Monday, March 25 (Day 1)

9:00-9:50  Registration

9:50-10:00  Welcoming Address by Eisuke Nishida

**Session 1: Making Embryoids and Organoids**
Chair: Minoru Takasato

10:00-10:30  **S1-1**
**Single cell analysis of early human embryos and pluripotent cells**  
Fredrik Lanner (Karolinska Institutet, Sweden)

10:30-11:00  **S1-2**
**Blastoids: blastocyst-like structures generated solely from stem cells implant in utero**  
Nicolas Rivron (MERLN Institute and Hubrecht Institute, The Netherlands)

11:00-11:20  *Coffee Break*

11:20-11:50  **S1-3**
**Synthetic human embryo-like structures: A new paradigm for human embryology**  
Jianping Fu (University of Michigan, Ann Arbor, USA)

11:50-12:10  **S1-4**
**Induced 2C expression and implantation-competent blastocyst-like cysts from primed pluripotent stem cells**  
Cody Kime (RIKEN Center for Biosystems Dynamics Research, Japan)

12:10-13:10  *Lunch*

13:10-13:40  **S1-5**
**Recreating a lower urinary tract from human pluripotent stem cells**  
Minoru Takasato (RIKEN Center for Biosystems Dynamics Research, Japan)

13:40-14:10  **S1-6**
**Pancreas organoids to decipher organ development**  
Anne Grapin-Botton (DanStem, University of Copenhagen, Denmark)

*Selected talks*
Program

14:10-15:40 **Poster Session 1**
- 14:10-14:55 Presenters of Odd numbered posters
- 14:55-15:40 Presenters of Even numbered posters

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**Session 2: From Natural to Artificial Cells**
Chair: Shunsuke Tagami

15:40-16:10 **S2-1**
*Defining the last 25% of life using a minimal bacterial cell*
Yo Suzuki (J. Craig Venter Institute, USA)

16:10-16:40 **S2-2**
*Bottom up approaches to synthetic cellularity*
T-Y Dora Tang (Max Planck Institute for Cellular Molecular Biology and Genetics, Germany)

16:40-17:10 **S2-3**
*Simple peptides enhance assembly and activity of RNA molecules*
Shunsuke Tagami (RIKEN Center for Biosystems Dynamics Research, Japan)

17:10-17:30 **Coffee Break**

17:30-18:00 **S2-4**
*The biophysics of RNP granule formation and disease*
Simon Alberti (Max Planck Institute of Molecular Cell Biology and Genetics, Germany)

18:00-18:20 **S2-5**
*Generating force in living cells at will*
Takanari Inoue (Johns Hopkins University, USA)

18:20-18:50 **S2-6**
*Making an artificial cell capable of Darwinian evolution*
Norikazu Ichihashi (The University of Tokyo, Japan)

18:50-20:30 Reception at BDR Lounge

*Selected talks*
Tuesday, March 26 (Day 2)

Session 3: Cutting-edge Technology
Chair: Yo Tanaka

9:30-10:00 **S3-1**
High-resolution, high-throughput electrophysiology platforms for drug discovery applications using iPSC-derived neurons
Urs Frey (MaxWell Biosystems AG, Switzerland)

10:00-10:30 **S3-2**
Multiplexed analysis based on the single cells array
Dahai Ren (Tsinghua University, China)

10:30-10:50 **S3-3**
Integrative platform to control and sensing microenvironment for 3D tissue reconstruction
Masaya Hagiwara (Osaka Prefecture University, Japan)

10:50-11:20 **Coffee Break**

11:20-11:50 **S3-4**
Improving cardiovascular “diseases-in-a-dish” with active biomaterials
Adam J Engler (University of California San Diego, USA)

11:50-12:20 **S3-5**
Pioneering nanofluidics for new chemistry, biology, and materials science
Yan Xu (Osaka Prefecture University, Japan)

12:20-12:50 **S3-6**
User-friendly cellular or tissue patterning methods and application to their analysis
Yo Tanaka (RIKEN Center for Biosystems Dynamics Research, Japan)

12:50-13:50 **Lunch**

13:50-15:50 **Poster Session 2**
13:50-14:50 Presenters of posters with category “A”
14:50-15:50 Presenters of posters with category “B”

*Selected talks
Session 4: Theory and Data Analysis
Chair: Yoshihiro Morishita

15:50-16:20 S4-1
Hybrid control and treatment design of prostate cancer by mathematical modeling and machine learning
Kazuyuki Aihara (The University of Tokyo, Japan)

16:20-16:50 S4-2
Neurosensorry network functionality and data-driven control
J. Nathan Kutz (University of Washington, USA)

16:50-17:10 Coffee Break

17:10-17:40 S4-3
Information transfer from medulla central pattern generators to analog microcircuits
Alain Nogaret (University of Bath, UK)

17:40-18:10 S4-4
Human time vs. mouse time: in vitro segmentation clock as a model system
Miki Ebisuya (EMBL Barcelona, Spain)

18:10- Speakers' Dinner

*Selected talks
Wednesday, March 27 (Day 3)

9:30-9:50  **S4-5**
Topological transitions of epithelial surfaces
Keisuke Ishihara (Max Planck Institute of Molecular Cell Biology and Genetics, Germany)

9:50-10:10  **S4-6**
Noise-resistant developmental reproducibility in vertebrate somite formation
Naoki Honda (Kyoto University, Japan)

10:10-10:40  **S4-7**
A quantitative and systems approach to vertebrate forebrain and heart morphogenesis
Yoshihiro Morishita (RIKEN Center for Biosystems Dynamics Research, Japan)

10:40-11:10  *Coffee Break*

Session 5: Life Cycle
Chair: Tomoya Kitajima

11:10-11:40  **S5-1**
Lifespan extension by modulating inflammation and stem cell function
Heinrich Jasper (Genentech Inc., USA)

11:40-12:10  **S5-2**
Adipose tissue NAD* biology in glucose metabolism and thermogenesis
Jun Yoshino (Washington University School of Medicine, USA)

12:10-13:40  Lunch and **Poster Session 3**
Free discussion, all posters

13:40-14:10  **S5-3**
Control of acentrosomal spindle assembly during meiosis in oocytes
Tomoya Kitajima (RIKEN Center for Biosystems Dynamics Research, Japan)

14:10-14:40  **S5-4**
Maternal transmission – a tale of two genomes

*Selected talks
Program

Mary Herbert (Newcastle University, UK)

14:40-15:10 S5-5
Reconstitution and understanding of mammalian oogenesis
Katsuhiko Hayashi (Kyushu University, Japan)

15:10-15:20 Closing Remarks by Katsuhiko Hayashi