Lecture: Methods in Life Sciences
Methods in Behavioral Physiology – Part Neuroethology
(Prof. Rössler)

You should be able to explain after this lecture:

- What is the basic organization of the olfactory system in insects?
- What is meant by quantitative neuroanatomy? How can it be achieved?
- Which steps are necessary to obtain the 3D reconstruction of a brain?
- What is molecular neuroanatomy (molecular imaging)?
- What is *in-situ* fluorescent neurotracing? How can it be applied to study neuronal circuits?
- How does *in-situ* calcium imaging work using bulk loading or injection of a calcium sensor? Explain the application together with general advantages / disadvantages of calcium imaging in living cells?
- How does multi-unit *in-situ* electrophysiology work? Explain the general principle together with advantages / disadvantages?
- Describe the proboscis-extension response experiment in the honeybee and how this behavioral assay allows analyzing learning and memory processes.