



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



CSC-Tübingen PhD Scholarship Program

2025/26 application round prospective PhD positions at the University of Tübingen

Faculty: Medical School

Institute / Section / Subject: Center for Integrative Neuroscience

Supervising Professor(s): Prof. Dr. rer. nat. Cornelius Schwarz

About the Supervisor(s): The lab is composed of neurophysiologists and cognitive neuroscientists, interested in brain function and dysfunction. Our focus is on neocortex and its connections. We have pioneered the head-fixed rodent preparation and use cutting edge methods of neuronal monitoring and perturbation. Multielectrode electrophysiology, cellular imaging, optogenetic combined with precise behavioral observation.

<https://www.cin.uni-tuebingen.de/research/research-groups/research-groups/schwarz-c-systems-neurophysiology/research-directions.html>

Specification: Neuronal bases of association learning

Topic Description: Association learning is to link several stimuli or actions in order to use them for useful behavior. A simple example is Pavlovian reflex conditioning, where an individual learns the temporal relationship of two events, one neutral and one generating a reflexive response, e.g. a tone and an air puff to the eye. The individual then learns to associate the formerly neutral tone to the behavior evoked by the air puff - an eyeblink. We will study the neuronal mechanisms, that are at the basis of such an association. Classical work indicates that the cerebellum is involved. In the proposed project we will investigate neocortical contributions, which come into play whenever memory functions are needed for successful association.

Required Degrees: Master in Life Science (Biology, Medicine, Medicine Technology)

Language Requirements: Fluent command of English

Notes: