

Ph.D. Position - Systems Neuroscience

Technical University of Munich

“Sleep and Memory Consolidation in Songbirds”

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- We are seeking a highly motivated Ph.D. student to research the interplay between sleep and memory consolidation in songbirds.
- The project combines electrophysiological, computational, and behavioral approaches.
- 3-years funding from DFG.



Project Description

Sleep has been described in animals ranging from worms to humans, yet the purpose of brain activity during sleep remains a mystery. One view, well supported by data, is that sleep benefits memory. In order to investigate ancestral functions of sleep in non-mammalian species, we will use the vocal learning paradigm of the songbird to examine the link between learning, sleep, and memory by using chronic electrophysiology, behavioral conditioning, and computational approaches.

Specifically, this student will build on her/his existing skills to

- 1) build and implant tetrode-mounted microdrives
- 2) monitor experiments and acquire electrophysiological and behavioral sleep data
- 3) develop analysis software to analyze large data sets
- 4) use and contribute to existing open source technologies by creatively solving problems and developing novel hardware and software solutions.

Required skills

- MSc or equivalent degree in computational neuroscience, electrical engineering, or biology with emphasis on neuroscience.
- Experience in the investigation of neural circuits using electrophysiological or behavioral approaches.
- Good computer skills (Unix, Windows) and proficiency in at least one programming language (e.g. MATLAB,).
- Strong analytical skills with a focus on quantitative methods, statistics, and signal processing.
- Highly motivated, able to work independently.
- Have very good English speaking and writing skills.

Our offer

- The doctoral candidate will be employed by TUM (65 % TV-L E13) for a total duration of three years (with possible extension).
- The student will benefit from ties to the LMU Munich, the MPI for Ornithology, the MPI for Brain Research, and the Institute of Neuroinformatics, Zurich.

Applications

send a pdf to janie.ondracek@tum.de including:

- 1) a curriculum vitae
- 2) certificates and transcripts of academic degrees
- 3) a letter of motivation detailing the applicant's research interests
- 4) a description of programming projects
- 5) contact information for at least 2 references.

Applications will be accepted until **October 15**, with the intention to hire by Dec. 2018.