

A mathematical introduction to population dynamics

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Resumo/Abstract:

Much of biology can be viewed as the study of populations. Changes in population sizes and composition result from interactions between individuals of the same species, interactions between individuals of different species, interactions with the environment, disease, food supply, etc. The goals of population dynamics are to use mathematical models to understand, explain, and predict the sizes and compositions of populations over time and space.

Our minicourse will begin with an introduction to modeling the spread of infectious diseases. We will then discuss the most popular population models of single species and then discuss modeling communities consisting of several interacting species.