

HUMAN DEVELOPMENT: FROM EMBRYOS TO STEM CELL MODELS

Awaji, Japan

Sunday, March 5 – Friday, March 10, 2023

Sunday	7:00 pm – 8:00 pm	Opening Remarks and Keynote Lecture
Sunday	8:00 pm – 11:00 pm	<i>Sake Tasting / Dinner / Social Hour</i>
Monday	9:00 am – 12:00 pm	1 Embryology
Monday	2:00 pm – 5:00 pm	2 Symmetry
Monday	7:00 pm – 9:30 pm	Poster Session I
Tuesday	9:00 am – 12:00 pm	3 Engineering
Tuesday	1:30 pm – 6:00 pm	<i>Excursion</i>
Tuesday	7:30 pm – 8:15 pm	Keynote Lecture
Tuesday	8:15 pm – 10:30 pm	4 Embryo Models I
Wednesday	9:00 am – 11:30 am	5 Embryo Models II
Wednesday	11:30 am – 12:30 pm	Roundtable Discussion on Ethics
Wednesday	2:00 pm – 5:30 pm	6 Synthetic Organs I
Wednesday	7:00 pm – 9:30 pm	Poster Session II
Thursday	9:00 am – 12:00 pm	7 Synthetic Organs II
Thursday	2:00 pm – 5:00 pm	8 Lineages
Thursday	6:30 pm	<i>Cocktails and Banquet</i>
Friday		<i>Departure</i>

Awaji Yumebutai Conference Center

Meeting venue: Main Hall, 2nd floor of the conference center

Poster session: Lobby in the 1st basement of the conference center

CSHA office: Room 202

Breakfast* : Coccolare, 2nd floor of Grand Nikko Awaji

Dinner (March 5-8): Event Hall, 1st basement of the conference center

Lunch (March 6-9): Event Hall, 1st basement of the conference center

Cocktails (March 9): Cielo, 1st floor of Grand Nikko Awaji

Banquet (March 9): Stella, 1st floor of Grand Nikko Awaji

Social hour (March 5-8): Event Hall, 1st basement of the conference center

Social hour (March 9): Reception Hall B, 2nd floor of the conference center

**Only available for guests staying at Grand Nikko Awaji*

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PROGRAM

SUNDAY, MARCH 5—7:00 PM

Opening Remarks

Cantas Alev
Kyoto University

KEYNOTE LECTURE

Chairperson: **Alfonso Martinez-Arias**, University of Cambridge,
Cambridge, United Kingdom

**Mechanism and in vitro reconstitution of mammalian germ-cell
development**

Mitinori Saitou [35'+10']

Presenter affiliation: Kyoto University, Kyoto, Japan.

1

Dinner and Sake Tasting

MONDAY, March 6—9:00 AM

SESSION 1 EMBRYOLOGY

Chairpersons: **Guojun Sheng**, Kumamoto University, Kumamoto, Japan
Lilianna Solnica-Krezel, Washington University School of
Medicine, St. Louis, Missouri, USA

The revival of research on human development

Nick Hopwood [20'+10']

Presenter affiliation: University of Cambridge, Cambridge, United
Kingdom.

2

Gastrulation of human and monkey embryo in vitro

Weizhi Ji [20'+10']

Presenter affiliation: State Key Laboratory of Primate Biomedical
Research, Institute of Primate Translational Medicine, Kunming,
China.

3

Break

Gastrulation morphology of primates—What’s in it for the human?

Christoph Viebahn [20'+10']

Presenter affiliation: University Medical Centre Göttingen, Göttingen, Germany.

4

Alternative mammalian strategies leading toward gastrulation—The central epiblast shielding hypothesis

Peter L. Pfeffer [20'+10']

Presenter affiliation: Victoria University Wellington, Wellington, New Zealand.

5

Establishing a reference map of human peri-implantation development

Laurent David [20'+10']

Presenter affiliation: Nantes Université, CHU Nantes, CNRS, INSERM, Nantes, France.

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MONDAY, March 6—2:00 PM

SESSION 2 SYMMETRY

Chairpersons: **Tomonori Nakamura**, Kyoto University, Japan
Jessica Liu, City University of Hong Kong, Hong Kong

Breaking embryonic symmetry with synthetic models of the human embryo

Mijo Simunovic [20'+10']

Presenter affiliation: Columbia University, New York, New York.

7

Evolution of animal asymmetry

Melanie Tingler, Tim Ott, Martin Blum [20'+10']

Presenter affiliation: University of Hohenheim, Stuttgart, Germany.

8

Break

Notochord and axial progenitor generation by timely BMP and NODAL inhibition during vertebrate trunk formation

Tiago Rito, Ashley Libby, Maddy Demuth, James Briscoe [20'+10']

Presenter affiliation: The Francis Crick Institute, London, United Kingdom.

9

Expansion of ventral foregut is linked to changes in the enhancer landscape for organ-specific differentiation

Yan Fung Wong, Yatendra Kumar, Martin Proks, Jose R. Herrera, Michaela M. Rothová, Rita S. Monteiro, Sara Pozzi, Rachel E. Jennings, Neil A. Hanley, Wendy A. Bickmore, Joshua M. Brickman [20'+10']

Presenter affiliation: University of Copenhagen, Copenhagen, Denmark.

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The Guinea pig—An alternative small animal model to study early human development

Jesica Canizo, Cheng Zhao, Savana Biondic, Katherine Vandal, Sophie Petropoulos [20'+10']

Presenter affiliation: Université de Montréal, Montreal, Canada; CRCHUM, Montreal, Canada; Karolinska Institutet, Stockholm, Sweden.

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MONDAY, March 6—7:00 PM

POSTER SESSION I

See p. xiv for list of posters

TUESDAY, March 7—9:00 AM

SESSION 3 ENGINEERING

Chairpersons: **Cantas Alev**, Kyoto University, Kyoto, Japan
Sophie Petropoulos, Université de Montréal, Montreal, Canada / Karolinska Institutet, Stockholm, Sweden

Geometry and genetics

Eric D. Siggia [20'+10']

Presenter affiliation: Rockefeller University, New York, New York.

12

Developmental bioengineering for building human embryo and organ models

Jianping Fu [20'+10']

Presenter affiliation: University of Michigan, Ann Arbor, Ann Arbor, Michigan.

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Break

Signaling logic underlying cell fate decisions during human gastrulation

Aryeh Warmflash [20'+10']

Presenter affiliation: Rice University, Houston, Texas.

14

An efficient and controllable synthetic model of early embryonic development using CRISPR epigenome editing

Gerrald Lodewijk, Sayaka Kozuki, Ben Topacio, Ali Shariati [20'+10']

Presenter affiliation: University of California, Santa Cruz, Santa Cruz, California.

15

A bioengineering approach to establish synthetic human brain circuits

Jean-Paul Urenda, Martin Tran, Duncan Chadly, Van Truong, James Eichenbaum, Carlos Lois, Michael B. Elowitz, Megan L. McCain, Georgia Quadrato [20'+10']

Presenter affiliation: University of Southern California, Los Angeles, California.

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TUESDAY, March 7—1:30 PM

EXCURSION

TUESDAY, March 7—7:30 PM

KEYNOTE LECTURE

Chairperson: Janet Rossant, University of Toronto, Canada

Cell fate decisions and morphogenetic behaviors of extraembryonic and germ layer cells in 2D and 3D human ESC cultures

Lila Solnica-Krezel [35'+10']

Presenter affiliation: Washington University School of Medicine in St. Louis, St. Louis, Missouri.

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TUESDAY, March 7—8:15 PM

SESSION 4 EMBRYO MODELS I

Chairpersons: **Kathryn Cheah**, University of Hong Kong, Hong Kong
Jacob Hanna, Weizmann Institute of Science, Rehovot, Israel

Efficient and scalable generation of human primordial germ cells

Arend W. Overeem, Yolanda W. Chang, Susana M. Chuva de Sousa Lopes [20'+10']

Presenter affiliation: Leiden University Medical Center, Leiden, Netherlands.

18

Break

Modelling human pancreas development and disease

Anne Grapin-Botton [20'+10']

Presenter affiliation: Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany.

19

Using human gastruloids and extended models to explore principles of human development

Jamie Thompson, Komal Makwana, Louise Tilley, Jesus Cantoral Rebordinos, Peter Baille-Benson, Cantas Alev, Naomi Moris [20'+10']

Presenter affiliation: Francis Crick Institute, London, United Kingdom.

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Metabolic rewiring underpins human trophoblast induction

Karlien van Nerum, Viktoria Lavro, Anne Wenzel, Jan J. Zylicz [20'+10']

Presenter affiliation: University of Copenhagen, Copenhagen, Denmark.

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WEDNESDAY, March 8—9:00 AM

SESSION 5 EMBRYO MODELS II

Chairpersons: **Hongkui Deng**, Peking University, Beijing, China
 Ge Guo, University of Exeter, United Kingdom

Dissecting lineage specification using embryos and stem cell models

Fredrik Lanner [20'+10']

Presenter affiliation: Karolinska Institutet, Stockholm, Sweden;
Karolinska University Hospital, Stockholm, Sweden.

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Reconstructing embryos from multiple stem cells

Magdalena Zernicka-Goetz [20'+10']

Presenter affiliation: University of Cambridge, Cambridge, United Kingdom.

Break

Reprogramming of histone modifications in human embryo development

Shaorong Gao [20'+10']

Presenter affiliation: Tongji University, Shanghai, China.

23

Synthetic ex utero embryogenesis—From naive pluripotent stem cells to bona fide embryo models

Jacob H. Hanna [20'+10']

Presenter affiliation: Weizmann Institute of Science, Rehovot, Israel.

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WEDNESDAY, March 8—11:30 AM

ROUNDTABLE DISCUSSION on ETHICS

Moderated by: **Douglas Sipp**

Panelists: **Janet Rossant**
 Jacob Hanna
 Magdalena Zernicka-Goetz
 Nicolas Rivron
 Frederik Lanner
 Nick Hopwood

SESSION 6 SYNTHETIC ORGANS I

Chairpersons: **Anne Grapin-Botton**, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany
Stefan Liebau, University of Tübingen, Tübingen, Germany

Upgrading the physiological relevance of human brain organoids

Georgia Quadrato [20'+10']

Presenter affiliation: USC, Los Angeles, California.

25

Self-organizing model of human neural tube and somite co-morphogenesis

Simona Gribaudo, Rémi Robert, Björn van Sambeek, Anna Lyubimova, Kamal Bouhali, Xavier Morin, Alexander van Oudenaarden, Stéphane Nedelec [20'+10']

Presenter affiliation: INSERM, Paris, France; Sorbonne Université, Paris, France.

26

Multi-modal spatiotemporal phenotyping of human organoid development

J. Gray Camp [20'+10']

Presenter affiliation: University of Basel, Basel, Switzerland; Institute of Molecular and Clinical Ophthalmology Basel, Basel, Switzerland; Roche Institute for Translational Bioengineering, Roche Pharma Research and Early Development, Basel, Switzerland.

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Break

Reconstituting human somitogenesis and axial development in vitro

Cantav Alev [20'+10']

Presenter affiliation: Kyoto University, Kyoto, Japan.

Enabling Next Generation Functional Characterization of Human Neural Organoids

Urs Frey [20'+10']

Presenter affiliation: MaxWell Biosystems, Zurich, Switzerland.

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Interaction between form and fate in cerebral organoids

Ilaria Chiaradia, Ivan Imaz-Rosshandler, Benedikt Nilges, Jerome Boulanger, Laura Pellegrini, Richa Das, Nachiket Kashikar, Madeline A. Lancaster [20'+10']

Presenter affiliation: MRC LMB, Cambridge, United Kingdom.

29

A pluripotent stem cell-based model for human embryonic hematopoiesis

Shicheng Sun, Ali Motazedian Motazedian, Jacky Li, Kevin Wijanarko, Jacqueline Schiesser, Yi Yu, Elizabeth Ng, Andrew Elefanty, Edouard Stanley [20'+10']

Presenter affiliation: Stem Cell Biology, Melbourne, Australia; Novo Nordisk Foundation Center for Stem Cell Medicine (reNEW), Melbourne, Australia; Changping Laboratory, Beijing, China.

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WEDNESDAY, March 8—7:00 PM

POSTER SESSION II

See p. xiv for List of Posters

THURSDAY, March 9—9:00 AM

SESSION 7 SYNTHETIC ORGANS II

Chairpersons: **Mu He**, University of Hong Kong, Hong Kong
Shahragim Tajbakhsh, Institut Pasteur, Paris, France

Generation of the 3D kidney from pluripotent stem cells

Ryuichi Nishinakamura [20'+10']

Presenter affiliation: Institute of Molecular Embryology and Genetics, Kumamoto University, Kumamoto, Japan.

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Deconstructing human musculo-skeletal development in vitro

Olivier Pourquié [20'+10']

Presenter affiliation: Harvard Medical School, Boston, Massachusetts; Brigham and Women's Hospital, Boston, Massachusetts; Harvard University, Cambridge, Massachusetts.

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Break

Skin organoids for developmental modeling and cell therapy

Karl R. Koehler [20'+10']

Presenter affiliation: Boston Children's Hospital, Boston, Massachusetts; Harvard Medical School, Boston, Massachusetts. 33

Hongkui Deng [20'+10']

Presenter affiliation: Peking University, Beijing, China.

Multomic profiling of human kidney organoids reveals PAX8 as a critical regulator of human renal mesenchymal-to-epithelial transition

John-Poul Ng-Blichfeldt, Julie M. Williams, Katja Röper [20'+10']

Presenter affiliation: MRC Laboratory of Molecular Biology, Cambridge, United Kingdom. 34

THURSDAY, March 9—2:00 PM

SESSION 8 LINEAGES

Chairpersons: **Joshua Brickman**, University of Edinburgh, United Kingdom
John Wallingford, University of Texas, Austin, Texas, USA

Regulatory dynamics of lineage segregation during early human embryo development

Ge Guo [20'+10']

Presenter affiliation: University of Exeter, Exeter, United Kingdom. 35

Blastoids—Modeling early mouse and human development and implantation

Nicolas Rivron [20'+10']

Presenter affiliation: Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna BioCenter (VBC), Vienna, Austria. 36

Break

Modelling peri-implantation development using naïve human pluripotent stem cells

Yasuhiro Takashima, Takumi Okubo [20'+10']

Presenter affiliation: Kyoto University, Kyoto, Japan. 37

The brain arises from two separate embryonic origins, with implications for development, disease, and evolution

Kyle M. Loh [20'+10']

Presenter affiliation: Stanford University, Stanford, California.

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Unique clonal selection to explore heterogeneity in human pluripotent stem cells

Omar Bashth, Rina Sakata, Yusuke Kijima, Nozomu Yachie, Nika Shakiba [20'+10']

Presenter affiliation: The University of British Columbia, Vancouver, Canada.

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Closing Remarks

Janet Rossant

University of Toronto

AWARD CEREMONY

THURSDAY, March 9—6:30 PM

COCKTAILS and BANQUET

POSTERS

Unique clonal selection to explore heterogeneity in human pluripotent stem cells

Omar Bashth, Rina Sakata, Yusuke Kijima, Nozomu Yachie, Nika Shakiba

Presenter affiliation: The University of British Columbia, Vancouver, Canada.

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Dissecting signaling rules of the first lineage bifurcation of embryonic development using differentiation slingshot

Wallis Boyd, Miaoci Zhang, Walter Piszker, Carlotta Ronda, Mijo Simunovic

Presenter affiliation: Columbia University, New York, New York.

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Paraxial mesoderm organoids (Somitoids) model the development of human somites

Christoph Budjan, Shichen Liu, Adrian Ranga, Senjuti Gayen, Olivier Pourquie, Sahand Hormoz

Presenter affiliation: Harvard Medical School, Boston, Massachusetts; Dana-Farber Cancer Institute, Boston, Massachusetts.

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Establishing a gastruloid-based 3D model of human heart development to provide novel insights into congenital heart defects

Matthew Lok-Man Chang, Peter Baillie-Benson, Maggie Kwan, Naomi Moris, Stephanie Protze
Presenter affiliation: University Health Network, Toronto, Canada;
University of Toronto, Toronto, Canada.

42

Single cell transcriptomic analyses of notochordal-like and chondrocyte-like cells in the human and mouse nucleus pulposus—Implications for intervertebral disc degeneration

Kathryn Cheah, Xiaonan Dong, Andrew Guo, Zhijia Tan, Pekai Chen, Tiffany Au
Presenter affiliation: University of Hong Kong, Hong Kong, China.

43

Elucidating the role of phosphorylated Sox9 in mediating the detrimental activities of spinal cord astrocytes in neuropathic pain pathogenesis

Yonglong Chen, Chi Wai Cheung, Jessica Aijia Liu
Presenter affiliation: The University of Hong Kong, Hong Kong, Hong Kong.

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Elucidating the role of Deleted in Liver Cancer 1 (DLC1) in human neural crest development

Zihan Xu, Tianyuan Shi, Yanxia Rao, Jessica Aijia Liu, Martin Cheung
Presenter affiliation: The University of Hong Kong, Hong Kong, China.

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Interaction between form and fate in cerebral organoids

Ilaria Chiaradia, Ivan Imaz-Rosshandler, Benedikt Nilges, Jerome Boulanger, Laura Pellegrini, Richa Das, Nachiket Kashikar, Madeline A. Lancaster
Presenter affiliation: MRC LMB, Cambridge, United Kingdom.

29

Establishment of porcine embryonic stem cells that can be cultured in a simplified serum-free medium and applicable to feeder-free conditions

Hyerin Choi, Sang-Hwan Hyun
Presenter affiliation: Laboratory of Veterinary Embryology and Biotechnology (VETEMBIO) , Cheongju, South Korea; Institute of Stem Cell and Regenerative Medicine (ISCRM), Cheongju, South Korea.

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- Maturation of spinal cord organoids in defined hydrogels and modeling of spinal cord diseases**
Wai Hon Chooi, Chong Yi Ng, Valerie Ow, Jasmine Harley, Winanto Ng, Cheryl Lee, Sylvie Alonso, Kun Xue, Shi-Yan Ng
 Presenter affiliation: Institute of Molecular and Cell Biology, Singapore. 47
- Sensitization of a conserved suppression from canonical WNT on SOX10 expression in the inner ear by SOX9^{Y440X}**
Ka Chi Chu, Kathryn Cheah
 Presenter affiliation: The University of Hong Kong, Hong Kong, China. 48
- Cell-cell interactions in ovarian cords reveal the mechanism of primordial follicle formation in humans**
Sylwia Czukiewska, Xueying Fan, Adriaan Mulder, Lotte van der Meer, Roberto Matorras, Cristina Eguizabal, Roman Koning, Susana Chuva de Sousa Lopes
 Presenter affiliation: Leiden University Medical Center, Leiden, Netherlands. 49
- Establishing a reference map of human peri-implantation development**
Laurent David
 Presenter affiliation: Nantes Université, CHU Nantes, CNRS, INSERM, Nantes, France. 6
- Molecular mechanism of the craniofacial shaping through an environmental influence in embryogenesis**
Ruslan Deviatiiarov, Oleg Gusev
 Presenter affiliation: Juntendo University, Tokyo, Japan; Kazan Federal University, Kazan, Russia. 50
- In vitro modelling of respiratory infections in idiopathic pulmonary fibrosis using patient-specific hiPSC-derived alveolar epithelial type 2 cells**
 Ana Serna-Valverde, Liam Reed, Sara Cuvas-Ocana, Peggy Lo, Amanda Tatler, Nicholas Hannan
 Presenter affiliation: University of Nottingham Biodiscovery Institute, Nottingham, United Kingdom. 51
- Cilia-secretory hybrid cells of mice and human in airway development and disease states**
Mu He, Jiayi Zheng, Bing Wu, Spyros Darmanis, Lily Y. Jan
 Presenter affiliation: The University of Hong Kong, Hong Kong, Hong Kong. 52

- Identifying gene regulatory networks in human skeletal development using human pluripotent stem cells and single cell analyses**
Hironori Hojo, Shoichiro Tani, Hiroyuki Okada, Ung-il Chung, Shinsuke Ohba
 Presenter affiliation: The University of Tokyo, Bunkyo, Japan. 53
- In vitro reconstitution of human development from reset human pluripotent stem cells**
Hao-An Hsiung, Matthias P. Lutolf
 Presenter affiliation: Laboratory of Stem Cell Bioengineering (LSCB), Lausanne, Switzerland. 54
- Development of a chicken embryo-based *in vivo* system to study human iPS cell differentiation into lateral plate mesoderm derivatives**
Galym Ismagulov, Guojun Sheng
 Presenter affiliation: International Research Center for Medical Sciences (IRCMS), Kumamoto, Japan. 55
- Intracellular glycogen prevents AMPK from loss of fatty acid for maintenance of naïve pluripotency**
Seong-Min Kim, Eun-Ji Kwon, Ji-Young Oh, Keun-Tae Kim, Hyuk-Jin Cha
 Presenter affiliation: Seoul National University, Seoul, South Korea. 56
- Generation of dorsal spinal GABAergic neurons from human urine cells by direct reprogramming for the treatment of central neuropathic pain**
 Xianglan Feng, Ralf Jauch, Chiwai Cheung, Jessica Aijia Liu
 Presenter affiliation: The University of Hong Kong, Hong Kong, Hong Kong; City University of Hong Kong, Hong Kong, Hong Kong. 57
- The brain arises from two separate embryonic origins, with implications for development, disease, and evolution**
Kyle M. Loh
 Presenter affiliation: Stanford University, Stanford, California. 38
- Induced pluripotent stem cells self-organise into human trunk-like structures with somite and neural tube-like morphologies.**
Komal Makwana, Louise Tilley, Jamie L. Thompson, Peter Baillie-Benson, Cantas Alev, Naomi Moris
 Presenter affiliation: The Francis Crick Institute, London, United Kingdom. 58

Human 3D <i>in vitro</i> model of the inner blood-retinal barrier and diabetic retinopathy <u>Thomas L. Maurissen</u> , Roger D. Kamm, Héloïse Ragelle Presenter affiliation: F. Hoffmann-La Roche Ltd., Basel, Switzerland.	59
Multiomic profiling of human kidney organoids reveals PAX8 as a critical regulator of human renal mesenchymal-to-epithelial transition <u>John-Poul Ng-Blichfeldt</u> , Julie M. Williams, Katja Röper Presenter affiliation: MRC Laboratory of Molecular Biology, Cambridge, United Kingdom.	34
IL-7 enhances the derivation of embryonic stem cells by increasing porcine inner cell mass through PI3K/Akt pathway <u>Dongjin Oh</u> , Jaehyeong Ham, Sang-Hwan Hyun Presenter affiliation: Laboratory of Veterinary Embryology and Biotechnology (VETEMBIO), Cheongju, South Korea; Institute for Stem Cell & Regenerative Medicine (ISCRM), Cheongju, South Korea.	60
The Guinea pig—An alternative small animal model to study early human development Jessica Canizo, Cheng Zhao, Savana Biondic, Katherine Vandal, <u>Sophie Petropoulos</u> Presenter affiliation: Université de Montréal, Montreal, Canada; CRCHUM, Montreal, Canada; Karolinska Institutet, Stockholm, Sweden.	11
Alternative mammalian strategies leading toward gastrulation—The central epiblast shielding hypothesis <u>Peter L. Pfeffer</u> Presenter affiliation: Victoria University Wellington, Wellington, New Zealand.	5
Notochord and axial progenitor generation by timely BMP and NODAL inhibition during vertebrate trunk formation <u>Tiago Rito</u> , Ashley Libby, Maddy Demuth, James Briscoe Presenter affiliation: The Francis Crick Institute, London, United Kingdom.	9
Effect of exopolysaccharide of <i>Enterococcus faecium</i> L15 on the osteogenic differentiation of human dental pulp stem cells Hyewon Kim, <u>Sangho Roh</u> Presenter affiliation: Seoul National University, Seoul, South Korea.	61

<p>An efficient and controllable synthetic model of early embryonic development using CRISPR epigenome editing Gerrald Lodewijk, Sayaka Kozuki, Ben Topacio, <u>Ali Shariati</u> Presenter affiliation: University of California, Santa Cruz, Santa Cruz, California.</p>	15
<p>A pluripotent stem cell-based model for human embryonic hematopoiesis <u>Shicheng Sun</u>, Ali Motazedian Motazedian, Jacky Li, Kevin Wijanarko, Jacqueline Schiesser, Yi Yu, Elizabeth Ng, Andrew Elefanty, Edouard Stanley Presenter affiliation: Stem Cell Biology, Melbourne, Australia; Novo Nordisk Foundation Center for Stem Cell Medicine (reNEW), Melbourne, Australia; Changping Laboratory, Beijing, China.</p>	30
<p>Identifying neuromesodermal progenitors in a trunk-like model of human development <u>Louise Tilley</u>, Komal Makwana, Jamie L. Thompson, Peter Baillie-Benson, Cantas Alev, Naomi Moris Presenter affiliation: The Francis Crick Institute, London, United Kingdom.</p>	62
<p>A bioengineering approach to establish synthetic human brain circuits <u>Jean-Paul Urenda</u>, Martin Tran, Duncan Chadly, Van Truong, James Eichenbaum, Carlos Lois, Michael B. Elowitz, Megan L. McCain, Giorgia Quadrato Presenter affiliation: University of Southern California, Los Angeles, California.</p>	16
<p>Genome wide cell state tracing using DCM methylation in human iPSCs models <u>Marieke E. van Leeuwen</u>, Beatrice Tan, Evelyne Wassenaar, Cristina Gontan Pardo, Joost Gribnau Presenter affiliation: Erasmus MC, Rotterdam, the Netherlands.</p>	63
<p>Metabolic rewiring underpins human trophoblast induction <u>Karlien Van Nerum</u>, Viktoria Lavro, Anne Wenzel, Jan J. Zylicz Presenter affiliation: University of Copenhagen, Copenhagen, Denmark.</p>	64
<p>Recapitulation of human early embryonic development in artificial micro-environments—From notochord to gastrula <u>Zhe Wang</u>, Ruolin Hao, Mototsugu Eiraku Presenter affiliation: Kyoto University, Kyoto, Japan.</p>	65

Expansion of ventral foregut is linked to changes in the enhancer landscape for organ-specific differentiation

Yan Fung Wong, Yatendra Kumar, Martin Proks, Jose R. Herrera, Michaela M. Rothová, Rita S. Monteiro, Sara Pozzi, Rachel E. Jennings, Neil A. Hanley, Wendy A. Bickmore, Joshua M. Brickman
Presenter affiliation: University of Copenhagen, Copenhagen, Denmark.

10

Optogenetic dissection of transcriptional regulation during development

Jiayi Zhao, Nicholas Lammers, Hernan G. Garcia
Presenter affiliation: University of California at Berkeley, Berkeley, California.

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This is sentence case. This is also sentence case with Therefore, the realistic manifestations of molecular aging have the following signs—(1) Genome instability

Hancheng Zhou
Presenter affiliation: Guangzhou Medical University, Guangzhou, China.

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Metabolic rewiring underpins human trophoblast induction

Karlien van Nerum, Viktoria Lavro, Anne Wenzel, Jan J. Zylicz
Presenter affiliation: University of Copenhagen, Copenhagen, Denmark.

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