

6 March, Rolex Forum

## Program

- 8:30-9:00 welcome coffee
- 9:00-9:30 **General Assembly**  
Anna Fontcuberta/ Marco Cantoni
- 09:30-10:30 **Dr. Adrian Wanner**, CV Starr Fellow at Princeton University  
Large-scale functional connectomics for a mechanistic description of fundamental computations in neuronal circuits  
  
Neuronal computations underlying higher brain functions depend on synaptic interactions among specific neurons. A mechanistic understanding of such computations requires wiring diagrams of neuronal networks. We examined how the olfactory bulb (OB) performs 'whitening', a fundamental computation that decorrelates activity patterns and supports their classification by memory networks. We measured odour-evoked activity in the OB of a zebrafish larva and subsequently reconstructed the complete wiring diagram by volumetric electron microscopy. The resulting functional connectome revealed an over-representation of multisynaptic connectivity motifs that mediate reciprocal inhibition between neurons with similar tuning. This connectivity suppressed redundant responses and was necessary and sufficient to reproduce whitening in simulations. Hence, whitening of sensory input in the OB depends on an evolutionary memory of stimulus space that is contained in the higher-order structure of the wiring diagram.
- 10:30-11:00 Coffee
- 11:00-11:30 **Prof. Henning Stahlberg EPFL**, Laboratory of Biological Electron Microscopy  
Electron cryo-microscopy (cryo-EM) in the DIC.
- 11:30-11:45 **Dr. Christel Genoud**, FMI Basel  
EM Platform UNIL
- 11:45-12:00 **Dr. Cosmin Sandu**, CIME  
Impact of negative bias on the incidence of ab-normal oriented grains in Al<sub>0.62</sub>Sc<sub>0.38</sub>N thin films
- 12:00-12:15 **Dr. Barbora Bartova**, CIME and ENAC-IIE-EML  
Uranium reduction by magnetite – mechanism of UO<sub>2</sub> formation monitored by STEM, SAED and TEM-EELS
- 12:15-14:00 standing lunch and poster session
- 14:00-15:00 **Dr. Victor Boureau**, CIME  
Quantitative fields mapping by off-axis electron holography and pixelated STEM  
**3-4 contributed poster presentations**
- 15:00-15:15 Announcement of best posters

Please register until February 27<sup>th</sup> (necessary for lunch)  
with "registration" in the subject: [christine.kupper@epfl.ch](mailto:christine.kupper@epfl.ch)