Special Issue on Biomathematics

Mathematical modeling in biology describes the key components, processes of living systems, their interactions, and their dynamics through systems of mathematical equations. The derived models are in the form of (coupled or not) ordinary differential (ODE), partial differential (PDE), delay differential (DDE), stochastic differential (SDE) and integro-differential (IDE) equations. Studying and analyzing these resulting equations with mathematical, computational or engineering methods in order to understand the roles and mechanisms of the interactions of different components of the living system and to examine the consequences of these relationships, are a main challenging complex, scientific and technological problem which requires an interaction between biologists and mathematicians.

This exciting interdisciplinary field interests an increasing number of mathematicians and biologists in the world as well as physical chemists and engineers, which are motivated by the combination of fundamental approach with practical applications of current interest in the broad fields of mathematical biology (which spans all areas of the life sciences, from molecular biochemistry to ecosystems) and dynamics of the underlying physical and chemical processes. It also has a key role to contribute to the predictive mathematical modeling to make predictions about how systems will respond to enforced disturbances (e.g., unmeasured noises and fluctuations) or modifications in one component or mechanism, and to increase the reliability of model predictions about the performance of these complex systems.

This special issue aims to foster state-of-the-art research and promote the recent developments of mathematical models, mathematical analysis, computational methods, and efficient optimization techniques in biomathematical sciences. We cordially invite researchers to submit original unpublished research as well as review articles in the above mentioned areas. Potential topics include, but are not limited to:

- Mathematical Modeling and Mathematical Analysis
- Numerical Analysis and Simulations
- Optimization Techniques and Computational Methods
- Dynamical Systems (deterministic and stochastic processes)
- Mathematical Biophysics
- Chaos Systems
- Optimal and Robust Control Problems
- Inverse Problems
- Perturbation Problems
- Algebraic Biology
- Game Theory
- Network Optimization
- Biomedical Image Processing, Visualization and Image Reconstruction Algorithms
- Automata Theory
- Ecology and Evolutionary Biology

- Population Biology
- Complex Systems Biology
- Genomics
- Modeling Cell
- Molecular Set Theory
- Physiological Systems
- Bioinformatics for Diseases
- Biomedical Sciences
- Biofluid Dynamics
- Biofilm Dynamics

Authors should read over the journal's **Authors' Guidelines** carefully before submission. Prospective authors should submit an electronic copy of their complete manuscript through the journal **Paper Submission System**.

According to the following timetable:

Manuscript Due	August 8th, 2013
Publication Date	October 2013

Please kindly notice that the "**Special Issue**'' under your manuscript title is supposed to be specified and the research field "**Special Issue — Biomathematics**" should be chosen during your submission.

Special Issue Editor

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