

Program

Tuesday, March 1 (Day 1)

9:30-9:35 JST | 8:30-8:35 CST, China | 0:30-0:35 GMT | 1:30-1:35 CET |
16:30-16:35 (Feb 28) PST | 18:30-18:35 (Feb 28) CST, US | 19:30-19:35 (Feb 28) EST

Opening Remarks

Eisuke Nishida (RIKEN BDR Director)

9:35-10:35 JST | 8:35-9:35 CST, China | 0:35-1:35 GMT | 1:35-2:35 CET |
16:35-17:35 (Feb 28) PST | 18:35-19:35 (Feb 28) CST, US | 19:35-20:35 (Feb 28) EST

Session 1: Intracellular Organization I

Chair: Tatsuo Shibata (RIKEN BDR, Japan)

S1-1 Organelle degradation by autophagy-dependent and independent pathways

Noboru Mizushima (The University of Tokyo, Japan)

S1-2 Self-organized Formation of Golgi Apparatus

Masashi Tachikawa (Kyoto University, Japan)

10:35-11:00 JST | 9:35-10:00 CST, China | 1:35-2:00 GMT | 2:35-3:00 CET |
17:35-18:00 (Feb 28) PST | 19:35-20:00 (Feb 28) CST, US | 20:35-21:00 (Feb 28) EST

Break

11:00-12:20 JST | 10:00-11:20 CST, China | 2:00-3:20 GMT | 3:00-4:20 CET |
18:00-19:20 (Feb 28) PST | 20:00-21:20 (Feb 28) CST, US | 21:00-22:20 (Feb 28) EST

Chair: Masashi Tachikawa (Kyoto University, Japan)

S1-3 Opportunities and Challenges in Understanding Cortical Pattern Formation

Min Wu (Yale School of Medicine, USA)

S1-4 Emergence of cell chirality from the spatial organization of actin and myosin cytoskeleton

Tatsuo Shibata (RIKEN Center for Biosystems Dynamics Research, Japan)

S1-5* Enzymatic activity on chromatin organization

Rakesh Das (Mechanobiology Institute, National University of Singapore, Singapore)

12:20-14:30 JST | 11:20-13:30 CST, China | 3:20-5:30 GMT | 4:20-6:30 CET |
19:20-21:30 (Feb 28) PST | 21:20-23:30 (Feb 28) CST, US | 22:20 (Feb 28)–0:30 EST

Lunch / Break

Program

14:30-16:00 JST | 13:30-15:00 CST, China | 5:30-7:00 GMT | 6:30-8:00 CET |
21:30-23:00 (Feb 28) PST | 23:30 (Feb 28)-1:00 CST, US | 0:30-2:00 EST

Session 2: The Origin of Life

Chair: Kam Zhang (RIKEN BDR, Japan)

S2-1 Carbon based thermodynamics at the origin of metabolism

William F. Martin (University of Düsseldorf, Germany)

S2-2 High-throughput analysis of ribozyme sequence-activity relationship

Yohei Yokobayashi (Okinawa Institute of Science and Technology Graduate School, Japan)

S2-3 Reconstruction of Evolutionary Pathway from Simple Peptides to RNA Polymerase

Shunsuke Tagami (RIKEN Center for Biosystems Dynamics Research, Japan)

16:00-16:20 JST | 15:00-15:20 CST, China | 7:00-7:20 GMT | 8:00-8:20 CET |
23:00-23:20 (Feb 28) PST | 1:00-1:20 CST, US | 2:00-2:20 EST

Break

16:20-17:40 JST | 15:20-16:40 CST, China | 7:20-8:40 GMT | 8:20-9:40 CET |
23:20 (Feb 28) -0:40 PST | 1:20-2:40 CST, US | 2:20-3:40 EST

Chair: Shunsuke Tagami (RIKEN BDR, Japan)

S2-4* Laboratory evolution of a virus-like nucleocapsid from a bacterial enzyme

Naohiro Terasaka (The University of Tokyo, Japan)

S2-5 Evolution and design of proteins from subdomain-sized fragments

Birte Höcker (University of Bayreuth, Germany)

S2-6 Modern versus early amino acids support distinct protein structural profiles

Klara Hlouchova (Charles University, Czech Republic)

17:40-17:45 JST | 16:40-16:45 CST, China | 8:40-8:45 GMT | 9:40-9:45 CET |
0:40-0:45 PST | 2:40-2:45 CST, US | 3:40-3:45 EST

Short Break

17:45-18:15 JST | 16:45-17:15 CST, China | 8:45-9:15 GMT | 9:45-10:15 CET |
0:45-1:15 PST | 2:45-3:15 CST, US | 3:45-4:15 EST

Session 3: Intracellular Organization II

Chair: Tatsuo Shibata (RIKEN BDR, Japan)

S3-1 Biomolecular condensates and their implications for recognition of DNA sequence

Tony Hyman (Max Planck Institute of Molecular Cell Biology, Germany)

*Selected Talk

Program

Wednesday, March 2 (Day 2)

9:30-10:20 JST | 8:30-9:20 CST, China | 0:30-1:20 GMT | 1:30-2:20 CET |
16:30-17:20 (Mar 1) PST | 18:30-19:20 (Mar 1) CST, US | 19:30-20:20 (Mar 1) EST

Session 4: Multicellular Systems I

Chair: Shuichi Onami (RIKEN BDR, Japan)

S4-1 Geometry and Genetics

Eric D. Siggia (Rockefeller University USA)

S4-2* Long-range force propagation emerges from interfacial dissipation in tissues

Yuting Lou (Mechanobiology Institute, National University of Singapore)

10:20-10:40 JST | 9:20-9:40 CST, China | 1:20-1:40 GMT | 2:20-2:40 CET |
17:20-17:40 (Mar 1) PST | 19:20-19:40 (Mar 1) CST, US | 20:20-20:40 (Mar 1) EST

Break

10:40-11:40 JST | 9:40-10:40 CST, China | 1:40-2:40 GMT | 2:40-3:40 CET |
17:40-18:40 (Mar 1) PST | 19:40-20:40 (Mar 1) CST, US | 20:40-21:40 (Mar 1) EST

Chair: Minoru Takasato (RIKEN BDR, Japan)

S4-3 Data-driven modeling of animal embryogenesis

Shuichi Onami (RIKEN Center for Biosystems Dynamics Research, Japan)

S4-4 Neural Development in Stem Cell Culture

Mototsugu Eiraku (Frontier Life and Medical Sciences, Kyoto University, Japan)

11:40-12:30 JST | 10:40-11:30 CST, China | 2:40-3:30 GMT | 3:40-4:30 CET |
18:40-19:30 (Mar 1) PST | 20:40-21:30 (Mar 1) CST, US | 21:40-22:30 (Mar 1) EST

Lunch/Break

12:30-14:30 JST | 11:30-13:30 CST, China | 3:30-5:30 GMT | 4:30-6:30 CET |
19:30-21:30 (Mar 1) PST | 21:30-23:30 (Mar 1) CST, US | 22:30 (Mar 1)-0:30 EST

Poster Session 1

First 45 minutes: Presenters of odd-numbered posters
Second 45 minutes: Presenters of even-numbered posters
Last 30 minutes: Free discussion

*Selected Talk

Program

14:30-15:50 JST | 13:30-14:50 CST, China | 5:30-6:50 GMT | 6:30-7:50 CET |
21:30-22:50 (Mar 1) PST | 23:30 (Mar 1)-0:50 CST, US | 0:30-1:50 EST

Session 5: Adaptation and Evolution

Chair: Shigehiro Kuraku (RIKEN BDR, Japan)

S5-1 Toward prediction and control of microbial evolution: Analysis of phenotypic constraints in laboratory evolution

Chikara Furusawa (RIKEN Center for Biosystems Dynamics Research, Japan)

S5-2* Punctuated transitions in the emergence of biochemistry from geochemistry

Liam M. Longo (Earth Life Science Institute, Tokyo Institute of Technology, Japan)

S5-3 Exploiting epistasis to curb the evolution of antibiotic resistance

Tobias Bollenbach (University of Cologne, Germany)

15:50-16:10 JST | 14:50-15:10 CST, China | 6:50-7:10 GMT | 7:50-8:10 CET |
22:50-23:10 (Mar 1) PST | 0:50-1:10 CST, US | 1:50-2:10 EST

Break

16:10-17:00 JST | 15:10-16:00 CST, China | 7:10-8:00 GMT | 8:10-9:00 CET |
23:10 (Mar 1)-0:00 PST | 1:10-2:00 CST, US | 2:10-3:00 EST

Chair: Chikara Furusawa (RIKEN BDR, Japan)

S5-4 Win-win mutations can rapidly evolve to promote cooperation

Wenyng Shou (University College London, UK)

S5-5* The geometry of phenotypic spaces: the emergence of coherent structures in the behavior and development of the roundworm *C. elegans*

David J. Jordan (The Gurdon Institute, University of Cambridge, UK)

17:00-17:05 JST | 16:00-16:05 CST, China | 8:00-8:05 GMT | 9:00-9:05 CET |
0:00-0:05 PST | 2:00-2:05 CST, US | 3:00-3:05 EST

Short Break

17:05-17:35 JST | 16:05-16:35 CST, China | 8:05-8:35 GMT | 9:05-9:35 CET |
0:05-0:35 PST | 2:05-2:35 CST, US | 3:05-3:35 EST

Session 6: Multicellular Systems II

Chair: Shuichi Onami (RIKEN BDR, Japan)

S6-1 Single-cell ribosome profiling

Alexander van Oudenaarden (Hubrecht Institute, The Netherlands)

Program

Thursday, March 3 (Day 3)

9:30-10:30 JST | 8:30-9:30 CST, China | 0:30-1:30 GMT | 1:30-2:30 CET |
16:30-17:30 (Mar 2) PST | 18:30-19:30 (Mar 2) CST, US | 19:30-20:30 (Mar 2) EST

Session 7: AI, Computing and Robotics I

Chair: Koichi Takahashi (RIKEN BDR, Japan)

S7-1 Simultaneous cross-evaluation of heterogeneous E. coli datasets via mechanistic simulation

Markus Covert (Stanford University, USA)

S7-2 A Brain-inspired Model for Spatial-temporal Pattern Recognition

Si Wu (Peking University, China)

10:30-10:50 JST | 9:30-9:50 CST, China | 1:30-1:50 GMT | 2:30-2:50 CET |
17:30-17:50 (Mar 2) PST | 19:30-19:50 (Mar 2) CST, US | 20:30-20:50 (Mar 2) EST

Break

10:50-11:40 JST | 9:50-10:40 CST, China | 1:50-2:40 GMT | 2:50-3:40 CET |
17:50-18:40 (Mar 2) PST | 19:50-20:40 (Mar 2) CST, US | 20:50-21:40 (Mar 2) EST

Chair: Koichi Takahashi (RIKEN BDR, Japan)

S7-3* Whole-cell modeling of a bacterial cell from its genomic sequence

Kazunari Kaizu (RIKEN Center for Biosystems Dynamics Research, Japan)

S7-4 Retinal Organoid Transplantation and humanoid robot

Masayo Takahashi (Vision Care Inc. & Kobe Eye Center Hospital, Japan)

11:40-12:30 JST | 10:40-11:30 CST, China | 2:40-3:30 GMT | 3:40-4:30 CET |
18:40-19:30 (Mar 2) PST | 20:40-21:30 (Mar 2) CST, US | 21:40-22:30 (Mar 2) EST

Lunch/Break

12:30-14:30 JST | 11:30-13:30 CST, China | 3:30-5:30 GMT | 4:30-6:30 CET |
19:30-21:30 (Mar 2) PST | 21:30-23:30 (Mar 2) CST, US | 22:30 (Mar 2)-0:30 EST

Poster Session 2

First 45 minutes: Presenters of posters with category "A"
Second 45 minutes: Presenters of posters with category "B"
Last 30 minutes: Free discussion

*Selected Talk

Program

14:30-15:50 JST | 13:30-14:50 CST, China | 5:30-6:50 GMT | 6:30-7:50 CET |
21:30-22:50 (Mar 2) PST | 23:30 (Mar 2)-0:50 CST, US | 0:30-1:50 EST

Session 8: Brain Functions and Consciousness

Chair: Anna Wang Roe (Zhejiang University, China)

S8-1 The self-in-the-world map emerged in the primate brain as bases of civilized *Homo sapiens*

Atsushi Iriki (RIKEN Center for Biosystems Dynamics Research, Japan)

S8-2 Towards a Conscious Machine

Ryota Kanai (Araya, Inc., Tokyo, Japan)

S8-3* Dynamical Neural Computation in Predictive Sensorimotor Control

Yun Chen (Center for Excellence in Brain Science and Intelligent Technology, Institute of Neuroscience, Chinese Academy of Sciences, China)

15:50-16:10 JST | 14:50-15:10 CST, China | 6:50-7:10 GMT | 7:50-8:10 CET |
22:50-23:10 (Mar 2) PST | 0:50-1:10 CST, US | 1:50-2:10 EST

Break

16:10-17:40 JST | 15:10-16:40 CST, China | 7:10-8:40 GMT | 8:10-9:40 CET |
23:10 (Mar 2)-0:40 PST | 1:10-2:40 CST, US | 2:10-3:40 EST

Chair: Atsushi Iriki (RIKEN BDR, Japan)

S8-4 Contributions of visceral signals to brain dynamics and consciousness

Catherine Tallon-Baudry (Ecole Normale Supérieure, France)

S8-5 An information decomposition approach to high order brain functions

Fernando E. Rosas (Imperial College London, UK)

S8-6 Basis Elements of Intelligent Primate Systems

Anna Wang Roe (Zhejiang University, China)

17:40-17:45 JST | 16:40-16:45 CST, China | 8:40-8:45 GMT | 9:40-9:45 CET |
0:40-0:45 PST | 2:40-2:45 CST, US | 3:40-3:45 EST

Short Break

Program

17:45-18:15 JST | 16:45-17:15 CST, China | 8:45-9:15 GMT | 9:45-10:15 CET |
0:45-1:15 PST | 2:45-3:15 CST, US | 3:45-4:15 EST

Session 6: Multicellular Systems II

Chair: Koichi Takahashi (RIKEN BDR, Japan)

S9-1 Automating Science using Robot Scientists

Ross King (University of Cambridge, UK and Chalmers Institute of Technology,
Sweden)

18:15-18:25 JST | 17:15-17:25 CST, China | 9:15-9:25 GMT | 10:15-10:25 CET |
1:15-1:25 PST | 3:15-3:25 CST, US | 4:15-4:25 EST

Closing Remarks

Anna Wang Roe (Zhejiang University, China)