SPP 1926
Next Generation Optogenetics

SPP1926 imaging / optogenetics workshop offers in 2017:

20.03.2017

NOTE: Please register with the P.I. offering the respective workshop (by e-mail), until 31st March 2017, on a first-come-first-serve basis! Workshops will only be conducted given sufficient demand.

Lab/PI	Topic	Time-frame	Partici pants	Content
Di Ventura (Heidelberg) (barbara.diventura@bioquant.uni-heidelberg.de)	translocation experiments (with LINuS and/or LEXY) in cells in culture	**19.-21. 07. 2017**	2-4	Some theoretical introduction on the LOV domain, the engineering concepts behind LINuS and LEXY on the first day. Cell transfection (in HEK cells), then experiments at the microscope at day 2 and data processing & discussion on day 3.
Gottschalk (Frankfurt) (a.gottschalk@em.uni-frankfurt.de)	Optogenetics in *C. elegans* (Ca^{2+} imaging and behavior)	**11.-13. 09. 2017**	4-6	Theory and practice of optogenetic stimulation of *C. elegans* neurons and muscle cells, combined with Ca^{2+} or cGMP imaging in immobilized or free moving worms. Selective multicolor illumination of parts of the *C. elegans* body in free-moving animals. Multi-worm tracking and photostimulation.
Lehnart (Göttingen) / **T. Kohl** (Tobias.Kohl@med.uni-goettingen.de)	STED workshop	**6. - 7. 9. 2017**	3-6	Topics - introduction / principle of STED-microscopy - practical demonstrations / hands-on microscope - requested topics Contents (will be adapted to participants' interests based on a questionnaire) - labeling strategies - live labeling / multi-colour application - STED-image interpretation & data-analysis
Sasse / Brügmann (philipp.sasse@uni-bonn.de)	Combination of Ca^{2+} imaging and optogentic control in cardiomyocytes and HEK293 cells *in vitro*	**23.-24. 10. 2017**	4-8	Inquire P.I.
Soba (Hamburg) (peter.soba@zmnh.uni-hamburg.de)	optogenetic control of *Drosophila* behavior and *in vivo* calcium imaging in *Drosophila*	**31. 8 - 1. 9. 2017** (right after Wiegert workshop, see below)	2-4	**theory:** -general introduction to *Drosophila* genetics, circuits & behavior -introduction to optogenetic approaches in *Drosophila* -practical considerations of optogenetic experiments in *Drosophila* -introduction to *in vivo* calcium imaging in *Drosophila* -optogenetic inhibtion/activation of circuits in *Drosophila* **practical:** -optogenetic manipulation of *Drosophila* larval locomotion (inhibition, activation of motor and sensory neurons) -optogenetic manipulation of *Drosophila* nociceptive behavior (inhibition, activation of nociceptive circuit components)

				-in vivo Ca^{2+} imaging in semi-intact larval preparations using optogenetic activation/inhibition
Wachten (Bonn) (Dagmar.Wachten@caesar.de)	FRET-based Biosensors	**2.-3. 5. 2017**	2	Fluorescence spectroscopy and live-cell imaging with cAMP-based FRET Sensors in mammalian cells (heterologous expression in sperm)
Wiegert (Hamburg) (simon.wiegert@zmnh.uni-hamburg.de)	2-photon imaging incl. Optogenetics	**28.-30. 08. 2017** (right before Soba workshop, see above)	2-4	Inquire P.I.