

**Preliminary Program for the upcoming workshops in Mainz and Frankfurt (04. – 08. June 2018) offered by the SPP 1665 and SPP 2041**

**Experimental Workshop: „A Practical Roadmap to Optogenetics”**

Date: 04. - 06. June 2018, 9h00 – 17h00

Location: Johannes-Gutenberg-Universität Mainz, Hanns-Dieter-Hüsch-Weg 19, 55128 Mainz

Participation number: max. 15 (3 groups a 5)

Organizer: Albrecht Stroh (SPP 1665)

Description: This course will offer an introduction to state-of-the-art optogenetics techniques applied in rodent models, as well as direct hands-on practical experience. The course will follow the work flow of an optogenetics experiment: starting with viral transduction, evaluating opsin expression, stimulation paradigms, and readouts.

Registration:

<https://www.guestlist-online.com/eventlist/experimental-workshop-mainz-4th-june-2018-at-0900>

**Analytical Workshop: “Analyzing Network Structures and Neural Activity”**

Dates: 07. + 08. June 2018, 9h00 – 17h30

Location: Frankfurt Institute for Advanced Studies, Ruth-Moufang-Straße 1, 60438 Frankfurt am Main

Participation number: max. 30

Organizers: Gaby Schneider, Torfi Sigurdsson (both SPP 1665) and Jochen Triesch (SPP 2041)

Description: This course will teach computational and mathematical methods for analyzing the structure of brain networks at multiple scales and for analyzing neural activity.

Part 1: Understanding the Structure of Brain Networks (Thursday, 07.06., morning and early afternoon)

We will explore methods to analyze the structure of brain networks from microscopic networks of individual nerve cells to large scale connection patterns between whole brain areas. Speakers: Felix Hoffmann, Simachew Mengiste and Jochen Triesch.

Part 2: Statistical analysis of neuronal spike trains (Thursday, 07.06., late afternoon and Friday, 08.06., morning)

This part will cover descriptive spike train statistics, stationary spike train models and descriptions of nonstationary spike trains. Classification of spiking patterns such as bursts and pauses and measures for coordination of patterns in parallel processes will be discussed. We will also investigate changes in the firing rate or in the variability of spiking patterns. Speakers: Michael Messer and Gaby Schneider.

Part 3: Analysis of neuronal coordination (Friday, 08.06, afternoon).

Neural activity in different brain regions is frequently coordinated in time. We will discuss the main approaches for examining such coordination, based both on neuronal spiking as well as local field potentials. Examples of practical applications of these methods in neuroscience experiments will also be given and discussed. Speaker: Torfi Sigurdsson.

Registration:

<https://www.guestlist-online.com/eventlist/analytical-workshop-2018-7th-june-2018-at-0900>