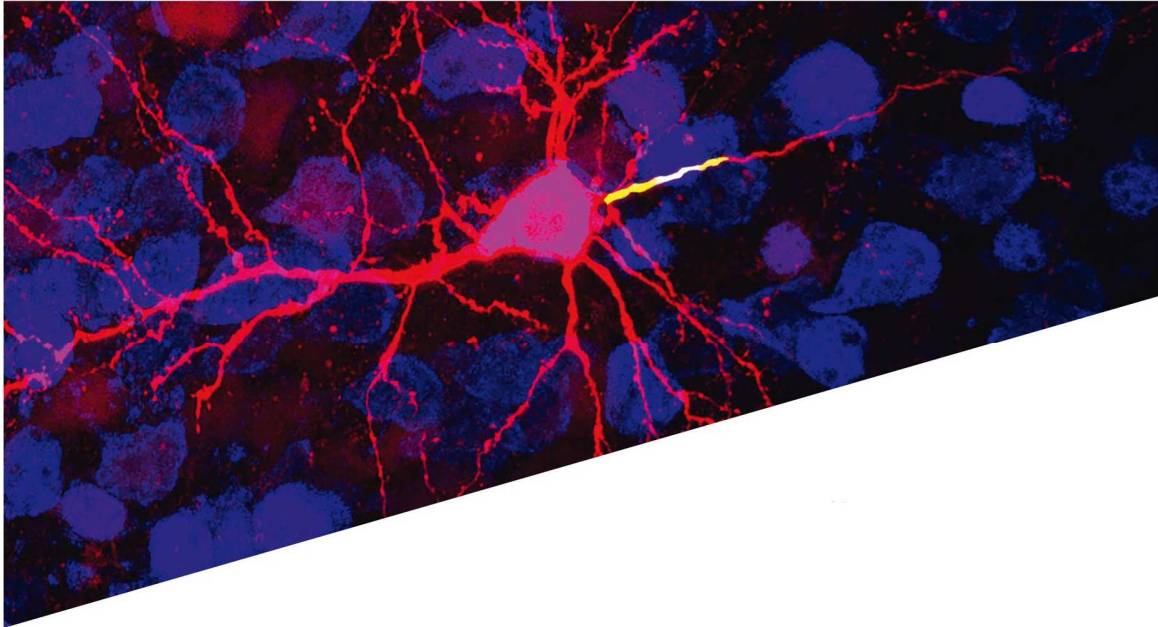


Axons in the hills

October 4/5, 2018

Heidelberg University, Marsilius-Kolleg



Conference Program

Conference Sponsors:



Funded by the German Research Foundation (DFG) and the Collaborative Research Consortium SFB 1134

Thursday, October 4, 2018

- 9:00 – 9:30 Arrival & registration
9:30 – 9:45 Welcome & opening remarks
- 9:45 – 10:45 **Keynote lecture** **Matthew Rasband, Baylor College of Medicine, Houston, TX, USA**
A molecular dissection of the axon initial segment

Session 1: Molecular organization of axons

- 10:45 – 11:15 **Dominique Debanne, Aix-Marseille University, Marseille, France**
Axonal sodium channels and context-dependent modulation of synaptic transmission
- 11:15 – 11:45 **Juan José Garrido, Cajal Institute, Madrid, Spain**
Role of membrane receptors in development and modulation of the axon initial segment
- 11:45 – 12:00 **Elisa D'Este, MPI for Medical Research, Heidelberg, Germany**
Nanoscale organization of the axonal cytoskeleton and channels
- 12:00 – 1:30 Lunch break & discussions

Session 2: Ion channels

- 1:30 – 2:00 **Ilya Fleidervish, Ben-Gurion University of the Negev, Israel**
Role of sodium channel subtypes in action potential generation by cortical pyramidal neurons
- 2:00 – 2:30 **Johan Storm, University of Oslo, Oslo, Norway**
Kv7/M-current functions in axons: resonance and filtering of plateau potentials
- 2:30 – 2:45 **Hua Hu, University of Oslo, Oslo, Norway**
Subcellular distribution and function of HCN channels in hippocampal parvalbumin-expressing interneurons
- 2:45 – 3:30 Coffee break & discussions

Session 3: Axonal plasticity

- 3:30 – 4:00 **Hiroshi Kuba, Nagoya University, Japan**
Tuning of axon initial segment in auditory circuits during development
- 4:00 – 4:30 **Hanne Berger Rasmussen, University of Copenhagen, Denmark**
Regulation of axon initial segment ion channels by neuronal activity
- 4:30 – 4:45 **Winnie Wefelmeyer, King's College London, London, UK**
The emergence and plasticity of synapses at the axon initial segment
- 4:45 – 5:30 **Focus lecture** **Péter Somogyi, University of Oxford, UK**
Cortical axo-axonic cells in brain time and space
- 5:30 – 8:30 Poster session & dinner

Friday, October 5, 2018

8:30 – 9:00 Arrival & coffee

Session 4: Axonal neuromodulation

- 9:00 – 9:30 **Kevin Bender, UC San Francisco, CA, USA**
New insight into the neuromodulation of transmitter release
- 9:30 – 10:00 **Yousheng Shu, Beijing Normal University, Beijing, China**
Regulation of action potential waveform by axonal neurotransmitter receptors
- 10:00 – 10:30 **Stefan Hallermann, University of Leipzig, Leipzig, Germany**
Neuromodulation of hyperpolarization-activated currents controls action potential propagation in central axons
- 10:30 – 11:30 Industry presentations & Coffee break

Session 5: Axons and disease

- 11:30 – 12:00 **Jeffrey Dupree, VCU School of Medicine, Richmond, VA, USA**
Loss of axon initial segment integrity in inflammatory disease
- 12:00 – 12:30 **Jun Hee Kim, University of Texas, San Antonio, TX, USA**
Effects of myelination and sound-evoked activity on structural development of auditory axons in the CNS
- 12:30 – 12:45 **Andrew Nelson, University of Michigan, Ann Arbor, MI, USA**
A rare variant in *ANK3* in a family with bipolar disorder leads to altered forebrain circuitry
- 12:45 – 1:00 **Mohit Dubey, Netherlands Institute for Neuroscience, Amsterdam, NL**
Dissecting the functional roles of parvalbumin interneuron axon myelination
- 1:00 – 2:15 Lunch break & discussions

Session 6: Axons and networks

- 2:15 – 2:45 **Beverley Clark, University College London, London, UK**
Impact of axonal properties on action potential output
- 2:45 – 3:15 **Tatjana Tchumatchenko, MPI for Brain Research, Frankfurt am Main, Germany**
Shaping network dynamics via individual neurons
- 3:15 – 3:45 Coffee break & discussions
- 3:45 – 4:45 **Keynote lecture Peter Jonas, Institute of Science and Technology, Klosterneuburg, Austria**
Functional properties of interneural axons
- 4:45 – 5:00 Closing remarks & End of conference