
Tuesday 24 July 2018

- 11:30 - 13:00 **Arrival and Registration**
Operon Foyer
- 13:00 - 13:15 **Opening Remarks**
Operon Large
- 13:15 - 15:15 **Session 1: Early Development**
Operon Large
- 13:15 - 13:45 **Light-sheet imaging of cell division in early mouse development** 1
Jan Ellenberg
EMBL Heidelberg, Germany
- 13:45 - 14:15 **Cell lineage differentiation in the mouse ICM: How to make a mosaic?** 2
Claire Chazaud
GReD, France
- 14:15 - 14:45 **Variability and symmetry breaking in mouse preimplantation development** 3
Dimitri Fabrèges
EMBL Heidelberg, Germany
- 14:45 - 15:00 **Preimplantation requirements for Nodal in the mouse** 4
Jerome Collignon
Institut Jacques Monod, France
- 15:00 - 15:15 **Studying the control of chromosome segregation in preimplantation mouse embryos by light sheet microscopy** 5
Manuel Eguren
EMBL Heidelberg, Germany
- 15:15 - 16:00 **Coffee Break**
Operon Foyer

EMBO Workshop: Imaging Mouse Development

16:00 - 18:00	Session 1: Early Development (continued) Operon Large	
16:00 - 16:30	Deciphering epithelial cell movements during anterior pattering in the mouse embryo Shankar Srinivas <i>University of Oxford, United Kingdom</i>	6
16:30 - 17:00	Guts and gastrulation: the cellular lineages and cellular dynamics driving the morphogenesis of the endoderm in the mouse embryo Anna-Katerina Hadjantonakis <i>Memorial Sloan Kettering Cancer Center, United States of America</i>	7
17:00 - 17:30	Regulation of cell fitness by cell competition during early mouse development Tristan Rodriguez <i>Imperial College London, United Kingdom</i>	8
17:30 - 17:45	Triggering of cell differentiation is driven by Notch in the mouse preimplantation embryo Sergio Menchero <i>Centro Nacional de Investigaciones Cardiovasculares, Spain</i>	9
17:45 - 18:00	Significant expansion of the fluorescent reporter toolkit in mouse using a novel CRISPR-mediated genome editing method Eszter Posfai <i>Hospital for Sick Children, Canada</i>	10
18:00 - 19:30	Dinner EMBL Canteen	
19:30 - 21:00	Welcome Reception Operon Foyer	

Wednesday 25 July 2018

09:00 - 10:30	Session 2: Post-implantation Development Operon Large	
09:00 - 09:30	Long-lived unipotent Blimp1-positive luminal stem cells drive mammary gland organogenesis throughout adult life Elizabeth Robertson <i>University of Oxford, United Kingdom</i>	11
09:30 - 10:00	Imaging and biophysical manipulation of cilia involved in left-right symmetry breaking Hiroshi Hamada <i>RIKEN, Japan</i>	12
10:00 - 10:30	Mesoderm cells morphology, migration mode and cytoskeleton regulation differ according to their position in the mouse embryo Isabelle Migeotte <i>Université libre de Bruxelles, Belgium</i>	13
10:30 - 11:00	Coffee Break Operon Foyer	
11:00 - 12:00	Session 2: Post-implantation Development (continued) Operon Large	
11:00 - 11:30	Inferring tissue dynamics from large sets of static 3D image data: mouse limb development James Sharpe <i>EMBL Barcelona, Spain</i>	14
11:30 - 11:45	Ex-utero development of the mouse embryo - from fertilization to organogenesis Rada Massarwa <i>Weizmann Institute of Science, Israel</i>	15

EMBO Workshop: Imaging Mouse Development

11:45 - 12:00	The origin of oscillations in the mouse presomitic mesoderm Takehito Tomita <i>EMBL Heidelberg, Germany</i>	16
12:00 - 13:30	Lunch Operon Foyer	
13:30 - 14:00	Multicolor imaging of large tissues and whole embryos Workshop hosted by Susanne Holzmeister <i>Leica Microsystems</i> Operon Large	
14:00 - 15:30	Session 2: Post-implantation Development (continued) Operon Large	
14:00 - 14:30	Title to be announced Speaker to be announced	17
14:30 - 15:00	Imaging and dynamic analysis of the post-implantation mouse embryo at the cellular level using light-sheet microscopy Kate McDole <i>Janelia Research Campus, United States of America</i>	18
15:00 - 15:15	Distinct region-specific cell behaviors in the visceral endoderm after anterior–posterior axis specification Toshihiko Fujimori <i>National Institute for Basic Biology, Japan</i>	19
15:15 - 15:30	Dullard, a phosphatase at the heart of outflow tract development and BMP pathway regulation Jean-François Darrigrand <i>Sorbonne Université, France</i>	20
15:30 - 16:00	Coffee Break Operon Foyer	

16:00 - 17:00 **Breakout Session**

Tours in various locations:

- 1) Advanced Light Microscopy Facility with Stefan Terjung
- 2) Laboratory of Robert Prevedel with Robert Prevedel
- 3) Laboratory of Jan Ellenberg with Isabell Schneider

Tutorial Session in Operon Large:

Image-analysis software discussion with Anna Kreshuk and Kate McDole

17:00 - 18:30 **Poster Session I (odd numbers)**

Operon Foyer

18:30 - 20:00 **Dinner**

EMBL Canteen

20:00 - 22:00 **After Dinner Drinks**

Operon Foyer

Thursday 26 July 2018

09:00 - 10:30	Session 3: Advanced Microscopy and Image Analysis Operon Large	
09:00 - 09:30	In toto imaging and reconstruction of post-implantation mouse development at the single-cell level Philipp Keller <i>Janelia Research Campus, United States of America</i>	21
09:30 - 10:00	Advanced optical techniques for studying mouse development in-vivo Robert Prevedel <i>EMBL Heidelberg, Germany</i>	22
10:00 - 10:30	Adding dimensions to intravital imaging Scott Fraser <i>University of Southern California, United States of America</i>	23
10:30 - 11:00	Coffee Break Operon Foyer	
11:00 - 12:00	Session 3: Advanced Microscopy and Image Analysis (continued) Operon Large	
11:00 - 11:30	Live analysis of heart tube formation in the mouse embryo Miguel Torres <i>Centro Nacional de Investigaciones Cardiovasculares, Spain</i>	24
11:30 - 11:45	Facilitating the imaging of complex samples with efficient reconstruction of large datasets and intelligent microscopy David Hörl <i>Ludwig Maximilian University Munich, Germany</i>	25

- 11:45 - 12:00 **High fidelity lineage tracing in mouse pre-implantation embryos using primed conversion of photoconvertible proteins** 26
 Maaïke Welling
ETH Zürich, Switzerland
- 12:00 - 13:30 **Lunch**
 Operon Foyer
- 13:30 - 15:00 **Session 4: Quantitative Biology, Modeling and Experimental Manipulation**
 Operon Large
- 13:30 - 14:00 **Phase separation and flow of tight junction components are required for tight junction formation and maturation** 27
 Carl-Philipp Heisenberg
Institute of Science and Technology Austria, Austria
- 14:00 - 14:30 **Optogenetics for intracellular codebreaking: How ERK activity is interpreted to control gene expression and cell fate** 28
 Jared Toettcher
Princeton University, United States of America
- 14:30 - 15:00 **Towards in vitro modeling of heart development** 29
 Giuliana Rossi
École Polytechnique Fédérale de Lausanne, Switzerland
- 15:00 - 15:30 **Coffee Break**
 Operon Foyer
- 15:30 - 17:00 **Session 4: Quantitative Biology, Modeling and Experimental Manipulation (continued)**
 Operon Large

EMBO Workshop: Imaging Mouse Development

- 15:30 - 16:00 **Principle, promise and limitations of deep neural networks for segmentation and tracking** 30
Fred Hamprecht
University of Heidelberg, Germany
- 16:00 - 16:30 **Imaging as a tool to understand the roles of essential mammalian genes** 31
Mary Dickinson
Baylor College of Medicine, United States of America
- 16:30 - 16:45 **Using kinase translocation reporters to monitor single cell MAP kinase activity during mouse preimplantation development** 32
Sergi Regot
Johns Hopkins University, United States of America
- 16:45 - 17:00 **Elucidating the role of mechanical cues during peri-implantation mouse development** 33
Stefano Vianello
École Polytechnique Fédérale de Lausanne, Switzerland
- 17:00 - 18:30 **Poster Session II (even numbers)**
Operon Foyer
- 18:30 - 20:30 **Conference Dinner**
EMBL Canteen
- 20:30 - 23:00 **Conference Party**
Operon Foyer

Friday 27 July 2018

09:00 - 10:30	Session 5: Organogenesis Operon Large	
09:00 - 09:30	Gastruloids: an ESC based model for mammalian gastrulation and axial organization Alfonso Martinez Arias <i>University of Cambridge, United Kingdom</i>	34
09:30 - 10:00	The role of signaling oscillations during mouse embryo mesoderm patterning Alexander Aulehla <i>EMBL Heidelberg, Germany</i>	35
10:00 - 10:30	Mechanism of synchronized Hes7 oscillations in the somite segmentation clock Ryoichiro Kageyama <i>Kyoto University, Japan</i>	36
10:30 - 11:00	Coffee Break Operon Foyer	
11:00 - 12:30	Session 5: Organogenesis (continued) Operon Large	
11:00 - 11:30	Neural tube closure: gene-environment interactions Lee Niswander <i>University of Colorado, United States of America</i>	37
11:30 - 12:00	Mouse heart looping in 3 dimensions Sigolène Meilhac <i>Institut Imagine and Institut Pasteur, France</i>	38
12:00 - 12:15	Vertical cell migration invaginates ectodermal organs Jeremy Green <i>King's College London, United Kingdom</i>	39

EMBO Workshop: Imaging Mouse Development

12:15 - 12:30 **In vivo multiphoton imaging of the cerebrovasculature during early post-natal development** 40

Vanessa Coelho-Santos
University of Coimbra, Portugal

12:30 - 13:00 **Poster Prize and Summary Discussion**
Operon Large

13:00 **Packed Lunch**
Operon Foyer

Poster removal. Please remember to collect your poster. Posters which have not been collected will be disposed of after the meeting.

Feedback questionnaire. Check your inbox when the meeting ends. You will find an email with the link to the online feedback questionnaire. Please take time to complete it.