

Technical Program

Day 1: Sunday, 22 November 2015

At School of Information Technology, KMUTT main campus

- Room:** The training room 1/5, 1st floor
- 13:00 - 14:00 CSBio 2015 registration
- 14:00 - 17:00 *Pre-workshop (Workshop I):*
Next-generation Sequencing Data Analysis
Weerayuth Kittichotirat and Teeraphan Laomettachit,
King Mongkut's University of Technology Thonburi, Thailand
- 14:00 - 15:00 Lecture
- 15:00 - 15:30 Coffee break*
- 15:30 - 17:00 Hands on

Day 2: Monday, 23 November 2015
At Chatrium Hotel Riverside, Bangkok

- Room:** Ballroom, 4th floor
- 08.00 - 09:00 Registration
- 09:00 - 09:15 Opening of the 4 collocated conferences
(IAIT, INCEB, IES, CSBIO)
- 09:15 - 10:00 *Keynote Talk 1:*
Big Education in the Era of Big Data
Irwin King, The Chinese University of Hong Kong, Hong Kong
- 10:00 - 10:30 *Coffee break*
- Chairpersons:** *Saowalak Kalapanulak and Chiraphan Khannapho
(KMUTT, Thailand)*
- 10:30 - 11:15 *Keynote Talk 2:*
Genome Bioinformatics' Current Success, Challenges, and Opportunities in the Era of Low-cost Sequencing
Steve G. Rozen, Duke-NUS Graduate Medical School, Singapore
- 11:15 - 12:00 *Keynote Talk 3:*
Big Data Analytics in Metagenomics: A Reconstruction Pipeline for Viral Quasispecies Spectra Generated by Next-Generation Sequencing
Saman K. Halgamuge, University of Melbourne, Australia
- 12:00 - 13:00 *Lunch break*

Session I: Sequence, Structure, Parallel Computing and Algorithm

- Room:** Ravipa I and II, 4th floor
- Chairpersons:** *Saowalak Kalapanulak and Chiraphan Khannapho*

(KMUTT, Thailand)

- 13.00 - 13.30 *Plenary Talk 1:*
Complex Population Substructure and Genome Wide Association Studies
Sissades Tongsimma, BIOTEC, Thailand
- Chairperson:** *Sissades Tongsimma*
(BIOTEC, Thailand)
- 13.30 - 13.45 *OP-01: evoSNPI: A Pipeline for the Evolutionary Analysis of the Origin of Single Nucleotide Polymorphisms and the Change of Protein Interactions*
Minah Cho, Konkuk University, Korea
- 13.45 - 14.00 *OP-02: In silico Screening of Zinc (II) Enzyme Inhibitors by SVM*
Tadasuke Ito, Tokyo University of Science, Japan
- 14.00 - 14.15 *OP-03: An $O(n^3)$ Algorithm for Sorting Signed Genomes by Reversals, Transpositions, Transreversals and Block-interchanges*
Shuzhi Yu, National University of Singapore, Singapore
- Chairperson:** *Hon Wai Leong*
(National University of Singapore, Singapore)
- 14.15 - 14:30 *OP-04: Algae Image Classification using Parallel Random-forest*
Pramote Chumnanpuen, Kasetsart University, Thailand
- 14:30 - 14:45 *OP-05: Automated Discovery of Compounds Related to the Plant Immunity Activation by a Logic-based Machine Learning*
Atsushi Matsumoto, Tokyo University of Science, Japan
- 14:45 - 15:00 *OP-06: GI-SVM: A Sensitive Method for Predicting Genomic Islands based on Unannotated Sequence of a Single Genome*
Bingxin Lu, National University of Singapore, Singapore
- 15.00 - 15.30 *Coffee break*

Session II: Functions, Interactions and Biological Network

Room: Ravipa I and II, 4th floor
Chairpersons: Saowalak Kalapanulak and Chiraphan Khannapho
(KMUTT, Thailand)

15:30 - 16:00 *Plenary Talk 2:*
**RNA-seq Methods for Studying the Transcriptome: Case Study
of *Plasmodium Malaria* Parasites**
*Philip Shaw, National Center for Genetic Engineering and
Biotechnology (BIOTEC), Thailand*

Chairperson: *Pramote Chumnanpuen
(Kasetsart University, Thailand)*

16:00 - 16:15 *OP-07: Comparative Genome Analysis of Cordyceps Militaris and
Related Entomopathogenic Fungi*
Chayapat Wizaza, Kasetsart University, Thailand

16:15 - 16:30 *OP-08: Computer Tools for Gene Expression Data Processing and
Correlation Analysis*
Vladimir N. Babenko, Institute of Cytology and Genetics, Russia

Chairperson: *Wanwipa Vongsangnak
(Kasetsart University, Thailand)*

16:30 - 16:45 *OP-09: Genome-based Pathway Reconstruction of Carbon
Fixation Pathway in *Arthrospira* sp.*
*Amornpan Klunchui, King Mongkut's University of Technology
Thonburi, Thailand*

16:45 - 17:00 *OP-10: Using Gap Fillers and Enzyme Function Predictors for
Enhancing Reconstructed Metabolic Networks*
Nam-Ninh Nguyen, National University of Singapore, Singapore

Chairperson: *Steve G. Rozen
(Duke-NUS Graduate Medical School, Singapore)*

- 17:00 - 17:15 *OP-11: Homologous Protein Interaction Network and Functional Analysis of Salicylic Acid Biosynthesis Pathway*
Pitak Sootanan, Burapa University, Thailand
- 17:15 - 17:30 *OP-12: Analysis of Chromosome 20 - A Study*
Kristiina Ausmees, Upsala University, Sweden

Day 3: Tuesday, 24 November 2015
At Chatrium Hotel Riverside Bangkok

Room: Ballroom, 4th Floor

07:00 - 08:30 Poster mounting

Chairpersons: *Saowalak Kalapanulak and Chiraphan Khannapho
(KMUTT, Thailand)*

08:45 - 09:30 *Keynote Talk 4:*
Third Generation Sequencing for Rapid Bio-surveillance
David W. Ussery, Oak Ridge National Laboratory, USA

09:30 - 10:00 *Coffee break*

Session III: Omics and Systems biology

Room: Ballroom, 4th floor

Chairpersons: *Saowalak Kalapanulak and Chiraphan Khannapho
(KMUTT, Thailand)*

10:00 - 10:30 *Plenary Talk 3:*
Microbiome Systems Biology
Gianni Panagiotou, The University of Hong Kong, Hong Kong

Chairperson: *Gianni Panagiotou
(The University of Hong Kong, Hong Kong)*

10:30 - 10:45 *OP-13: Analysis of Reporter Metabolites for the
Compartmentalized Genome-scale Metabolic Model of
Arabidopsis Leaves*
*Somkid Bumee, King Mongkut's University of Technology
Thonburi, Thailand*

- 10.45 - 11.00 *OP-14: Gene Expression Analysis in Brain Areas of Laboratory Rats with Aggressive Behavior by RNA-seq Data*
Anatoly O. Bragin, Institute of Cytology and Genetics, Russia
- 11.00 - 11.15 *OP-15: Homology Modeling and Molecular Dynamics Simulation of 3-Methylcrotonyl-CoA Carboxylase in *Aspergillus oryzae**
Nachon Raethong, Kasetsart University, Thailand
- 11:15 - 12:00 **Poster sessions**
- 12.00 - 13.00 *Lunch break*

Session IV: Medical Data Diagnosis, Classification and Simulation

Room: Ballroom, 4th floor

Chairpersons: *Saowalak Kalapanulak and Chiraphan Khannapho*
(KMUTT, Thailand)

13.00 - 13.30 *Plenary Talk 4:*
Precision Medicine: The Future of Healthcare
Prapat Suriyaphol, Mahidol University, Thailand

Chairperson: *Prapat Suriyaphol*
(Mahidol University, Thailand)

13.30 - 13.45 *OP-16: Pathway-based Probabilistic Modelling for Personalised Drug Activity in Cancer*
Naruemon Pratanwanich, University of Cambridge, UK

13.45 - 14.00 *OP-17: Peptidomic and Bioinformatic Identification of Anti-Breast Cancer Peptides from *Achatina Fulica* Mucus*
Teerasak E-Kobon, Kasetsart University, Thailand

Chairperson: *Treenut Saithong*
(KMUTT, Thailand)

- 14.00 - 14.15 *OP-18: Comparative Analysis between Prostate Cancer Inhibitors Abiraterone and TOK-001 Binding with Cytochrome P450 17A1 through Molecular Dynamics Simulation*
Fei Xiao, Soochow University, China
- 14.15 - 14.30 *OP-19: A Hybrid Model of Cell Cycle in Mammals*
Jonathan Behaegel, University of Nice-Sophia Antipolis, France
- 14:30 - 14:45 *OP-20: Modeling and Simulation of Multicell Systems in Microfluidic Channels*
Ivan Cimrak, University of Zilina, Slovakia
- 14:45 - 15.15 *Coffee break*
- Chairperson:** *Weerayuth Kittichotirat*
(KMUTT, Thailand)
- 15.15 - 17.00 *Workshop II:*
Algorithms for Detecting Protein Complexes from Whole-Genome PPI Networks and Applications
Hon Wai Leong, National University of Singapore, Singapore
- 18:30 The dinner banquet at Ballroom, 4th floor