

# We are hiring!

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We are looking for two PhD students interested in the regulation of habit formation. Habits are useful to decrease cognitive load, but carry the risk of becoming stereotyped and hard to control – it's hard to shake a bad habit. The fruit fly *Drosophila* also forms habits and we have discovered two important circuits in the fly nervous system: the habits are formed in the motor system of the ventral nerve cord (DOI: [10.12688/f1000research.146347.2](https://doi.org/10.12688/f1000research.146347.2)), while a set of identified neurons in the brain decide how quickly the motor system forms the habit (DOI: [10.1016/j.cub.2009.06.014](https://doi.org/10.1016/j.cub.2009.06.014)). Each student will work on the input to one of the circuits. One will be supervised by Dr. Radostina Lyutova and find out how the brain circuits that control the motor system become activated during training. The other project is supervised by me (Prof. Dr. Björn Brembs) and will identify the neuronal pathway that the regulatory signal is taking from the brain to the ventral nerve cord. The overarching goal of the projects is to identify all the neurons involved in the regulation of habit formation, from brain to ventral nerve cord and to begin to understand how these circuits function.

### **The candidates:**

The ideal candidates have Master's degrees in a relevant field, experience in *Drosophila* husbandry and behavioral experiments as well as some coding proficiency. A solid command of the English language is also important. Some experience with connectome analysis would be helpful. As we will hire a pair of students, we will aim for complementary expertise in each student, such that they can learn from each other.

### **The positions:**

As is commonplace for Germany, this will be a DFG-funded three-year project. The PhD positions are two fully funded so-called 65% positions, i.e., about ~2k€/month after tax and with full health, unemployment, pension, etc. benefits, membership in our graduate schools and all the other usual bells and whistles that come with such a position in Germany. There are no lectures to attend or rotations to adhere to – just 100% of pure, unadulterated research fun. Besides behavioral experiments with wild type and transgenic animals, neurogenetic methods such as [trans-tango](#) and [retro-tango](#) will be central for this research. We will provide training in behavioral and neurogenetics experiments, confocal microscopy as well as open science.

### **Our research:**

Behavior needs to be flexible to be successful, but also efficient. However, flexibility is rarely efficient and efficiency usually entails a lack of flexibility. How is this trade-off between flexibility and efficiency achieved on the neurobiological level? We use a variety of transgenic tools, mathematical analyses, connectomics and behavioral physiology to understand the neurobiology of spontaneous behavior, learning and adaptive behavioral choice.

### **Our laboratory:**

We are an open science lab that prioritizes inclusion and diversity to achieve excellence in research and to foster an intellectual climate that is welcoming and nurturing. Rather than proclaiming to be competitive, we pride ourselves in being *cooperative*. We are based at the

[University of Regensburg](#), an equal opportunity employer with over 20,000 students and more than 1,500 faculty, in Regensburg, Bavaria, Germany. Regensburg is an incredibly nice city with a high quality of life. Affordable, safe, cultural, civil, great local food, and close to other great cities like Prague or Munich.

Please send your application with your CV and a short, one page letter of motivation to my institutional address ([bjoern.brembs@ur.de](mailto:bjoern.brembs@ur.de)). Applications will be considered until the position is filled, but applications before March 1, 2025 will receive preferential treatment.