

## Bio 301 Homework

**Sally's office hours for this period:** Friday November 15 (1-2PM), Tuesday November 19 (12-1PM), Wednesday November 20 (10-12AM), Wednesday November 27 (1-3PM), Friday November 29 (1-2PM), Wednesday December 4 (1-2PM), **COURSE REVIEW IN BIODIVERSITY 224: Friday Dec 6 (1-3PM).**

**Final Exam:** Monday December 9 8:30-11:30 AM in Woodward 4. Open book, with notes allowed.

**Assignment 11:** Complete PART 1 of FINAL PROJECT: **Email** your preliminary question and either an illustration (e.g., flow diagram) or preliminary set of equations (due Thursday November 21).

*Optional reading: Scan through the parts of Primer 3 that aren't familiar to you.*

**Assignment 12:** Hand in FINAL PROJECT (due Thursday November 28). *Optional reading: Scan through the parts of Primer 3 that aren't familiar to you.*

### **FINAL PROJECT: Construct your own model.**

In this assignment, I want you to use the tools you've learned in class and apply them to a model that you develop. The model can be about any biological phenomenon, as long as you make up the model. Be as creative as you want.

First come up with a question that you think can be addressed with a model and describe this model in words. Next, write down what parameters and variables you think would be necessary in the model. Then write down equations that are consistent with your verbal description of the model.

Get as far as you can in analyzing your model. If you don't have time to finish the analysis (or if your model requires a more complicated analysis), then outline the next steps that you would take in the analysis.

Finally, say whether or not the analysis addresses your original question and whether or not you have gained any insights from the model.

**ALTERNATIVE:** If you are having trouble coming up with a new model, take one of the models that we've analysed in class and change one or more of its underlying assumptions to get a new set of equations. Then analyse these equations. Discuss the differences between the assumptions used and also between the results obtained.

**NOTE:** Keep the amount of time you spend on this assignment to roughly 2-3 times the length of previous assignments. The final report should be about 3-4 pages. (*Mathematica* graphs and appendices can be added on top of this, if desired.)