

FIRST ANNOUNCEMENT

International Conference on Stochastic Processes in Systems Biology, Genetics and Evolution

August 22-25, 2012

Department of Statistics, Rice University, Houston, TX, USA

Conference Information

Systems biology has emerged as an important scientific discipline focused on understanding the functional properties of complex biological systems. Within an individual cell or a larger tissue, normal biological functioning depends on the interaction and signaling between cellular components and/or individual cells. The field of systems biology brings challenges not only in characterizing the essential structure of multi-scale phenomena but also the intrinsically stochastic (random) nature of the biological system. It is difficult to name a specific topic in systems biology in which probabilistic and/or statistical analysis do not play a major role.

Stochastic process models are becoming increasingly important in analyzing the large data-sets being produced by large-scale DNA-sequencing efforts such as the Human Genome Project or the Tumor Genome Atlas Project. The long-standing sub-disciplines of branching processes, population genetics, and phylogenetic analysis continue to undergo a renaissance as these methods can shed light and understanding on the biological data-sets being generated in abundance.

This conference will focus on emerging trends within the field of systems biology with a focus on the statistical methodologies and probability models that are most valued within the field. Special attention will be given to emerging challenges in systems biology, such as exploring the role of cancer stem cells in tumor development and progression, characterizing the systems pathways in inflammation which trigger sepsis, and many others.

The Department of Statistics at Rice University has been a home for biological applications of stochastic processes from its inception in 1987. We welcome you to Houston, Texas to join us as we celebrate the 25th anniversary of our Department.

Scientific Committee: Marek Kimmel (Rice University, USA), Seth Corey (Northwestern University, USA), Miguel Gonzalez (University of Badajoz, Spain), Christine Jacob (INRA, Jouy-en-Josas, France), Peter Jagers (Chalmers University, Sweden), Amaury Lambert (Universite Paris 6, France).

Organizing Committee: Deborah Goldwasser (Rice University, USA), Ines Maria del Puerte (University of Badajoz, Spain), Sriram Iyengar (University of Texas, USA), Oleg Igoshin (Rice University, USA).

Support Applications for support will be directed to various agencies, including the NSF.