

Bachelorarbeiten in der AG Schlaf, Kognition und Verhalten

The Research Group Neuroplasticity and Rhythms – Sleep, Cognition and Behavior is interested in the mechanisms of sleep-associated memory processes, in particular the interaction between brain electric rhythms and behavioral performance. For our projects we combine measurements of behavioral performance, cognitive ability and brain electric activity (EEG or local field potentials). We aim to interrogate neuronal activity in human subjects or rodents by applying weak electric fields (tDCS, o-tDCS, tACS), or sensory (auditory) stimulation, or by employing optogenetic manipulations, respectively.

We offer mostly experimental and data analytical thesis topics, but conducting surveys is an additional option.

A few examples of our topics for Bachelor and Master Thesis are:

- Topographically specific effect of weak electric stimulation on different types of memory
- The role of hippocampal-prefrontal communication in sleep dependent memory consolidation
- The role of auditory closed-loop stimulation on learning and memory consolidation
- Identifying electrophysiological biomarkers for tDCS efficiency
- Investigating optimal stimulation parameters for improving performance
- Investigating optimal stimulation parameters for modulating endogenous brain rhythms
- Development of improved algorithms for semi-automatic sleep scoring

For more information or questions, please contact Prof. Dr. Lisa Marshall:

Email: lisa.marshall@uni-luebeck.de

Tel.: 0451 3101 7223

And visit our website: <https://www.pharma.uni-luebeck.de/forschung/marshall-group.html>