Discrete Mathematics Seminar

Time: Friday, 29 March 2013, 1:00-2:00 PM
Room: 238 Derrick Hall
Title: Math and Biology: An Incomplete Marriage
Speaker: Wesley Chen, Department of Biological Engineering, MIT

Abstract:

Current biology has been revolutionized by becoming an interdisciplinary field encompassing physics, chemistry, computer science, and engineering. Unfortunately, there has not been a push for areas such as mathematical biology that integrates the latest discoveries in graph theory, combinatorics, differential equations, etc. with the frontiers of biology. Even so, biology has increasingly become a quantitative field where math is a fundamental component for producing high quality research. In this talk, I will discuss how biology has been transformed from a purely experimental field to one that is hugely influenced by the predictive power that mathematical modeling achieves. We will also analyze important case studies that range from epidemiology (using zombies as the model) and health (dynamic changes in bodyweight due to exercise and diets) to drug delivery (treatments for HIV).