that each of you strives to maintain an attitude that is open to learning, enthusiastic about the material and the opportunity to engage with others. I also ask that you please extend the same courtesy to me. I am always looking for creative ideas to encourage participation of your peers and ways to promote learning and engagement so your feedback and suggestions are welcome.

I ask that you please be sensitive and respectful toward your classmates. Everyone is affected by events in our world right now; please keep this in mind during discussions and interactions with your classmates. Everyone has their own challenges and experiences so I ask that you please be considerate, thoughtful and caring toward your classmates and that you look out for one another. This class has the potential to be a welcome distraction and reprieve from some of the craziness in the world right now but our success in creating that environment depends on each of us.

TEACHING PHILOSOPHY

My teaching philosophy includes the following principles:

1. To make the material accessible and interesting to students. As much as possible, I use real-world examples and current events to connect the topics we cover in class to topics that are relevant to students. I take specific steps to make what could be very intimidating material accessible. One of my favorite assignments is to ask students at the beginning of the semester to read a very well written and uncomplicated but elegant paper, often describing a study that the students could actually do themselves. This exercise can be a mind-opening experience for students as they realize that science doesn't have to be expensive or require fancy equipment. Instead, it's a way of approaching problems, and the hallmark of a good paper is one that clearly states its hypotheses and tests them appropriately. I find that this approach helps students build confidence and makes them less intimidated when they read more technical papers later in the term.

2. Mix it up. I think it's helpful to combine different types of assessments, readings, group activities, active learning exercises and instructional media in the classroom. This can help to reinforce key concepts and give students with different perspectives an opportunity to engage with the material. After each class period, I want to know which activities worked in class that day so that it can be improved next time.

3. Break up a hard assignment into smaller, do-able chunks. We will follow a very structured scheme for your semester-long final assignment, which is to write a research proposal. You will write a research proposal that is inspired by one of the studies that we learned about in the class. By restricting the potential topics to material that all of the students are familiar with, this facilitates group-work and peer review. There are several assignments throughout the semester that are designed to keep students 'on track' for this project; written feedback is offered at every stage. After peer review, you will turn in a rough draft to me, which I read very carefully; I make a large number of comments on each student's proposal, and base their final grade in part of their responsiveness to feedback. By having many landmarks along the way, the students generally turn in excellent proposals that they can be proud of at the end of the semester. Altogether, this assignment has been very successful in the past, judging not only by the quality of the finished products, but also by the enthusiasm and interest that students express in their own work and in the work of their peers during in-class presentations at the end of the class. In previous years this project inspired several students to contact the authors of the papers that motivated their study, and even influenced the career choices of some students, i.e. where they want to go and what they want to study in graduate school. The key to the success of this project is that it is very structured and organized and breaks a complicated assignment down into a series of more 'do-able' steps. The written instructions that are provided to the students are very detailed, e.g. tips on structuring each sentence of the introductory paragraph.

4. Promote diversity, equity and inclusion in the classroom and beyond. As a professor, I make an effort to ask myself: do my class content and/or teaching methods implicitly or explicitly privilege any one demography over the other? How can I undo that privilege? Does my syllabus include authors and readings that address a diverse audience; how might I diversify the material by being more inclusive of women and underrepresented scholars/authors? Behavioral ecology/animal behavior as a discipline has been influenced by racist, sexist and eugenic viewpoints, and the field stands to benefit from different perspectives. I think that we are all responsible for creating a positive and safe environment that allows all students equal respect and comfort. I expect all students to help establish and maintain an environment where they and their peers can contribute without fear of ridicule or intolerant or offensive language.

Prerequisites

IB 302 (Evolution) and IB 329 (formerly IB 429, Animal Behavior)

Course description

Behavioral ecology is the study of animal behavior from an evolutionary perspective. This is an **advanced** course for upper-division undergraduates and graduate students, and emphasizes student-led discussions, presentations and participation rather than lecture, homeworks and exams. The instructor assumes that students already have a strong background in animal behavior and/or evolution, and expects students to play a key role in running and directing this course. Behavioral Ecology is grounded in solid theory; you will do math in this course. You will also spend a fair amount of time reading the primary literature. Your grade will be based on your participation in discussions and classroom activities, a research proposal and a homework assignment. You will be evaluated based on your abilities to learn independently, to synthesize material, and to communicate effectively both verbally and in writing.

Course learning goals

In addition to surveying some major topics in behavioral ecology, the objectives of this course are for students to:

1. Learn how to read and discuss a scientific paper;

2. Learn how to write an effective research proposal

More pragmatically, in this class you can expect to:

- 1) Read and discuss the primary literature, i.e. scientific articles
- 2) Interview the authors of recent papers in behavioral ecology. In the past, students have noted that the interviews with scientists were one of their favorite activities in the class, in part because it offered them an opportunity to interact with the author of the paper, which made the science seem much more accessible. The students especially enjoyed hearing stories about the failed experiments that ultimately led up to the final paper, how hard it was to get the paper published, and other such stories from the trenches.
- 3) Develop your writing and scientific thinking skills

Course structure

This is a 3 credit hour course. In addition to attending the 3 hours of class per week, you should dedicate approximately 3-6 hours per week to working on the course itself, although actual time commitments will vary depending on your input, needs and personal study habits.

This is an in person course that requires attendance. We hold class together from 11-12:20 every Tues and Thurs. You will need to complete certain assignments (e.g. read an article, watch a video, listen to a podcast, turn in questions) prior to class. The class period itself will include lecture (10-15 mins max), class-wide discussion, breakout discussion and other in-class activities. The class website is available on Canvas.

Assignments will be submitted via email to AB, and/or via Canvas; pay attention to instructions in class and on the course website.

Course readings

There is not a textbook for this course. However, students might find Alcock's Animal Behavior textbook (the textbook used in IB 329) to be a useful reference. The required readings are all scientific articles, which are available as PDF files in the course website. You are required to read the assigned reading *before* class starts.

KEY ELEMENTS OF THE COURSE

Discussions

A substantial portion of the course focuses on reading and critically evaluating scientific papers. We will read empirical scientific articles and discuss them in small groups. The instructor will provide questions to help guide your reading of each paper; you should answer those questions as you read the paper before class. See the separate document 'Reading and Discussing Scientific Papers' on Canvas for tips.

In class, we will discuss the paper in two rounds. During the first round, students will break into groups, with one pre-appointed discussion leader per group. Each student will act as a discussion leader several times throughout the semester. When you are a discussion leader, you will prepare and share a series of questions for guiding the discussion. The discussion leader will guide their peers through a discussion of the paper, focusing first on the questions provided by the instructor, then following their questions for discussion. During the second round, new groups will be formed. Each student will summarize the previous round of discussion in their group, and ask other students about what their groups discussed. After the second round of discussion, the class will come together to participate in a class-wide discussion focused on the strengths and weaknesses of the paper.

You can earn up to 150 points for leading discussions (generating questions for discussion, facilitating a discussion). Discussion leaders will be evaluated based on their questions for discussion and their success at leading a stimulating and productive discussion. You can earn up to 150 points for participating in discussions (as a non-leader).

All students are required to carefully read the assigned paper prior to class.

One exciting feature of this class is that there will be interviews with some of the authors of the papers we are discussing in class. You will prepare questions for the authors prior to the interview.

Research proposal

Your main assignment for this class is to write a concise, well-devised 3-page (single spaced) research proposal to follow up on one of the readings in class.

Throughout the semester there will be several assignments associated with preparing your proposal. For example, before submitting the final draft, you will turn in a list and summary of relevant papers, you will brainstorm in small groups, you will turn in a summary of your hypotheses and predictions, you will work in small groups to review your peers' first drafts (peer review) and you will turn in a second draft to the instructors. Finally, you will turn in a final draft and give a presentation to the class about your proposed project.

Note that it is highly likely that more than one of you will choose to follow up on the same study. This is not necessarily a problem because good studies prompt more questions than answers. However, *it is your responsibility* to ensure that you are not proposing the exact same project as one of your peers. Consult AB if/when questions arise. Also, you will need to start working on your proposal before we have discussed all the papers. You are welcome to skip ahead and choose a topic from later in the course, but be aware that it will be harder for you to get help/feedback from your peers if you are working on a topic that has not yet been discussed in class. Note that this might put you at a disadvantage, and you will need to be able to carefully explain the study to your peers if they have not yet read it.

Detailed information about how to prepare your proposal is available in the Proposal folder on Canvas.

Homework assignment

There will be one homework assignment due ~mid-way through the course. Content will be drawn from lectures, discussions and required readings.

GRADING

- **Discussions** **300 points**
 - Acting as discussion leader (150 points)
 - Participation in discussion (150 points)
- **Participation** **150 points**
 - Participation in lecture: pop quizzes, in-class activities, etc
- **Proposal** **400 points**
 - List of papers (20 points)
 - Brainstorming (20 points)
 - Hypotheses and predictions (30 points)
 - Rough draft of experimental procedure (30 points)
 - First draft + Evaluation of another student's first draft (50 points)
 - Second draft of proposal (90 points)
 - In-class presentation (90 points)

- Final draft of proposal (70 points)
- **Homework** **150 points**
- **Total:** **1000 points**

Grades will be evaluated on an absolute scale: 930-1000 A; 900-929 A-; 880-899 B+; 830-879 B; 800-829 B-; 780-799 C+; 730-779 C; 700-729 C-; 680-699 D+; 630-679 D; 600-629 D-; <600 F

If no student in the course earns the entire 1000 total points possible, the grading scale will be shifted down. For example, if the highest point total in the course is 990 points, then students earning 920-990 points will earn an 'A', students earning 890-919 points will earn an 'A-', etc. The grading scale for undergraduates will be calculated separately from the grading scale for graduate students.

TIPS FOR SUCCESS

Students who do well in this class:

- 1) Come to class
- 2) Participate in discussions
- 3) Read the papers
- 4) Complete the assignments on time
- 5) Ask questions
- 6) Get really interested in their final project (proposal)
- 7) Express their curiosity by asking questions during class and independently following up on their interests by reading, talking and reflection
- 8) Communicate with the instructor and with any students with whom they are working in small groups or pairs. If you are having difficulties with something or are going to be away from class because of illness or a family emergency (or similar difficulties), please inform your group/partner and the instructor as soon as possible. When possible, provide tips and suggestions to your peers in this class. As a learning community, we can help each other learn and grow. One way of doing this is by helping to address the questions that your peers pose. By engaging with each other, we'll all learn better.

COVID and attendance policy

Students are expected to attend each class session. Attendance will be taken every day. The best way to learn this material is to hear the explanation of a concept that is given in class, and to participate in the classroom discussions and group activities.

Students are strongly encouraged to wear a face mask in class. You should not attend class if you are sick or exposed to COVID. If you have to miss class due to illness or COVID exposure, you should reach out to your team to learn what you missed during class. Documents (e.g. google docs) summarizing each class period will be available to review.

Team structure

Students are assigned to a team of students who are responsible for supporting one another in the event of COVID exposure, illness, etc. Team members will convey information about what occurred during missed class(es), share notes and updates, etc.

COURSE POLICIES (the fine print)

Assignments

Failure to turn in assignments on time do so will result in a one letter grade reduction in the assigned grade for every day it is overdue. When it has been overdue for one week, a zero will be given.

You will primarily be turning in assignments via Canvas, unless otherwise noted.

Re-grading policy

If you believe that an exam or assignment has been graded incorrectly, submit a written request for a re-grade to the instructor within one week of when the assignment was returned. The written request should include an explanation of your position and be attached to the assignment. If you suspect that a simple addition error has been made, speak to the instructor to have the error corrected.

Credit/No-credit policy

To receive credit for this course if you enrolled on the pass/fail basis, you must 1) show up and turn in all assignments or 2) receive the equivalent of a D or higher in this class.

Accommodations

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resource and Educational Service (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak St, Champaign 333-4603 or contact disability@illinois.edu. See www.disability.illinois.edu

Academic integrity

The University of Illinois at Urbana-Champaign *Student Code* should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>. Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: http://studentcode.illinois.edu/article1_part4_1-401.html. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Community of care

As members of the Illinois community, we each have a responsibility to express care and concern for one another. If you come across a classmate whose behavior concerns you, whether in regards to their well-being or yours, we encourage you to refer this behavior to the Student Assistance Center (217-333-0050 or <http://odos.illinois.edu/community-of-care/referral/>). Based on your report, the staff in the Student Assistance Center reaches out to students to make sure they have the support they need to be healthy and safe.

Further, we understand the impact that struggles with mental health can have on your experience at Illinois. Significant stress, strained relationships, anxiety, excessive worry, alcohol/drug problems, a loss of motivation, or problems with eating and/or sleeping can all interfere with optimal academic performance. We encourage all students to reach out to talk with someone, and we want to make sure you are aware that you can access mental health support at the Counseling Center (<https://counselingcenter.illinois.edu/>) or McKinley Health Center (<https://mckinley.illinois.edu/>). For mental health emergencies, you can call 911 or walk in to the Counseling Center, no appointment needed.

Students with disabilities

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the as soon as possible. To ensure that disability-related concerns are properly addressed from the beginning, students with disabilities who require

assistance to participate in this class should contact Disability Resources and Educational Services (DRES) and see the instructor as soon as possible. If you need accommodations for any sort of disability, please speak to me after class, or make an appointment to see me, or see me during my office hours. DRES provides students with academic accommodations, access, and support services. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail disability@illinois.edu. <http://www.disability.illinois.edu/>.

Disruptive behavior

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office for Student Conflict Resolution for disciplinary action.

Family Educational Rights and Privacy Act (FERPA)

Any student who has suppressed their directory information pursuant to *Family Educational Rights and Privacy Act* (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See <http://registrar.illinois.edu/ferpa> for more information on FERPA.

Religious observances

The Religious Observance Accommodation Request form is available at <http://odos.illinois.edu/community-of-care/resources/docs/Religious-Observance-Accommodation-Request-Form.pdf>. Submit the form to the instructor and to the Office of the Dean of Students (helpdean@illinois.edu) by the end of the second week of the course; in the case of exams or assignments scheduled after this period, students should submit the form to the instructor and to the Office of the Dean of Students as soon as possible.

Sexual misconduct reporting obligation

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: wecare.illinois.edu/resources/students/#confidential. Other information about resources and reporting is available here: wecare.illinois.edu.

Inclusivity statement

The effectiveness of this course is dependent upon the creation of an encouraging a safe classroom environment. Exclusionary, offensive or harmful speech (such as racism, sexism, transphobia, etc) will not be tolerated. We are all responsible for creating a positive and safe environment that allows all students equal respect and comfort. I expect each of you to help establish and maintain an environment where you and your peers can contribute without fear of ridicule or intolerant or offensive language.

Week	Date	Topic	Before class	In-class activities
1	Tues Aug 23	Introduction		Go over syllabus, assign teams
1	Thurs Aug 25	Natural selection, genes and behavior	Read tips on how to read and discuss papers, Answer questions while you read Pope 2000	Discuss good for the species arguments, Discuss Pope 2000
2	Tues Aug 30	Behavioral evolution	Answer questions while you read Trut 1999, watch video about foxes	Discuss Trut 1999
2	Thurs Sept 1	Modeling in behavioral ecology with special guest Tina Barbasch	TBD	TBD
3	Tues Sept 6	Optimality and game theory	Read instructions for proposal, Answer questions while you read Abrahams & Dill 1989	Go over instructions for proposal, Discuss first proposal assignment (choose a paper to follow up on + refs), Discuss Abrahams and Dill 1989
3	Thurs Sept 8	Optimality and game theory, cont.	Answer questions while you read Giraldeau et al 1994	Discuss Giraldeau et al 1994
4	Tues Sept 13	Mating systems and sexual selection	Turn in assignment to choose a paper to follow up + 5 to 10 references, read Rodd et al 2002	Discuss Rodd et al 2002
4	Thurs Sept 15	Brainstorming in class		Assign homework, Brainstorm
5	Tues Sept 20	Brainstorming in class, cont.	Turn in a Summary of brainstorming	Brainstorm
5	Thurs Sept 22	Mating systems and sexual selection, cont.	Answer questions while you read Dinh 2022	Discuss Dinh 2022, interview Dinh
6	Tues Sept 27	Mating systems and sexual selection, cont.	Answer questions while you read Brennan et al 2010, listen to Brennan podcast, watch Isabella Rosellini video	Go over 2nd proposal assignment (Hypotheses), Discuss Brennan et al 2010

6	Thurs Sept 29	Social behavior	Answer questions while you read Shah and Rubenstein 2022	Discuss Shah and Rubenstein 2022, interview Shah
7	Tues Oct 4	Sex and the evolution of sex	Turn in Homework, answer questions while you read Monk et al 2019, listen to podcast interview with Hanna Kokko	Discuss Monk et al 2019, interview Monk
7	Thurs Oct 6	Parental care	Answer questions while you read Jarrett et al 2018, watch interview with Becky Kilner	Go over 3rd proposal assignment (rough draft of experimental procedure), Midway evaluations, Discuss Jarrett et al 2018
8	Tues Oct 11	Behavioral plasticity	Turn in Hypotheses and predictions, Answer questions while you read Nielsen et al 2018	Discuss Nielsen et al 2018, interview Nielsen
8	Thurs Oct 13	Alternative strategies	Answer questions while you read Emlen 1997	Discuss Emlen 1997
9	Tues Oct 18	Alternative strategies, cont.	Answer questions while you read Caro and Bateson 1986	Discuss Caro and Bateson 1986
9	Thurs Oct 20	Individual differences	Turn in Rough draft of experimental procedure, read Sih et al 2004	Discuss Sih et al 2004
10	Tues Oct 25	Behavioral development and learning	Answer questions while you read Girvan and Braithwaite 1998	Discuss Girvan and Braithwaite 1988
10	Thurs Oct 27	Behavioral development and learning, cont.	Answer questions while you read Aplin et al 2015	Discuss Aplin et al 2015, watch videos
11	Tues Nov 1	Communication	Answer questions while you read Lawson et al 2021	Discuss Lawson et al 2021, interview Lawson
11	Thurs Nov 3	The dynamic genome	Send your 1st draft to your partner, read Snyder-Mackler et al 2019, listen to interview with Frances Champagne podcast	Discuss Snyder-Mackler et al 2019
12	Tues Nov 8	Genes, behavior and society		Discuss Borello and Sepkowski 2022, interview Sepkoski

			Read Borello and Sepkoski 2022, listen to podcast with Paige Harden, read review of Harden book by Feldman and Riskin	
12	Thurs Nov 10	HIREC	Turn in your Evaluation of your partner's 1st draft, Read Sih et al 2013	Discuss Sih et al 2013
13	Tues Nov 15	HIREC, cont.	Read Smith et al 2015	Discuss Smith et al 2015
13	Thurs Nov 17	TBD	Turn in your 2nd draft	Go over guidelines for presentations
	Tues Nov 22	Thanksgiving break		
	Thurs Nov 24	Thanksgiving break		
14	Tues Nov 29	In-class presentations of proposals		
14	Thurs Dec 1	In-class presentations of proposals		
15	Tues Dec 6	In-class presentations of proposals	Turn in the Final draft of your proposal	