Project Guidelines
APSC 456/BIOL 356/MATH 356
Spring 2019

The goal of the Random Walks project is to go into more depth on a topic that interests you and that relates to random processes in biological systems. It may be related to undergraduate research you have done, but it does not have to be. It may involve computing/simulating something. Researching a topic and writing a report on the topic is also acceptable, but try to be quantitative about it (e.g., what are the important time scales or length scales? size of fluctuations? can you make order of magnitude estimates of important quantities?).

The Honor Code applies on all aspects of the project. **Proper citation of sources is required.**

You may work individually or in groups of 2-3. Groups will submit a single, combined version of the documents listed below and will give a group presentation.

Project Proposal:

Project topics must be approved. Write 1-2 pages (typed) explaining the project you would like to do, why you want to do it (e.g., why you are interested in the topic or what you hope to learn from it), and some background on your ability to do this project (particularly if you're proposing computer simulations). Include references to important literature you are reading on this topic. Feedback will be given by e-mail. Project proposals are due on Friday, Feb. 22.

Project Status Report:

A project status update, about 2 paragraphs in length (typed), is due in class Monday, Apr. 8. Significant progress on the project is expected by then, and ideally any code writing will have been completed.

Oral Presentation:

Oral presentations will be 10 minutes each and will be given during class. The oral presentation schedule will be determined after we know how many individual versus group projects we have, but it is anticipated that they will start around the beginning of April. Earlier presentations will be works in progress, focusing more on background, while later presentations will be more complete.

Project:

Projects will consist of a written document, due via Blackboard on the last day of class (Friday, Apr. 26). Project write-ups may vary in length depending on topic, but aim for about 5 pages for individuals (double spaced is okay if you don't have figures, but use

single spacing if you do have them), 9 for groups of 2, and 13 for groups of 3. If you write computer code, you should also turn in samples of your code in addition to your write-up. Be sure that this code is clear and readable.

Three types of allowed projects:

- Simulate a biological process and write about the process, your simulation technique, and results
- Detailed study of a paper – rework calculations from paper, possibly redo simulations, explain in detail
- Review of a topic – overview of literature on relevant topic, be thorough

MATH 300:
If you're using this project for MATH 300, you must work individually, not in a group. Also, note that your MATH 300 grade will be based solely on the final written report.