THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學
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INNOVATION AND APPLICATION FOR THE FUTURE

DEPARTMENT OF APPLIED MATHEMATICS
應 用 數 學 系

Academy of Mathematics and Systems Science

AMSS-PolyU Joint Research Institute
Distinguished Lecture

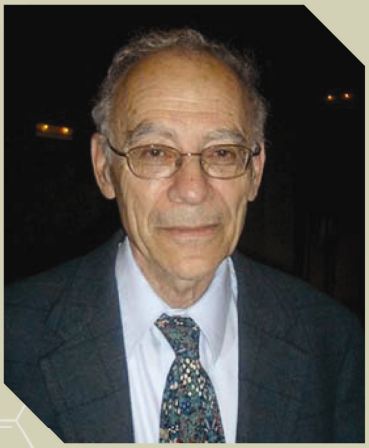
PDE Problems Arising in Mathematical Biology

by

Professor Avner Friedman, School of Mathematics, The Ohio State University

Abstract

Recent years have seen a dramatic increase in mathematical models of biological processes that are described in terms of systems of partial differential equations. In this talk Professor Friedman will give some examples of such models and discuss the mathematical challenges that arise in the analysis of these systems. Examples include cancer models as free boundary problems for systems of elliptic-parabolic-hyperbolic equations; a wound healing process modeled by means of Stokes equation with a free boundary, and a reaction-hyperbolic system which arises in the movement of neurofilaments in axons. Recent results and open questions will be described.



Biography

Avner Friedman is a Distinguished University Professor of The Ohio State University, where he also serves as the Director of the Mathematical and Biosciences Institute. He received his Ph.D. degree in 1956 from the Hebrew University. He was Noyes Professor of Mathematics at Northwestern University (1962-1985), and a Duncan Distinguished Professor of Mathematics at Purdue University (1985-1987).

From 1987-1997, Professor Friedman directed the University's Institute for Mathematics and its Applications (IMA), which is devoted to bridging the gap between mathematical theory and its applications and between academia and industry. From 1994 - 2001, he was the Director of the Minnesota Center for Industrial Mathematics and in 1996 he became a Regents Professor at the University of Minnesota. In 2001, Professor Friedman moved to The Ohio State University where he became the founding Director of the Mathematical Biosciences Institute (MBI), from 2002-2008. Professor Friedman's research interests include partial differential equations, stochastic processes, free boundary problems, control theory, and mathematical biology. He published 22 books and over 440 research papers. 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). Professor Friedman has been awarded the Sloan Fellowship (1962-65), the Guggenheim Fellowship (1966-67), 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).

ALL ARE WELCOME !

Date : 3 December 2012 (Mon)

Time : 3:00pm - 4:00 pm
(Tea reception at 4:15pm)

Venue: M1603, Senate Room, Li Ka Shing Tower, PolyU

For enquiry, please contact Miss Eunice Hung at 3400 3908 or eunice.hung@polyu.edu.hk