

PROGRAM

REVERSE ENGINEERING THE DEVELOPING BRAIN, CAMPUS BIOTECH, GENEVA, SEPT. 18TH-20TH

■ Progenitors and Stem Cells ■ Genes and Diversity ■ Cells and Circuits ■ Organoids and Technologies

Monday, September 18th

11:00-12:45 **Registration and light lunch**

12:45-12:55 **Welcome address**

12:55-15:00 **Session 1: Chairperson: Colette Dehay, INSERM Lyon**

12:55-13:30 ■ Pierre Vanderhaeghen, *From pluripotent stem cells to cortical circuits*

13:30-14:05 ■ Oliver Hobert, *Reprogramming neuronal identity in C.elegans*

14:05-14:40 ■ Gordon Shepherd, *Synaptic circuit organization of neocortex: a motor cortex perspective*

14:40-15:00 ■ Short Talk #1: Gray Camp, MPI Leipzig, *Reconstructing uniquely human brain development with single-cell transcriptomics*

15:00-15:40 **Coffee Break**

15:40-17:30 **Session 2: Chairperson: Matthias Lutolf, EPFL**

15:40-16:15 ■ David Schaffer, *Molecular elucidation and engineering of stem cell fate decisions*

16:15-16:50 ■ Guo-Li Ming, *Engineering brain region specific organoids and disease modelling*

16:50-17:10 ■ Short Talk #2: Boyan Bonev, Institute of Neuroscience Montpellier, *Multi-scale 3D genome rewiring during cortical development*

17:10-17:30 ■ Short Talk #3: Katrin Gerstmann, INSERM Lyon, *Cerebrospinal fluid-derived Semaphorins regulate the cell cycle kinetics and adhesive properties of cortical progenitor cells in the developing brain*

17:30-19:30 **Poster Session**

20:00 **Invited Speakers' Dinner at La Perle du Lac**

Tuesday, September 19th

08:40-10:25 **Session 3: Chairperson: Gaia Novarino, IST Vienna**

08:40-09:15 ■ Jeff Macklis, *Growth cone molecular machinery that implements subtype-specific brain wiring*

09:15-09:50 ■ Alexandre Dayer, *Serotonin and cortical interneuron subtype development*

09:50-10:25 ■ Matthias Lutolf, *Engineering stem cell self-organisation*

10:25-10:45 **Coffee Break**

10:45-13:10 **Session 4: Chairperson: Laurent Nguyen, GIGA Liège**

10:45-11:05 ■ Sponsored presentation: Marc Lynch, Fluidigm Corp., *Using single-cell omics to analyze neuronal cell diversity and characterization*

11:05-11:40 ■ Ed Lein, *Reverse Engineering the human cortical microcircuit*

11:40-12:15 ■ Gord Fishel, *The environmental and genetic origins of GABAergic diversity in the forebrain*

12:15-12:50 ■ Denis Jabaudon, *Fate and freedom in the developing neocortex*

12:50-13:10 ■ Short Talk #4: Morgane Thion, Ecole Normale Supérieure Paris, *Microbiome influences prenatal and adult microglia in a sex-specific manner*

13:10-15:00 Lunch and Posters

15:00-16:45 Session 5: Chairperson: Guo-Li Ming, John Hopkins University

15:00-15:35 ■ Simon Hippenmeyer, *Molecular mechanisms of neural stem cell lineage progression*

15:35-16:10 ■ Colette Dehay, *Proliferation, lineage characteristics and migration properties of primate cortical neurons*

16:10-16:45 ■ Laurent N'Guyen, *Zika virus-associated microcephaly is caused by stress-induced unfolded protein response*

16:45-17:05 Coffee Break

17:05-18:50 Session 6: Chairperson: Alexandre Dayer, Geneva University

17:05-17:40 ■ Oscar Marin, *New insights into the organisation of the cerebral cortex through lineage analyses*

17:40-18:15 ■ Simona Lodato, *Molecular mechanisms of microcircuit assembly in the cerebral cortex*

18:15-18:50 ■ Victor Borrell, *Genetic regulation of cerebral cortex size and folding*

18:50-19:10 ■ Short Talk #5: Short Talk #5: Tom Nowakowski, UCSF, *Single cell transcriptomics reveals developmental hierarchies of the human forebrain*

19:30 Aperó riche, Maison de la Paix

Wednesday, September 20th

08:40-10:15 Session 7: Chairperson: Simona Lodato, Humanitas Institute Milan

08:40-09:15 ■ Silvia Cappello, *Dissecting molecular and cellular characteristics of human migrating neurons*

09:15-09:50 ■ Theo Karayannis, *Development of cortical inhibition*

09:50-10:25 ■ Gaia Novarino, *Studying autism-associated chromatin remodellers in human cerebral organoids*

10:25-10:45 Coffee Break

10:45-12:50 Session 8: Chairperson: Simon Hippenmeyer, IST Vienna

10:45-11:05 ■ Short Talk #6, Vibhu Sahni, Harvard University, *Development of corticospinal segmental connectivity: Implications for organization of motor control circuitry and motor neuron disease.*

11:05-11:40 ■ Guillermina López-Bendito, *Thalamic calcium waves regulate the development and plasticity of sensory cortical maps*

11:40-12:15 ■ Madeline Lancaster, *Examining human neural development and migration in cerebral organoids*

12:15 Conclusion words and Farewell aperó