

**Biology 132: Field Behavioral Ecology (Spr. 2007)**

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Meetings:	Bot 133		

**Schedule:**

Week	Times	Monday	Tuesday	Wednesday	Thursday	Friday
May 7-11	9:30-12:00	Topic 1	Topic 3	Topic 4	Topic 5	Topic 6
	1:30-4:30	Topic 2	Paper 1&2	Paper 3&4	Paper 5&6	Paper 7&8
May 14-18	9:30-12:00	<b>Test</b>	Proposals	James Reserve		
	1:30-4:30	Stats				
May 21-25	James Reserve					
May 28-June 1	Morning	Holiday	Data analyses	Data analyses	Data analyses	Data analyses
	Afternoon					
June 4-8	Morning	Data analyses	Data analyses	Data analyses	Talks	
	Afternoon				Party	Paper due
<b>Grading</b>	Participation & Effort	25%				
	Essay exam	20%	(Covers Topics 1 through 6 only, not the papers)			
	Paper presentation	10%				
	Written presentation	30%				
	Oral presentation	15%				

- Topics:**
1. Introduction & Basic foraging models
  2. MVT, Central Place, and Variance Risk
  3. Information
  4. Distributions and competition
  5. Ants!!!
  6. Rodents!!!

**Papers:**

#1. Luttbegg, B & T. A. Langen. 2004. Comparing alternative models to empirical data: Cognitive models of western scrub-jay foraging behavior. *American Naturalist* 163: 263-276.

- #2. Devenport, L. D. & J. A. Devenport 1994. Time-dependent averaging of foraging information in least chipmunks and golden-mantled ground squirrels. *Animal Behaviour* 47:787-802.
- #3. Flaxman, S. M. & C. A. deRoos. 2007. Different modes of resource variation provide a critical test of ideal free distribution models. *Behavioral Ecology and Sociobiology* 61: 877-886.
- #4. Riley, C. & L. M. Dill. 2005. The little Miss Muffet effect: Quantifying the effect of predation risk on foraging patch choice by houseflies (*Musca domestica*). *Journal of Insect Behavior* 18:847-857.
- #5. Langen, T. A., F. Tripet & P. Nonacs. 2000. The red and the black: Habituation and the dear-enemy phenomenon in two desert *Pheidole* ants. *Behavioral Ecology and Sociobiology* 48:285-292.
- #6. Greene, M. J. & D. M. Gordon. 2007. Interaction rate informs harvester ant task decisions. *Behavioral Ecology* 18:451-455.
- #7. Kotler, B. P., J. S. Brown, S. R. X. Dall, S. Gresser, D. Ganey & A. Bouskila 2002. Foraging games between gerbils and their predators: Temporal dynamics of resource depletion and apprehension in gerbils. *Evolutionary Ecology Research* 4:495-518.
- #8. Swaisgood, R. R., M. P. Rowe & D. H. Owings 2003. Antipredator responses of California ground squirrels to rattlesnakes and rattling sounds: The roles of sex, reproductive parity, and offspring age in assessment and decision-making rules. *Behavioral Ecology and Sociobiology* 55:22-31.

**The Course:** The main purpose of this course is to provide a unique field experience that involves designing and executing a research project. It is meant for students to gain an appreciation of the joys and difficulties associated with behavioral research. Unlike most other courses, your grades will depend more on your effort than your actual results. You are not being graded on whether your projects “work” (i.e., are the results of sufficient quality to merit publication in a scientific journal?). In fact, we expect that most of the projects in this course will probably not be particularly successful. Given the foreign location and severe time and budget limitations, unqualified success is unlikely. Even highly experienced scientists would be unlikely to produce publishable results under such conditions. So instead, we will grade on the commitment you show to your project and your ability to clearly communicate your project’s goals and explain the outcomes. I do expect that by the end of the course, you will be able to clearly present what went right and wrong with your project and to explain how your project could be improved (if you were to set out to do it again!).

In pursuing the above goals, the class is designed to stimulate thinking about behavioral ecology in general rather than learning about particular topics in the discipline. Most of the presentations will be more like conversations than lectures. There will be papers available on the course website for the various topics. I expect you to have read these before class. Also, each of you will be responsible for reading one paper and leading the class discussion on that paper. Each of these papers presents a “point of view” on the given topic that may be conceptual or experimental. You will be expected to contribute insights from your paper to the overall discussion. Keep in mind that these discussions are intended to generate interesting questions and doable experiments for your research projects. The degree to which this format works will greatly depend on your preparation and participation.

The research projects will be collaborative team projects. The teams will be composed of 2-3 students each, and it is expected that all individuals will contribute equally to the experimental design, execution, write up, and presentation.

**The Grading:** The total points in the class are 400 and there is no curve for this class. 90% or better is the A range (90-92 = A-; 93-96 = A; >96 = A+), etc...

- A. Class participation and effort. Obviously this grade depends on contributions to class discussions and the team projects. To evaluate the latter, I will expect you to keep and turn in a field journal. In this journal, you will record your daily activities as they relate to your project for the course. In your journal, you should also include the original data you collect for your project. (Points = 100)
- B. Exam. You will have 4 essay questions to answer. The questions will relate to the topical discussions. (Points = 80)
- C. Paper Presentation. Evaluated on your understanding of the paper you have to present, plus the quality of discussion that you generate. (Points = 40).
- D. Written presentation. Each team will collaborate on writing a paper. The paper should have the following sections: Abstract, Introduction, Materials and Methods, Results, Discussion, Acknowledgements, Literature Cited. Depending on the details contained in your proposal, it may be possible to incorporate some or all of your proposal into your final paper. Everyone should be involved in collecting and analyzing the data, discussing the results, and outlining the final paper. All of you are responsible for understanding all aspects of the project and being able to individually answer questions on any aspect of the project. Be sure that the paper reads coherently. Spelling and presentation count. In the 'real' world, sloppy manuscripts may be sent back without review! The body of the paper will likely be 10-15 double-spaced pages long (plus references, figures, tables, etc.). In addition to the hardcopy, please submit a copy on diskette or CD. A single grade will be given to the proposal and therefore all team members will get the same grade. (Points = 120)
- E. Oral presentation. There should be 3 parts: 1) Introduction, Justification and Hypotheses to be tested, 2) Materials and Methods, 3) Results and Discussion. Each part should be 4-5 min long. The entire talk should be 15 min long and there will be 5 min for questions from the class. You may use PowerPoint or overheads to help present your talk. If you use PowerPoint, be sure to load the talk onto the presentation computer before class begins. All group members will be graded individually on their contribution to the entire presentation. (Points = 60)

**Readings:** There is no textbook or reader for this course. The papers for the topics and your presentations are available on the course webpage (<http://www.lsic.ucla.edu/classes>).