

**Ph.D. position available**

**Project “Brain circuits and social factors regulating empathy in rodents: focus on dopamine and oxytocin”** in the group of Prof. Dr. Inga Neumann.

Empathy is an essential aspect for social behaviour and interactions in humans. It refers to the ability of recognizing and relating to the emotional states of others. It is generally followed by behavioural responses such as compassion, sympathy, and concern. The concept of emotional-state-matching refers to a behavioural response of an animal that observes a conspecific and, as a result, exhibits the same or comparable emotional state.

The neurobiological mechanisms underlying empathy are of major interest in translational clinical and cognitive research. For example, pathologies characterized by alterations in social behaviour and interactions, such as social anxiety disorder, could be associated with the loss of empathy. In this project, the PhD student will study the behavioural and neural correlates of empathy in mice, especially following the exposure to social stressors.

The PhD student will start by establishing a behavioural paradigm in order to elucidate whether mice are able to detect social fear from conspecifics. In addition, he/she will determine whether the social fear can be transmitted between mice, considering the sexual identity of the conspecific, the age, and the familiarity. At the molecular level, the PhD student will characterize the role of the dopaminergic signaling in regulating empathy. He/she will also explore the interaction of the dopaminergic system with the oxytocinergic system, which is known to be critically involved in regulating anxiety and stress responses.

Methods will include behavioural analyses combined with stereotaxic surgeries and pharmacology treatments (e.g. cannulas implantation, viral vector infusions), blood sampling and hormone analyses as well as various molecular techniques (e.g. immunohistochemistry, RNA scope, qRT-PCR, protein quantification by western-blotting), where appropriate.

**Estimated starting date:** May 2023

The position is funded for at least three years, according to the German pay scale TV-L E13 (65%). The project is part of the DFG Graduate Program “Neurobiology of Social and Emotional Dysfunctions” GRK 2174

**For application details please see our webpage:**

[www.uni-regensburg.de/research/grk-emotion/grk-home/index.html](http://www.uni-regensburg.de/research/grk-emotion/grk-home/index.html)

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