

iCeMS Symposium on Theoretical and Computational Biology

Friday, March 1st 2013

Venue: Institute for Integrated Cell-Material Sciences, Kyoto University
Main Bldg., 2nd Floor Seminar Hall

10:00 - 10:15 Opening Remarks and Overview of iCeMS Research

Susumu Kitagawa (Director of iCeMS, Kyoto University)

Cell-Material Science and Mesoscopic Science

Chairperson: Akihiro Kusumi (iCeMS, Kyoto University)

10:15 - 10:55 **Masaki Sasai** (Nagoya University)

Structure of free energy landscapes of protein folding and function

Chairperson: Takuya Yamamoto (CiRA & iCeMS, Kyoto University)

10:55 - 11:35 **Chikara Furusawa** (RIKEN QBiC)

Oscillatory protein expression dynamics generates robust and irreversible differentiation dynamics of stem cells

11:35 - 11:45 Short break

Chairperson: John Heuser (iCeMS, Kyoto University)

11:45 - 12:00 **Kaoru Sugimura** (iCeMS, Kyoto University)

Global Force Balance Promotes Ordering in Hexagonal Cell Packing

12:00 - 12:15 **Ziya Kalay** (iCeMS, Kyoto University)

On the Stochastic Nature of Chemical Reactions in Inhomogeneous and Small Biological Systems

12:15 - 13:20 Lunch break (*lunch boxes served for speakers and chairpersons*)

Chairperson: Kaoru Sugimura (iCeMS, Kyoto University)
13:20 - 14:00 **Tetsuya J Kobayashi** (The University of Tokyo)
Information-theoretical Approach for Biological Sensing Phenomena

14:00 - 14:40 **Kazuhiro Aoki** (Kyoto University)
Cell density-modulated ERK pulse frequency determines cell proliferation

14:40 - 15:00 Coffee break

Chairperson: Shigeyoshi Sakaki (Fukui Institute, Kyoto University)
15:00 - 15:40 **Yuji Sugita** (RIKEN QBiC & ASI)
How macromolecular crowding affects protein stability and dynamics?

15:40 - 16:20 **Shoji Takada** (Kyoto University)
Multiscale molecular simulations for biomolecular systems

16:20 - 16:40 Coffee break

Chairperson: Peter M. Carlton (iCeMS, Kyoto University)
16:40 - 17:20 **Timothy J Stasevich** (Osaka University)
Towards a quantitative understanding of transcription regulation in vivo

17:20 - 18:00 **Miki Ebisuya** (Kyoto University)
Reconstitution of genetic circuits that generate multicellular patterns

18:00 - 18:05 Closing Remarks
Ziya Kalay (iCeMS, Kyoto University)

18:05 - Banquet venue: iCeMS Main Bldg., 2nd Fl. Lounge