Spring 2017

BSC 6926 Topics in Biology: Quantitative Ecology

Instructor: Joel Trexler
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This workshop is a complement to this year's Glaser Lecture Series
Meets in AC1 room 317

Note: Class will be inverted format requiring extensive pre-class reading and preparation by all students and the professor; in-class activities will be discussion based.

Intended audience: Graduate students who have completed two semesters of basic statistics and perhaps some data gathering, and are ready to start analyzing their data. This is NOT a statistics course and does not replace any of the classes offered by the statistics department. Instead, it's a review of my personal observations on what you need to know that is not taught in class.

Required Texbooks:

1. Gotelli, N.J. and A.M. Ellison. 20012. A Primer of Ecological Statistics, 2nd Edition. Sinauer Associates, Inc., Sunderland, MA.
2. Hilborn, R., and M. Mangel. 1997. The Ecological Detective. Confronting Models with Data. Princeton University Press, Princeton, NJ.

Class Schedule

1.	Friday	January 13	9:30-11:30	Probability (Chapter 1)
2.	Tuesday	January 17	9:30-11:30	Overview of Statistical Models (Chap 2-3)
3.	Wednesday	January 18	9:30-11:30	Knowledge, what is it? (Chap 4)
4.	Thursday	January 19	10:45-12:45	Statistical Analysis Frameworks (Chap 5)
5.	Thursday	January 26	10:45-12:45	Managing Data (Chap 8)
6.	Friday	January 27	9:30-11:30	Regression (Chap 9)

Glaser seminar: Jan 30- Feb 3 M-F 2:30-3:30

7.	Monday	January 30	9:30-11:30	Ecological Detective (Chaps 1-2)
8.	Tuesday	January 31	9:30-11:30	Ecological Detective (Chap 3)
9.	Wednesday	February 1	10:30-12:00	Meet with Marc Mangel

Course Philosophy: The premise of this workshop is that ecology students need to learn basic concepts in formal coursework, then transition into self-teaching. Old quantitative methods become passé and new methods come on the scene, so years after graduation you will need to have the tools to keep up; memorizing a handful of methods while you are in school may not serve you well a decade into professional life. I won't teach students how to use the methods listed in this one-credit workshop. Instead, my goal is to raise awareness of the array of methods available and recommend portals into the diverse and changing field of quantitative ecology. I created this workshop several years ago to cover the various topics that I found myself teaching students on an individual basis as they worked on their thesis/dissertation projects.

Grading: Grades will be based on attendance and participation in discussions.

Before class, may be useful to download and install R: http://cran.r-project.org/
We may not use this, however.