
Sunday 17 March 2019

12:00 - 13:30	Arrival and Registration ATC Registration Desk	
13:30 - 13:45	Opening Remarks ATC Auditorium	
13:45 - 18:40	Session 1 - Artificial cell/Tissue Chair: Stefano De Renzi ATC Auditorium	
13:45 - 14:20	Programming the formation of synthetic tissues Wendell A Lim <i>University of California, San Francisco; Howard Hughes Medical Institute, United States of America</i>	1
14:20 - 14:55	Engineering tissue architecture through microfabrication and polymer engineering Milica Radisic <i>University of Toronto, Canada</i>	2
14:55 - 15:10	Building the human embryo in vitro: one step at a time Marta Shahbazi <i>University of Cambridge, United Kingdom</i>	3
15:10 - 15:40	Coffee Break and Meet the Speakers ATC Auditorium Foyer	
15:40 - 16:15	Synthetic cellularity Dora Tang <i>Max Planck Institute of Molecular Cell Biology and Genetics, Germany</i>	4
16:15 - 16:30	Blue light switchable cell-cell interactions provide reversible and spatiotemporal control towards bottom-up tissue engineering Seraphine Wegner <i>Max Planck Institute for Polymer Research, Germany</i>	5

- 16:30 - 17:05 **Making. Tissues. Function. How simple is complex enough?** 6
Christopher Chen
Boston University; Harvard Wyss Institute for Biologically Inspired Engineering, United States of America
- 17:05 - 17:35 **Coffee Break**
ATC Auditorium Foyer
- 17:35 - 17:50 **Theoretical tool bridging cell polarities with development of robust morphologies** 7
Silas Boye Nissen
University of Copenhagen, Denmark
- 17:50 - 18:05 **Changes in gene expression shift and switch genetic interactions** 8
Xianghua Li
Centre for Genomic Regulation, Spain
- 18:05 - 18:40 **Morphogenesis in evolved systems** 9
Buzz Baum
University College London, United Kingdom
- 18:40 - 20:10 **Dinner**
EMBL Canteen
- 20:10 - 21:30 **Welcome Reception with Live Music by Blue Note Jazz Duo**
ATC Rooftop Lounge

Monday 18 March 2019

09:35 - 12:05	Session 2 - Patterning and self-organisation Chair: Wendell Lim ATC Auditorium	
09:00 - 09:35	Speaker cancelled	10
09:35 - 10:10	Coordination of progenitor specification and growth in the developing spinal cord Anna Kicheva <i>Institute of Science and Technology Austria, Austria</i>	11
10:10 - 10:25	Pattern formation by multi-species bacterial colonies with programmed population-to-population interactions Jiandong Huang <i>The University of Hong Kong, Hong Kong</i>	12
10:25 - 10:55	Coffee Break and Meet the Editors ATC Auditorium Foyer	
10:55 - 11:30	From circuits to organs: towards a dynamic computer simulation of limb development James Sharpe <i>EMBL Barcelona, Spain</i>	13
11:30 - 12:05	Mechanisms underlying robust tissue behavior in changing environments Darren Gilmour <i>University of Zurich, Switzerland</i>	14
12:05 - 14:10	Lunch and Meet the Speakers ATC Auditorium Foyer	
14:10 - 17:05	Session 3 - Gene expression dynamics/Gene circuits Chair: Miki Ebisuya ATC Auditorium	

13:35 - 14:10	Speaker cancelled	15
14:10 - 14:45	Visualizing morphogen shuttling in the early <i>Drosophila</i> embryo Naama Barkai <i>Weizmann Institute of Science, Israel</i>	16
14:45 - 15:00	An ab-initio derivation of the <i>Drosophila</i> gap gene system from an optimization principle Thomas R Sokolowski <i>Institute for Science and Technology Austria, Austria</i>	17
15:00 - 15:30	Coffee Break ATC Auditorium Foyer	
15:30 - 16:05	Decoding development: from gene regulatory structure to function Justin Crocker <i>EMBL Heidelberg, Germany</i>	18
16:05 - 16:40	Coupling gene circuits through tissue polarity to achieve adaptive tissue responses Veronica A Grieneisen <i>Cardiff University, United Kingdom</i>	19
16:40 - 17:05	Flash Talks Session I (#39, 41, 51, 53, 65, 71, 75, 79) ATC Auditorium	
17:05 - 19:05	Poster Session I (odd numbers) ATC Helix A	
19:05 - 20:35	Dinner EMBL Canteen	
20:35 - 22:00	After Dinner Drinks ATC Rooftop Lounge	

Tuesday 19 March 2019

09:00 - 12:00	Session 4 - Organoids Chair: Anna Kicheva ATC Auditorium	
09:00 - 09:35	Hepatic organoids for the understanding of liver regeneration and disease Meritxell Huch <i>University of Cambridge, United Kingdom</i>	20
09:35 - 10:10	The genetic blueprint of the mammalian embryo: a synthetic approach Alfonso Martinez Arias <i>University of Cambridge, United Kingdom</i>	21
10:10 - 10:25	Blastoids: blastocyst-like structures generated solely from stem cells Nicolas C Rivron <i>Hubrecht Institute and MERLN, The Netherlands</i>	22
10:25 - 10:55	Coffee Break and Meet the Editors ATC Auditorium Foyer	
10:55 - 11:10	Dissecting human-specific brain development by studying single cell expression dynamics of great ape cerebral organoids Sabina Kanton <i>Max Planck Institute for Evolutionary Anthropology, Germany</i>	23
11:10 - 11:25	Human time vs. mouse time with in vitro segmentation clock Miki Ebisuya <i>EMBL Barcelona, Spain; RIKEN BDR, Japan</i>	24
11:25 - 12:00	Scrutinizing organoid formation to understand the principles of organogenesis: the pancreas example Anne Grapin-Botton <i>DanStem; University of Copenhagen, Denmark</i>	25

12:00 - 13:30	Lunch and Meet the Speakers ATC Auditorium Foyer	
13:30 - 16:40	Session 5 - Mechanics Chair: Veronica Grieneisen ATC Auditorium	
13:30 - 14:05	Energy dissipation by molecular motors Manuel Théry <i>Hôpital Saint-Louis, France</i>	26
14:05 - 14:20	Topological transitions of epithelial surfaces Keisuke Ishihara <i>Max Planck Institute of Molecular Cell Biology and Genetics, Germany</i>	27
14:20 - 14:55	Sequential bottom-up assembly of synthetic cells Joachim Spatz <i>Max Planck Institute for Medical Research, Germany</i>	28
14:55 - 15:25	Coffee Break ATC Auditorium Foyer	
15:25 - 15:40	Assembly of lung progenitors into developmentally-relevant tube structures drives differentiation patterning via cellular tension Alison P McGuigan <i>University of Toronto, Canada</i>	29
15:40 - 16:15	Endogenous bioelectric circuits: morphological computation in real and synthetic organisms Michael Levin <i>Tufts University, United States of America</i>	30
16:15 - 16:40	Flash Talks Session II (# 38, 52, 58, 60, 72, 85, 86, 87) ATC Auditorium	
16:40 - 18:40	Poster Session II (even numbers) ATC Helix A	

Programme

18:40 - 20:40 **Conference Dinner**
EMBL Canteen

20:40 - 00:00 **Conference Party with Live Music by DJ Jenz**
ATC Rooftop Lounge

Wednesday 20 March 2019

09:00 - 12:20	Session 6 - Controlling tissues Chair: James Sharpe ATC Auditorium	
09:00 - 09:35	Optogenetic-guided tissue morphogenesis Stefano De Renzi <i>EMBL Heidelberg, Germany</i>	31
09:35 - 10:10	Circuits and devices for real-time control of cellular systems Mustafa Khammash <i>ETH Zurich, Switzerland</i>	32
10:10 - 10:25	Thermal activation of gene expression in 3D printed tissues Daniel Corbett <i>University of Washington, United States of America</i>	33
10:25 - 10:55	Coffee Break and Meet the Speakers ATC Auditorium Foyer	
10:55 - 11:10	ESC differentiation on micro-patterned substrate to study Antero-Posterior axis formation in mouse and human Benoit Sorre <i>Laboratoire Matière et Systèmes Complexes - CNRS - Paris Diderot University, France</i>	34
11:10 - 11:45	Building tissues to understand how tissues build themselves Zev J Gartner <i>University of California, San Francisco, United States of America</i>	35
11:45 - 12:20	Mammalian synthetic biology: foundations and applications to programmable organoids Ron Weiss <i>Massachusetts Institute of Technology, United States of America</i>	36

12:20 - 12:35 **Closing Remarks and Poster Prize**
ATC Auditorium

12:35 **Packed Lunch and Departure**
ATC Auditorium 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.