

综合报告会

Lecture

国家数学与交叉科学中心

Time: 10:30-11:30 am, October 20

Venue: Morningside 110

What is mathematical biology and how useful is it?



Speaker: Prof. Avner Friedman

美国国家科学院院士、美国俄亥俄州立大学教授

Abstract:

I shall define what is meant by “mathematical biology”, and then proceed to illustrate the degree of its usefulness by examples taken from wound healing, reconstructive surgery, tuberculosis as a disease with prognosis which depends on the age of the patient, and viral treatment of glioblastoma. All these examples are modeled by systems of differential equations, and the challenges are: 1) Researching the biological literature in order to set up a mathematical model; 2) Determining the rate parameters; 3) Simulating the model. The final test is to show good fit with experimental results, after which the model can be used to suggest new hypothesis.

Brief CV:

Professor Friedman is a Distinguished University Professor. He received his PH.D. degree in 1956 from the Hebrew University. He served as the Director of the Institute for Mathematics and its Application at the University of Minnesota during 1987 – 1999, the Director of the Minnesota Center for Industrial Mathematics during the year 1994-2001, and the Director for Mathematical Biosciences Institute 2002 - 2008. He serves on numerous editorial boards. He was the Chair of the Board of Mathematical Sciences (1994-1997) and the President of the Society of Industrial and Applied Mathematics (1993-1994). Dr. Friedman has been awarded the Sloan Fellowship (1962-65), the Guggenheim Fellowship (1966-7), the Stampacchia Prize (1982), the National Science Foundation Special Creativity Award (1983-85; 1991-93). He is a Fellow of the National Academy of Arts and Sciences (since 1987) and a member of the National Academy of Sciences (since 1993).