2013
7th International Conference on Systems Biology (ISB)

Huangshan, China, August 23–25, 2013

Edited by

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ABOUT ISB 2013

THEME AND SCOPE

The 7th International Conference on Systems Biology (ISB 2013), organized by Chinese Academy of Sciences and Hunan University will be held in Huangshan, China, August 23–25, 2013. The conference is sponsored by National Natural Science Foundation of China (NSFC), Academy of Mathematics and Systems Sciences of CAS (AMSS), Shanghai Institutes for Biological Sciences of CAS (SIBS), Hunan University, Computational Systems Biology Society of ORSC, Systems Biology Technical Committee of IEEE SMC Society, and IET.

Systems Biology and Bioinformatics have become intensive research topics in the recent past decade and attracted great many leading scientists working in Biology, Physics, Mathematics and Computer Science. Optimization, Statistics, and many other mathematical methods have been widely used in the field. Following the successful ISB conferences series from 2007, the purpose of ISB 2013 is to extend the international forum for scientists, researchers, educators, and practitioners to exchange ideas and approaches, to present research findings and state-of-the-art solutions in this interdisciplinary field, including mathematical methods and its applications in biosciences and researches on various aspects of Systems Biology, such as integration of genome-wide microarray, proteomic, and metabolomic data, inference and comparison of biological networks, and model testing through design of experiments.

The purpose of ISB 2013 is to provide an international forum for scientists, researchers to exchange ideas and approaches, including theoretical methodology development and its applications in biosciences and researches on various aspects of Computational Systems Biology. Themes of the ISB 2013 will be interdisciplinary by its nature and focus on bridging opportunities between mathematical methods and Systems Biology studies. We are particularly interested in submissions that report on theoretical, experimental and applied research motivated by systems biology problems. Typical, but not exclusive, topics of interest are:

- Gene Regulatory Networks
- Protein Interaction Networks
- Metabolic Networks
- Signaling Networks
- Comparative Genomics
- Functional Genomics
- Metagenomics
- Genome-Wide Association Study
- Promoter Analysis and Discovery
- Biomarker Identification and Drug Discovery
- Evolution and Phylogenetics
- Non-coding RNAs
- Proteomics
- Protein Structures and Functions
- Microbial Community Analysis
- Qualitative Analysis of Biological Systems
- Quantitative Models of Cellular and Multi-Cellular Systems
- Designing and Modeling Synthetic Biological Systems
- Nonlinear Dynamics and Analysis of Biological Systems
- Designing Synthetic Biological Circuits
- High Performance Computing for Biological Data Analysis
- Data Mining and Machine Learning for Biological Data
- Information Theory and Statistical Analysis
- Systems Biology of Cancer and Metastasis
- Brain Systems Biology
- Systems Neuro-Informatics
- Systems Biology of Development

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PROCEEDING PAPERS AND CONTRIBUTING AUTHORS

Twenty-five papers selected for special issues of journals and twenty-nine full papers in this volume cover wide range of computational systems biology. Authors of these papers come from China mainland, Hong Kong, Taiwan, Australia, Japan, Korea, Malaysia, Germany, Egypt, United Kingdom, United States. Many active researchers in various areas contributed their overview and introduction in their fields besides specific deep research achievements.