Come hear the first of two presentations by an expert on uncertainty in mathematical modeling and inverse problems

This first presentation is for a GENERAL AUDIENCE.

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What Do Mosquitofish, Shrimp and Proliferating CD4+ T-Cells Have in Common?

Abstract: The short answer is uncertainty in dynamics and data measurements. In this talk, which we hope to make accessible and fun for a wide community including undergraduates, graduate students and postdocs (and even some older faculty!) as well as non-mathematicians, we discuss some recent projects involving ideas from probability, statistics and, of course, mathematics. We will focus on recent (2005-2012) joint projects including one with a company, Advanced BioNutrition Corporation (ABN) of Columbia, MD, on development of models for shrimp populations as a scaffold in a rapid vaccine production system and a project with a team of immunologists from Barcelona on tracking cellular division dynamics in proliferating cells. We will explain how some basic questions in the science of these projects have led to longer term basic research questions in modeling and computation of variability and uncertainty in problems for our team members. We hope to do this in a way in which no specific facts from probability, statistics or mathematics are required to understand the presentation (so non-mathematicians are most welcome and are in fact urged to attend!! As one of my colleagues might say “it could be a life-altering experience”!!)

Biographical Sketch: Professor Banks has published over 425 papers in applied mathematics and engineering journals, has graduated 47 Ph.D. students, has directed more than 38 postdocs, has written five books, and edited several others. During the past 30 years, he has received funding from ARO, AFOSR, NIH and NSF and served as a consultant to industrial research groups. He has held visiting, honorary, and adjunct professorships at universities in France, Austria and the United States. He currently serves on the editorial board of numerous journals. He is a Fellow of the IEEE, a Fellow of the Institute of Physics, a Fellow of SIAM and a Fellow of the AAAS. Among numerous honors, he was the recipient of the 1996 IEEE-CSS Control Systems Technology Award, Purdue University Distinguished Alumni Award (1998), and the W.T. and Idalia Reid Prize in Applied Mathematics (2002), multiple Outstanding Research Awards, and multiple Best Paper awards.

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