Reading Assignment

Choose a research article that discusses a mathematical or computational model applying differential equations to a biological application. The differential equation model does not necessarily have to include PDEs. Read the article and prepare a 12-minute presentation to give to the class.

This is not a repeat of the essay and it does not have to be as thorough as an honour's thesis. Nonetheless, in the presentation, you should cover the following types of questions:

- What is the biological problem/application?
- How is the model formulated? What are the modelling assumptions?
- What type of model is used (e.g., ordinary, delay, partial, stochastic differential equation)?
- What results are shown? What insight does the study give to the biological application?

These points may be relevant to different degrees, depending on your topic. The idea is to give a comprehensive overview of the article.

The 20 marks will be awarded for (1) presentation style, (2) depth of content, (3) adventurousness in the choice of subject, and (4) participation, which means showing up when other people are presenting. Each of the 4 points above are worth 5 marks.

To ensure no one ends up presenting the same article, please **email your choice** (i.e., a web link OR title of article, author(s), journal), by **Thu 15 Sept (but you can do it sooner)**. If you submit near or on the due date, please have a backup article in mind.

Presentations will be **9-10** minutes long + **3** minutes for questions and transitions. Be ready for presentations to start on **Tue 3 Oct** (**week 9 right after the break)** until everyone gets to present (and then I'll wrap up the remaining days with lectures). I'll have a better idea of how many people are presenting after Assignment 1.

Google or Google Scholar are a good sources by searching for keywords, such as mathematical modelling, cancer/immunology/blood/ecology, etc. Journals that you might come across include

Mathematical Biosciences, Journal of Mathematical Biology, Journal of Theoretical Biology, Bulletin of Mathematical Biology, Proceedings of the Royal Society of London Series B, Proceedings of the National Academy of Sciences.

If your article is not easy to find electronically, please send me a scanned copy. If you avoid articles that are too old, this shouldn't be a problem for you.