

The Identity and Evolution of Cell Types

EMBO | EMBL
Symposia



Programme

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Day 1 - Wednesday 15 May 2019

Time	Speaker
11:30-13:15	Arrival and Registration with light refreshments
13:15-13:30	Opening Remarks
13:30-17:30	Session 1 - From cell types to tissue types Chair: Gunter Wagner
13:30-14:00	Gene regulatory network recruitment and the evolutionary origin of cell type identity Gunter Wagner - Yale University, USA
14:00-14:30	The role of cell interactions in the evolution of cell types Mihaela Pavlicev - Cincinnati Children's Hospital Medical Center, USA

Time	Speaker
14:30-14:45	Building the mammalian airway: from form to function Mu He - University of California, San Francisco, USA
14:45-15:00	Spatio-temporal dynamics of mesothelial lineage formation Karin Prummel - University of Zurich, Switzerland
15:00-15:30	Evolutionary origin of cartilage Martin Cohn - University of Florida, USA
15:30-16:00	Coffee Break
16:00-16:30	How old cells make new senses - The evolution of cranial placodes in vertebrates Gerhard Schlosser - National University of Ireland Galway, Ireland
16:30-16:45	Discrete and Continuous Cell Identities of the Adult Murine Striatum Geoffrey Stanley - Stanford, USA
16:45-17:15	Evolution of the vertebrate New Head by progressive acquisition of neural crest regulatory subcircuits Marianne Bronner - California Institute of Technology, USA
17:15-19:00	Speed Networking
19:00-21:00	Dinner in the EMBL Canteen
21:00-23:00	Welcome Drinks in the ATC Rooftop Lounge

Day 2 - Thursday 16 May 2019

Time	Speaker
09:00-12:00	Session 2 - Vertebrate multi-omics Chair: Henrik Kaessmann
09:00-09:30	Single-cell transcriptomics in the sea lamprey illuminates the origins and evolution of the vertebrate brain Henrik Kaessmann - Center for Molecular Biology of Heidelberg University, Germany
09:30-10:00	A comparison of developmental dynamics between vertebrate species Allon Klein - Harvard University, USA

Time	Speaker
10:00-10:15	Understanding Progenitor and Neuronal Cell Type Identity in the Developing Human Brain Aparna Bhaduri - University of California, San Francisco, USA
10:15-10:30	The gene regulatory logic of convergent cell fate specification in the developing vertebrate skeleton Patrick Tschopp - University of Basel, Switzerland
10:30-11:00	Coffee Break
11:00-11:30	How can hundreds of cell types be built from a single genome? Evolutionary mechanisms for proteome specialization Manuel Irimia - Centre for Genomic Regulation, Spain
11:30-12:00	Brain-seq or sequencing of entire brains at the single-cell resolution: principles of molecular classification and periodic system of neurons Leonid L. Moroz - University of Florida, USA
12:00-13:30	Meet the Speakers and Lunch
13:30-16:45	Session 3 - Regulatory mechanisms of neuron type identity Chair: Oliver Hobert
13:30-14:00	Homeoboxes build the C. elegans nervous system Oliver Hobert - Columbia University, USA
14:00-14:15	Uncovering Eminens neurons ontogeny and function using single cell transcriptomics Laurence Lemaire - Princeton University, USA
14:15-14:30	Pioneer factor promiscuity requires co-factors to ensure faithful cell fate specification Moritz Mall - German Cancer Research Center, Germany
14:30-15:00	Mosaic evolution of cell types in the vertebrate brain Maria Antonietta Tosches - Max Planck Institute for Brain Research, Germany
15:00-15:30	Coffee Break
15:30-16:00	Diploblastic sea anemones have distinct cell types with signatures reminiscent of bilaterian muscle Ulrich Technau - University of Vienna, Austria

Time	Speaker
16:00-16:15	Neuronal Diversity in the Sea Urchin Larva at a Single Cell Resolution Periklis Paganos - Stazione Zoologica Anton Dohrn, Italy
16:15-16:30	Hypothalamic cell type diversity in surface and cave morphs of Astyanax mexicanus using single-cell RNA-seq Maxwell Shafer - University of Basel, Switzerland
16:30-16:45	Developmental diversification of inhibitory forebrain neurons Christian Mayer - Max Planck Institute of Neurobiology, Germany
16:45-17:15	Flash Talk Session I: #55, 63, 65, 67, 71, 79, 91, 93, 99
17:15-19:15	Poster Session I (odd numbers) with beer and snacks
19:15-20:00	Meet the Journal Editors Session in ATC Helix Seminar Room A01
19:15-21:00	Dinner in the EMBL Canteen
21:00-23:00	After Dinner Drinks in the ATC Rooftop Lounge

Day 3 - Friday 17 May 2019

Time	Speaker
09:00-12:00	Session 4 - The origins of cell types - evolution of multicellularity Chair: Nicole King
09:00-09:30	Light-regulated morphogenesis in a shape-shifting choanoflagellate Nicole King - University of California, Berkeley, USA
09:30-10:00	The evolutionary origin of synaptic signalling machinery and animal cell differentiation Pawel Burkhardt - University of Bergen, Norway
10:00-10:15	Evolutionarily conserved mechanisms governing branched cytoskeletal network growth in the aggregatively multicellular Rhizarian amoeba, Filoreta ramosa Sarah Guest - University of California, Davis, USA
10:15-10:30	Choanoflagellates and the origin of animal contractile cells Thibaut Brunet - HHMI-Janelia Research Campus /University of California, Berkeley, USA

Time	Speaker
10:30-11:00	Coffee Break
11:00-11:30	Cell types in unicellular relatives of animals Iñaki Ruiz-Trillo - Institut de Biologia Evolutiva, Spain
11:30-11:45	A parallel world of complex multicellularity: elucidating cell type evolution in social amoeba Koryu Kin - University of Dundee, UK
11:45-12:00	Sponges as a window into the evolutionary origin of stem cells Roger Revilla-i-Domingo - University of Vienna, Austria
12:00-13:30	Meet the speakers and Lunch
13:30-17:00	Session 5 - Cell type diversification in animal evolution Chair: Detlev Arendt
13:30-14:00	The cell tree of life Detlev Arendt - EMBL Heidelberg, Germany
14:00-14:30	Vertebrate electroreceptors: developmental and evolutionary relationships with mechanosensory hair cells Clare Baker - University of Cambridge, UK
14:30-14:45	Molecular and functional characterisation of blood cells in the priapulid <i>Priapulus caudatus</i> (ecdysozoa) Carmen Andrikou - University of Bergen, Norway
14:45-15:00	Great ape cerebral organoids reveal human-specific features of brain development Gray Camp - Institute of Molecular and Clinical Ophthalmology Basel, Switzerland
15:00-15:30	Coffee Break
15:30-16:00	Evolution of cell-type specific networks and their associated regulatory inputs Heather Marlow - Institute Pasteur, France
16:00-16:30	Tracking cell identity during development, regeneration and reprogramming Barbara Treutlein - ETH Zürich, Switzerland

Time	Speaker
16:30-16:45	Bilateral ciliary photoreceptors in sea urchin larvae express a partially conserved regulatory state Roberto Feuda - University of Bristol, UK
16:45-17:00	Single-cell RNAseq identifies neural elements in a sponge Jakob Musser - EMBL Heidelberg, Germany
17:00-17:30	Flash Talk Session II: # 46, 52, 58, 60, 62, 70, 80, 86, 88, 92
17:30-19:30	Poster Session II (even numbers) with beer and snacks
19:30-21:00	Conference Dinner in EMBL Canteen
21:00-00:00	Party in the ATC Foyer with "The Wright Thing"

Day 4 - Saturday 18 May 2019

Time	Speaker
09:00-11:45	Session 6 - Computational approaches to unravel single-cell gene regulatory networks Chair: Stein Aerts
09:00-09:30	Deciphering gene expression programs from scATAC-seq and scRNA-seq data Stein Aerts - KU Leuven, Belgium
09:30-09:45	Spatially resolved single-cell transcriptomics: identifying how position and cell-type specific programs are coupled Sébastien Bastide - Institut Pasteur, France
09:45-10:00	Reference-free comparative single-cell transcriptomics Olga Botvinnik - Chan Zuckerberg Biohub, USA
10:00-10:15	Are cell type transcriptional profiles replicable across species? Maggie Crow - Cold Spring Harbor Laboratory, USA
10:15-10:45	Coffee Break
10:45-11:15	Cong Liang - Tianjin University, China

Time	Speaker
11:15-11:45	Mapping and comparing transcriptional spaces of whole organisms robustly using Metacells Amos Tanay - Weizmann Institute of Science, Israel
11:45-12:15	Panel Discussion and Closing Remarks
12:00	Packed Lunches & Shuttle to Downtown
12:15	Packed Lunches & Shuttle to Frankfurt Airport/Downtown