M469 References

We will take quite a bit of material from journal articles, and I'll often specify these articles as reading assignments in the homework. Some of the textbooks we'll use as references are listed below.

1. *Mathematical Biology*, 2nd Ed., by J. D. Murray. (1993)

The first edition of this book was published in 1989, quite early as far as texts on mathematical biology go, and it's become something of a foundational reference for the field. Murray's target audience appears to be either graduate students or quite advanced undergraduates, and his development moves at a fast pace. While I've used this book in deciding which topics should be covered in a course on mathematical biology, I haven't adopted much of the exposition. I'll refer to this reference as Murray-I. (There is a 3rd edition, but I don't have a copy.)

2. *Mathematical Biology II: spatial models and biomedical applications*, 3rd Ed., by J. D. Murray. (2003)

This is a second volume to Murray-I (not a new edition, but an additional volume), and is generally too advanced for our purposes, but it's a book you should be aware of.

3. *Introduction to Mathematical Modeling using Discrete Dynamical Systems*, 1st Ed., by F. R. Marotto (2006)

This is a reference on difference equations (also called discrete dynamical systems) aimed at students in their first undergraduate year. It can be excruciatingly slow at times, but at the same time it's very clear. I mainly used this for material on limit cycles.

4. *Mathematical Models in Biology: An Introduction*, by E. S. Allman and J. A. Rhodes. (2004)

This is a text on mathematical biology aimed at students in the life sciences, early in their undergraduate work. The material is presented at a very slow pace, and the exposition can be idiosyncratic at times. I've taken our material on genetic distance and phylogenetic trees from Chapters 4 and 5 of this reference.

5. *Modeling Differential Equations in Biology*, by C. H. Taubes. (2001)

As the title suggests, this is a reference on biological modeling with ordinary and partial differential equations. The author has included a number of research articles, mostly from the magazines *Nature* and *Science*, and these give you a sense of the role differential equations plays in biological research. I've taken a few of our examples from these articles.

6. *Calculus for Biology and Medicine*, 3rd Ed., by C. Neuhauser. (2011)

The first edition of this book was the first good textboook on calculus for students in the life sciences. The author has a number of good applications in this book, and I'll take some examples and homework problems from these.

7. *Mathematical Biology: Lecture Notes for MATH 365*, by J. R. Chasnow. (2009)

This is a book the author has graciously posted on the Internet and allowed free access to. I've taken our discussion of probabilistic population modeling from his first chapter. The URL is

http://www.math.ust.hk/~machas/mathematical-biology.pdf

8. *Biomedical Engineering: Bridging Medicine and Technology*, by W. M. Saltzman. (2009)

This is an introductory text on biomedical engineering aimed at first year undergraduate students. The author discusses the basic science associated with biomedical work and gives some illustrative examples. I'll use this reference for background material on some of our applications.

9. *Biology*, 8th Ed., by N. A. Campbell, J. B. Reece et al. (2008)

This is a standard text for first-year courses in biology, and I'll often use it for background material.