



# Imaging Mouse Development

EMBO WORKSHOP



**We have moved our website to [embl.org/events](https://embl.org/events). The content below is no longer being updated.**

## **EMBL Courses and Conferences during the Coronavirus pandemic**

With the onsite programme paused, many of our events are now being offered in virtual formats.

Registration is open as usual for many events, with back-up plans in place to move further courses and conferences online as necessary. Registration fees for any events affected by the COVID-19 disruption are fully refundable.

More information for participants of events at EMBL Heidelberg can be found [here](#).

## Programme

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### Day 1 - Tuesday 24 July 2018

Time	Speaker
11:30 - 13:00	<b>Arrival and Registration</b> with light refreshments
13:00 - 13:15	<b>Opening Remarks</b>

Time	Speaker
13:15 - 18:00	<b>Session 1: Early Development</b> <b>Chair: Jérôme Wong Ng</b>
13:15 - 13:45	<b>Light-sheet imaging of cell division in early mouse development</b> <a href="#">Jan Ellenberg</a> - EMBL Heidelberg, Germany
13:45 - 14:15	<b>Cell lineage differentiation in the mouse ICM: How to make a mosaic?</b> <a href="#">Claire Chazaud</a> - GReD, France
14:15 - 14:45	<b>Variability and symmetry breaking in mouse preimplantation development</b> <a href="#">Dimitri Fabreges</a> - EMBL Heidelberg, Germany
14:45 - 15:00	<b>Preimplantation requirements for Nodal in the mouse</b> Jerome Collignon - Institut Jacques Monod, France
15:00 - 15:15	<b>Studying the control of chromosome segregation in preimplantation mouse embryos by light sheet microscopy</b> Manuel Eguren - EMBL Heidelberg, Germany
15:15 - 16:00	<b>Coffee Break</b>
16:00 - 16:30	<b>Deciphering epithelial cell movements during anterior patterning in the mouse embryo</b> <a href="#">Shankar Srinivas</a> - University of Oxford, UK
16:30 - 17:00	<b>Guts and gastrulation: the cellular lineages and cellular dynamics driving the morphogenesis of the endoderm in the mouse embryo</b> <a href="#">Anna-Katerina Hadjantonakis</a> - Memorial Sloan Kettering Cancer Center, USA
17:00 - 17:30	<b>Regulation of cell fitness by cell competition during early mouse development</b> <a href="#">Tristan Rodriguez</a> - Imperial College London, UK
17:30 - 17:45	<b>Triggering of cell differentiation is driven by Notch in the mouse preimplantation embryo</b> Sergio Menchero - Centro Nacional de Investigaciones Cardiovasculares (CNIC), Spain
17:45 - 18:00	<b>Significant expansion of the fluorescent reporter toolkit in mouse using a novel CRISPR-mediated genome editing method</b> Eszter Posfai - Hospital for Sick Children, Canada
18:00 - 19:30	<b>Dinner in EMBL Canteen</b>
19:30 - 21:00	<b>Welcome Reception in Operon Foyer</b>

## Day 2 - Wednesday 25 July 2018

Time	Speaker
09:00 - 12:00	<b>Session 2: Post-implantation Development</b> <b>Chair: Paula Gómez-Apiñániz</b>
09:00 - 09:30	<b>Long-lived unipotent Blimp1-positive luminal stem cells drive mammary gland organogenesis throughout adult life</b> <a href="#">Elizabeth Robertson</a> - University of Oxford, UK
09:30 - 10:00	<b>Imaging and biophysical manipulation of cilia involved in left-right symmetry breaking</b> <a href="#">Hiroshi Hamada</a> - RIKEN, Japan
10:00 - 10:30	<b>Mesoderm cells morphology, migration mode and cytoskeleton regulation differ according to their position in the mouse embryo</b> <a href="#">Isabel Migeotte</a> - Université Libre de Bruxelles, Belgium
10:30 - 11:00	<b>Coffee Break</b>
11:00 - 11:30	<b>Inferring tissue dynamics from large sets of static 3D image data: mouse limb development</b> <a href="#">James Sharpe</a> - EMBL Barcelona, Spain
11:30 - 11:45	<b>Ex-utero development of the mouse embryo - from fertilization to organogenesis</b> Rada Massarwa - Weizmann Institute of Science, Israel
11:45 - 12:00	<b>The origin of oscillations in the mouse presomitic mesoderm</b> Takehito Tomita - EMBL Heidelberg, Germany
12:00 - 13:30	<b>Lunch and Meet the Editors in Operon Foyer with:</b> <a href="#">Andrea Leibfried</a> - Life Science Alliance, Germany <a href="#">Martina Rembold</a> - EMBO Reports, Germany
13:30 - 14:00	<b>Multicolor imaging of large tissues and whole embryos</b> Workshop presented by Susanne Holzmeister - <a href="#">Leica Microsystems</a>
14:00 - 15:30	<b>Session 2: Post-implantation Development (continued)</b> <b>Chair: Marina Carpinelli</b>
14:00 - 14:30	<b>Facilitating the imaging of complex samples with efficient reconstruction of large datasets and intelligent microscopy</b> David Hörl - LMU Munich, Germany

Time	Speaker
14:30 - 15:00	<p><b>Imaging and dynamic analysis of the post-implantation mouse embryo at the cellular level using light-sheet microscopy</b>  <a href="#">Kate McDole</a> - Janelia Research Campus, USA</p>
15:00 - 15:15	<p><b>Distinct region-specific cell behaviors in the visceral endoderm after anterior–posterior axis specification</b>  Toshihiko Fujimori - National Institute for Basic Biology, Japan</p>
15:15 - 15:30	<p><b>Dullard, a phosphatase at the heart of outflow tract development and BMP pathway regulation</b>  Jean-François Darrigrand - Sorbonne Université, France</p>
15:30 - 16:00	<p><b>Coffee Break</b></p>
16:00 - 17:00	<p><b>Breakout Session</b>  Tours in various locations:  1) <a href="#">Advanced Light Microscopy Facility</a> with Stefan Terjung  2) <a href="#">Laboratory of Robert Prevedel</a> with Robert Prevedel  3) <a href="#">Laboratory of Jan Ellenberg</a> with Isabell Schneider  Tutorial Session in Operon Large:  Image-analysis software discussion with Anna Kreshuk and Kate McDole</p>
17:00 - 18:30	<p><b>Poster Session I (odd numbers)</b>  with beer and snacks</p>
18:30 - 20:00	<p><b>Dinner in EMBL Canteen</b></p>
20:00 - 22:00	<p><b>After Dinner Drinks in Operon Foyer</b></p>

## Day 3 - Thursday 26 July 2018

Time	Speaker
09:00 - 12:00	<p><b>Session 3: Advanced Microscopy and Image Analysis</b>  <b>Chair: Judith Reichmann</b></p>
09:00 - 09:30	<p><b>In toto imaging and reconstruction of post-implantation mouse development at the single-cell level</b>  <a href="#">Philipp Keller</a> - Janelia Research Campus, USA</p>
09:30 - 10:00	<p><b>Advanced optical techniques for studying mouse development in-vivo</b>  <a href="#">Robert Prevedel</a> - EMBL Heidelberg, Germany</p>

Time	Speaker
10:00 - 10:30	<b>Adding dimensions to intravital imaging</b> <a href="#">Scott Fraser</a> - California Institute of Technology, USA
10:30 - 11:00	<b>Coffee Break and Meet the Editors with:</b> <a href="#">Andrea Leibfried</a> - Life Science Alliance, Germany <a href="#">Martina Rembold</a> - EMBO Reports, Germany
11:00 - 11:30	<b>Live analysis of heart tube formation in the mouse embryo</b> <a href="#">Miguel Torres</a> - Spanish National Centre for Cardiovascular Research (CNIC), Spain
11:30 - 11:45	<b>High fidelity lineage tracing in mouse pre-implantation embryos using primed conversion of photoconvertible proteins</b> Maaïke Welling - ETH Zurich, Switzerland
11:45 - 13:30	<b>Lunch in Operon Foyer</b>
13:30 - 17:00	<b>Session 4: Quantitative Biology, Modeling and Experimental Manipulation</b> <b>Chair: André Dias</b>
13:30 - 14:00	<b>Phase separation and flow of tight junction components are required for tight junction formation and maturation</b> <a href="#">Carl-Philipp Heisenberg</a> - Institute of Science and Technology, Austria
14:00 - 14:30	<b>Optogenetics for intracellular codebreaking: How ERK activity is interpreted to control gene expression and cell fate</b> <a href="#">Jared Toettcher</a> - Princeton University, USA
14:30 - 15:00	<b>Towards in vitro modeling of heart development</b> <a href="#">Giuliana Rossi</a> - École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
15:00 - 15:30	<b>Coffee Break</b>
15:30 - 16:00	<b>Principle, promise and limitations of deep neural networks for segmentation and tracking</b> <a href="#">Fred Hamprecht</a> - University of Heidelberg, Germany
16:00 - 16:30	<b>Imaging as a tool to understand the roles of essential mammalian genes</b> <a href="#">Mary Dickinson</a> - Baylor College of Medicine, USA
16:30 - 16:45	<b>Using kinase translocation reporters to monitor single cell MAP kinase activity during mouse preimplantation development</b> Sergi Regot - Johns Hopkins University, USA

Time	Speaker
16:45 - 17:00	<b>Elucidating the role of mechanical cues during peri-implantation mouse development</b> Stefano Vianello - École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
17:00 - 18:30	<b>Poster Session II (even numbers)</b> with beer and snacks
18:30 - 20:30	<b>Conference Dinner in EMBL Canteen</b>
20:30 - 23:00	<b>Conference Party in Operon Foyer</b>

## Day 4 - Friday 27 July 2018

Time	Speaker
09:00 - 12:30	<b>Session 5: Organogenesis</b> <b>Chair: Matthew Anderson</b>
09:00 - 09:30	<b>Gastruloids: an ESC based model for mammalian gastrulation and axial organization</b> <a href="#">Alfonso Martinez Arias</a> - University of Cambridge, UK
09:30 - 10:00	<b>The role of signaling oscillations during mouse embryo mesoderm pattering</b> <a href="#">Alexander Aulehla</a> - EMBL Heidelberg, Germany
10:00 - 10:30	<b>Mechanism of synchronized Hes7 oscillations in the somite segmentation clock</b> <a href="#">Ryoichiro Kageyama</a> - Kyoto University, Japan
10:30 - 11:00	<b>Coffee Break</b>
11:00 - 11:30	<b>Neural tube closure: gene-environment interactions</b> <a href="#">Lee Niswander</a> - University of Colorado Denver, USA
11:30 - 12:00	<b>Mouse heart looping in 3 dimensions</b> <a href="#">Sigolène Meilhac</a> - Institut Pasteur and Institut Imagine, France
12:00 - 12:15	<b>Vertical cell migration invaginates ectodermal organs</b> Jeremy Green - King's College London, UK
12:15 - 12:30	<b>In vivo multiphoton imaging of the cerebrovasculature during early post-natal development</b> Vanessa Coelho-Santos - University of Coimbra, Portugal

Time	Speaker
12:30 - 13:00	<b>Poster Prize and Summary Discussion</b>
13:00	<b>Packed Lunch and Departure</b>