

2014

8th International Conference on Systems Biology (ISB)

Qingdao, China, August 24–27, 2014

Edited by
Luonan Chen
Xiang-Sun Zhang
Ling-Yun Wu
Yong Wang



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2014 8th International Conference on Systems Biology (ISB)

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IEEE Catalog Number CFP14ISB-ART

ISBN 978-1-4799-7294-4

ISSN 2325-0712

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Curran Associates, Inc.

57 Morehouse Lane

Red Hook, NY 12571 USA

+1 845 758 0400

+1 845 758 2633 (FAX)

Email: curran@proceedings.com

ABOUT ISB 2014

THEME AND SCOPE

The 8th International Conference on Systems Biology (ISB 2014), organized by Chinese Academy of Sciences and Qingdao University was co-held with and the 4th Translational Bioinformatics Conference (TBC 2014), in Qingdao, China, October 24–27, 2014. 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), Qingdao Institute of Bioenergy and Bioprocess Technology of CAS (QIBEBT), Qingdao University, Computational Systems Biology Society of ORSC, Functional Genome Informatics and Systems Biology Society of CSCB, Systems Biology Technical Committee of IEEE SMC Society, Korean Society for Bioinformatics and Systems Biology (KSBSB), The Korean Society of Medical Informatics (KOSMI), Korean Genome Organization (KOGO).

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/TBC 2014 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/TBC 2014 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 and Translational Bioinformatics. Themes of the ISB/TBC 2014 will be interdisciplinary by its nature and focus on bridging opportunities between mathematical methods and Systems Biology/Translational Bioinformatics studies. We are particularly interested in submissions that report on theoretical, experimental and applied research motivated by systems biology and translational bioinformatics 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
- Next Generation Sequencing for Personal Genomics, Cancer Genomics and Metagenomics
- Rare and common variants of human genome
- Epigenomics, non-coding RNAs, and DNA methylation analyses

- Genome-Phenome-Envirome Network Analysis
- Microarray analysis and functional genomics for disease
- Biomarkers, Drug Discovery and Pharmacogenomics
- Biomedical Text/Data Mining and Visualization
- Network Biology/Medicine and Pathway/Regulation Analysis
- Biomedical Intelligence, Clinical Informatics, and Health Record
- Semantic Biology/Medicine and Biomedical Ontologies

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PROCEEDING PAPERS AND CONTRIBUTING AUTHORS

Forty-three papers selected for special issues of journals and forty full papers in this volume cover wide range of computational systems biology. Authors of these papers come from China mainland, Hong Kong, Taiwan, Australia, Canada, Czech, Germany, Greece, Italy, Japan, Korea, Netherlands, Pakistan, Thailand, United Kingdom, and United States. Many active researchers in various areas contributed their overview and introduction in their fields besides specific deep research achievements.