

Amgen Seminar Series in Chemical Engineering
in
Cherry Auditorium, Kirk Hall, 1 PM

Presents on September 26, 2013

Basic Discrete Models in Populations Dynamics: Single Species Case

By

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We present some basic discrete models in populations dynamics of single species. Starting with the basic Beverton-Holt model that describes the change of single species we discuss its basic properties such as a convergence of all solutions to the equilibrium, oscillation of solutions about the equilibrium solutions, Allee's effect, Jilison's effect, etc. We consider the effect of the constant and periodic immigration and emigration on the global properties of Beverton-Holt model. We also consider the effect of the periodic environment on the global properties of Beverton-Holt model. We consider the Pielou's equation which is a second-order difference equation modeling change of single species and we consider the same variation with periodic environment and immigration and emigration as in Beverton-Holt model.

This series at the University of Rhode Island is made possible through the generosity of Amgen, West Greenwich, R.I.

Refreshments provided by the Joseph Estrin Endowment.