

## Program

JST: Japan Standard Time (Japan) | EST: Eastern Standard Time (US East Coast) | PST: Pacific Standard Time (US West Coast) | CET: Central European Time (Europe)

### Wednesday, November 4 (Day 1)

#### Opening Remarks

8:00-8:10 JST | 18:00-18:10 EST (Nov 3) | 15:00-15:10 PST (Nov 3) | 0:00-0:10 CET

Eisuke Nishida (Director, RIKEN Center for Biosystems Dynamics Research, Japan)

#### Keynote Talk 1

Chair: Mitsuru Morimoto

8:10-8:50 JST | 18:10-18:50 EST (Nov 3) | 15:10-15:50 PST (Nov 3) | 0:10-0:50 CET

#### **K1-1\*** Retinal Organoid Transplantation

Masayo Takahashi (RIKEN Center for Biosystems Dynamics Research, Japan / Vision Care Inc., Japan)

#### Industry Session 1\*

8:50-9:00 JST | 18:50-19:00 EST (Nov 3) | 15:50-16:00 PST (Nov 3) | 0:50-1:00 CET

Recorded flash talks from supporting companies and organizations

**I1-1** Foundation for Biomedical Research and Innovation at Kobe

**I1-2** Cyfuse Biomedical K.K.

**I1-3** Sysmex Corporation

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#### Break

9:00-9:20 JST | 19:00-19:20 EST (Nov 3) | 16:00-16:20 PST (Nov 3) | 1:00-1:20 CET

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#### Session 1: The Principles of Self-organization 1

Chair: Cantas Alev

9:20-9:50 JST | 19:20-19:50 EST (Nov 3) | 16:20-16:50 PST (Nov 3) | 1:20-1:50 CET

#### **S1-1\*** Mechanism and in vitro reconstitution of mammalian germ-cell development

Mitinori Saitou (Kyoto University, Japan)

9:50-10:20 JST | 19:50-20:20 EST (Nov 3) | 16:50-17:20 PST (Nov 3) | 1:50-2:20 CET

#### **S1-2** TBA

Hironobu Fujiwara (RIKEN Center for Biosystems Dynamics Research, Japan)

10:20-10:50 JST | 20:20-20:50 EST (Nov 3) | 17:20-17:50 PST (Nov 3) | 2:20-2:50 CET

#### **S1-3\*** Organoids by Design: Modeling hepato-pancreato-biliary organogenesis

Takanori Takebe (Center for Stem Cell and Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA / Tokyo Medical and Dental University, Japan)

\*AVAILABLE ON DEMAND

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### **Session 2: The Principles of Self-organization 2**

Chair: Hironobu Fujiwara

17:00-17:30 JST | 3:00-3:30 EST | 0:00-0:30 PST | 9:00-9:30 CET

**S2-1\* Genetic Engineering iPS cells for modulating immunogenicity**

Akitsu Hotta (Center for iPS Cell Research and Application (CiRA), Kyoto University, Japan)

17:30-17:45 JST | 3:30-3:45 EST | 0:30-0:45 PST | 9:30-9:45 CET

**S2-2 Generation of nail organ from unipotent nail stem cells expanded in 3D organoid culture system**

Makoto Takeo (RIKEN Center for Biosystems Dynamics Research, Japan)

17:45-18:00 JST | 3:45-4:00 EST | 0:45-1:00 PST | 9:45-10:00 CET

**S2-3\* Toward Synthetic Embryology and Induced Embryogenesis from Cultured Cells**

Cody Kime (RIKEN Center for Biosystems Dynamics Research, Japan)

18:00-18:30 JST | 4:00-4:30 EST | 1:00-1:30 PST | 10:00-10:30 CET

**S2-4 Human Time vs. Mouse Time with Recapitulated Segmentation Clocks**

Miki Ebisuya (EMBL Barcelona, Spain)

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### Thursday, November 5 (Day 2)

#### Session 3: Memorial Session of Dr. Yoshiki Sasai

Chair: Mitinori Saitou

8:00-8:30 JST | 18:00-18:30 EST (Nov 4) | 15:00-15:30 PST (Nov 4) | 0:00-0:30 CET

**S3-1\* Development of 3-dimensional telencephalic tissue induction from human pluripotent stem cells in Sasai lab**

Hideya Sakaguchi (RIKEN Center for Biosystems Dynamics Research, Japan)

8:30-9:00 JST | 18:30-19:00 EST (Nov 4) | 15:30-16:00 PST (Nov 4) | 0:30-1:00 CET

**S3-2\* Dynamic transcriptional control of neural stem cells**

Ryoichiro Kageyama (Kyoto University, Japan)

9:00-9:30 JST | 19:00-19:30 EST (Nov 4) | 16:00-16:30 PST (Nov 4) | 1:00-1:30 CET

**S3-3\* Cell fate trajectories in cortical organoids in development and disease**

Flora Vaccarino (Yale University, USA)

#### Industry Session 2\*

9:30-9:45 JST | 19:30-19:45 EST (Nov 4) | 16:30-16:45 PST (Nov 4) | 1:30-1:45 CET

Recorded flash talks from supporting companies and organizations

**I2-1** YAMAHA MOTOR CO., LTD.

**I2-2** CELLINK KK

**I2-3** MATRIXOME, Inc.

**I2-4** Nissan Chemical Corporation

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#### Break

9:45-10:00 JST | 19:45-20:00 EST (Nov 4) | 16:45-17:00 PST (Nov 4) | 1:45-2:00 CET

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#### Session 4: Engineering Approaches

Chair: Ryuji Yokokawa

10:00-10:30 JST | 20:00-20:30 EST (Nov 4) | 17:00-17:30 PST (Nov 4) | 2:00-2:30 CET

**S4-1\* Multi-cellular engineered living systems for neurological diseases**

Roger D. Kamm (Massachusetts Institute of Technology, USA)

10:30-11:00 JST | 20:30-21:00 EST (Nov 4) | 17:30-18:00 PST (Nov 4) | 2:30-3:00 CET

**S4-2\* Microfluidics for organoid research**

Shoji Takeuchi (The University of Tokyo, Japan)

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11:00-11:15 JST | 21:00-21:15 EST (Nov 4) | 18:00-18:15 PST (Nov 4) | 3:00-3:15 CET  
**S4-3\* Transient expression of NFIA enables glial competency and the rapid derivation of astrocytes from human NSCs**

Jason Tchieu (Center for Stem Cell & Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA)

11:15-11:30 JST | 21:15-21:30 EST (Nov 4) | 18:15-18:30 PST (Nov 4) | 3:15-3:30 CET  
**S4-4\* Lighting JeWells: towards an innovative HCS platform for organoids and its biomedical applications**

Anne Beghin (National University of Singapore, Singapore)

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### Session 5: Cutting Edge Technologies

Chair: Minoru Takasato

17:00-17:30 JST | 3:00-3:30 EST | 0:00-0:30 PST | 9:00-9:30 CET

**S5-1 Understanding of gastrointestinal diseases using organoid technology**

Toshiro Sato (Keio University School of Medicine, Japan)

17:30-18:00 JST | 3:30-4:00 EST | 0:30-1:00 PST | 9:30-10:00 CET

**S5-2\* Engineering Organoids-on-a-chip**

Matthias P. Lutolf (École Polytechnique Fédérale de Lausanne (EPFL), Switzerland)

18:00-18:30 JST | 4:00-4:30 EST | 1:00-1:30 PST | 10:00-10:30 CET

**S5-3 Lineage recording reveals dynamics of cerebral organoid regionalization**

J. Gray Camp (Institute of Molecular and Clinical Ophthalmology Basel, University of Basel, Switzerland)

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### Friday, November 6 (Day 3)

#### Session 6: Modeling Development and Disease 1

Chair: Makoto Takeo

8:00-8:30 JST | 18:00-18:30 EST (Nov 5) | 15:00-15:30 PST (Nov 5) | 0:00-0:30 CET

**S6-1\* Single cell transcriptomics reveals a signaling roadmap coordinating endoderm and mesoderm lineage diversification during foregut organogenesis**

Aaron M Zorn (Center for Stem Cell & Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA)

8:30-9:00 JST | 18:30-19:00 EST (Nov 5) | 15:30-16:00 PST (Nov 5) | 0:30-1:00 CET

**S6-2\* Induction of tracheal mesoderm and chondrocyte from pluripotent stem cells in mouse and human**

Mitsuru Morimoto (RIKEN Center for Biosystems Dynamics Research, Japan)

9:00-9:30 JST | 19:00-19:30 EST (Nov 5) | 16:00-16:30 PST (Nov 5) | 1:00-1:30 CET

**S6-3\* Lung organoids derived from human pluripotent stem cells**

Hans-Willem Snoeck (Columbia Center for Human Development, USA)

#### Industry Session 3\*

9:30-9:40 JST | 19:30-19:40 EST (Nov 5) | 16:30-16:40 PST (Nov 5) | 1:30-1:40 CET

Recorded flash talks from supporting companies and organizations

**I3-1** AGC Inc.

**I3-2** RORZE Lifescience Inc.

**I3-3** Sumitomo Electric Industries Ltd.

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#### Break

9:40-10:00 JST | 19:40-20:00 EST (Nov 5) | 16:40-17:00 PST (Nov 5) | 1:40-2:00 CET

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#### Session 7: Modeling Development and Disease 2

Chair: Toshiro Sato

10:00-10:30 JST | 20:00-20:30 EST (Nov 5) | 17:00-17:30 PST (Nov 5) | 2:00-2:30 CET

**S7-1 Generating 3-dimensional organs of the urinary tract using human iPS cells**

Minoru Takasato (RIKEN Center for Biosystems Dynamics Research, Japan)

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10:30-11:00 JST | 20:30-21:00 EST (Nov 5) | 17:30-18:00 PST (Nov 5) | 2:30-3:00 CET

**S7-2\* Building and repairing human intestine with iPSC generated organoids**

Michael A. Helmrath (Center for Stem Cell and Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA)

11:00-11:15 JST | 21:00-21:15 EST (Nov 5) | 18:00-18:15 PST (Nov 5) | 3:00-3:15 CET

**S7-3 Towards *in vitro* human somitogenesis**

Cantas Alev (Institute for Advanced Study of Human Biology (ASHBi), Kyoto University, Japan)

11:15-11:30 JST | 21:15-21:30 EST (Nov 5) | 18:15-18:30 PST (Nov 5) | 3:15-3:30 CET

**S7-4\* Single-Cell Transcriptomic Analysis Reveals Developmentally Impaired Endocardial Population in Hypoplastic Left Heart Syndrome**

Mingxia Gu (Center for Stem Cell and Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA)

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### Keynote Talk 2

Chair: Fumio Matsuzaki

21:00-21:40 JST | 7:00-7:40 EST | 4:00-4:40 PST | 13:00-13:40 CET

**K2-1\* Modeling human development and disease in cerebral organoids**

Juergen A. Knoblich (Institute of Molecular Biotechnology of the Austrian Academy of Science, Austria)

21:40-22:10 JST | 7:40-8:10 EST | 4:40-5:10 PST | 13:40-14:10 CET

**K2-2\* Human pluripotent stem cell-derived gastrointestinal organoids as new models to study human organ development, digestive diseases and diabetes**

James Wells (Center for Stem Cell and Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA)

### Closing Remarks

22:10-22:20 JST | 8:10-8:20 EST | 5:10-5:20 PST | 14:10-14:20 CET

Aaron M. Zorn (Director, Center for Stem Cell and Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, USA)