Cycle B: Neuroscience

Coordinator:
Neuroscience Network Basel: S. Grumbacher, C. Alioth
For details see http://www.neuronetwork.unibas.ch/

The lecture series provides basic knowledge in neurosciences. All the graduate students who aim to obtain a Ph.D. in neurobiology are asked to attend these lectures. In each semester one particular topic from developmental to clinical aspects of neuroscience is covered. Lectures include a general introduction into the topic as well as a discussion of the latest publications and results in the field. Lectures are organized by experts from the University of Basel, the University Hospital, the Friedrich Miescher Institute and from industry.

B1: Developmental Neuroscience - 14467
(2 hrs/week; 2 CP; Fall 2019)
S. Arber, F. Rijli

Neurogenesis / mechanisms of neuronal circuit assembly / patterning / axon guidance / synaptogenesis / refinement of synaptic connections / development of visual, olfactory, peripheral, motor and somatosensory system / neurotrophins / stem cells.

B2: Signaling in the Nervous System - 13693
(2 hrs/week; 2 CP; Spring 2018)
A. Lüthi, T. Rinaldi Barkat

Neuronal cell biology / excitability and ion channels / neurotransmitter release / postsynaptic organization / ionotropic and metabotropic neurotransmitter receptors / synaptic transmission / dendritic integration / synaptic plasticity / receptor trafficking / methods in electrophysiology and synaptic imaging / drug induced synaptic plasticity / genetic analysis of synaptic plasticity.

Program for 2018

B3: Genes and Behavior – 13145
(2 hrs/week; 2 CP, Fall 2018)
J. Kapfhammer, G. Keller

Sensory circuits and encoding of sensory information / Motor control / Vision / Cortical processing and function / Developmental and adult learning / Emotion, fear, decision making, consciousness / From genes to behavior and from behavior to genes.
**B4: Neurological Diseases - 12416**  
(2 hrs/week; 2 CP; Spring 2019)  
J.-L. Boulay, St. Frank, J. Kapfhammer, M.E. Liechti, Ph. A. Lyrer, L. Mariani,  
T. Rinaldi Barkat, St. Rüegg, **N. Schaeren-Wiemers**, V. Taylor  
Depression / Prion Disease, Epilepsy / Mitochondria and Neurodegeneration / Hearing  
Impairment / Drug Addiction / Brain Tumors / Multiple Sclerosis / Childhood Ischemia / Cord  
Injury / Huntington’s Disease / Stem Cells.

**B5: Neurex / FS2018 – 12417 / HS2018 – 52262**  
(1 CP/workshop, every semester)  
**F. Doetsch**, P. Piguet (Coordinator NEUREX), and lecturers of the trinational Neuroscience  
Network (Basel, Freiburg, Strasbourg)  
The workshops consist of regular tri-national events, and include both theoretical and  
practical teaching in all aspects of Neuroscience. Workshops are organized in the context of  
the Neuro Campus Project of the Neurex Network, and involve teachers-scientists, as well as  
students from the three Universities of Basel, Freiburg (Germany) and Strasbourg (France).  
The Neurex workshops are open to students, junior and senior scientists of the Universities  
of Basel, Freiburg (D) and Strasbourg (F). Most of the workshops take place in one of the  
three above-cited cities. The topics addressed are diverse and cover all aspects of  
neuroscience, from fundamental to clinical research, from the molecular level to systems  
neuroscience and behavioral studies. A list of ongoing and past events is available on  
www.neurex.org in the section “Events to come”. If you create a Neurex account, you will  
automatically receive updates on newly added workshops and events.  
Please note: industrial visits offered do not count into the credit point system.  
1 CP is granted for each workshop that lasts 2 days, or for two one-day workshops in the  
same semester. Please make to register for all workshops on www.neurex.org.