

New open position starting Jan 1, 2019 or later

## PhD student in ‚Neuronal Control of Metabolism‘

### About us

The **ZIEL - Institute for Food & Health** is a Corporate Research Center of the Technical University of Munich in Freising, Germany, which operates at the interface between food science, nutrition research and medicine. ZIEL is committed to knowledge gain for the benefit of human health.

The new student will work in the lab of professor Dr. **Ilona Grunwald Kadow** whose research aim is to unravel the neuronal and genetic underpinnings of state-dependent sensory perception and behavior (see for instance Lewis et al., *Current Biology* 2015; Hussain et al., *PLoS Biology* 2016; Hussain et al., *eLife* 2018).

### Candidate Profile

We are looking for a highly motivated individual with prior experience in experimental biomedical sciences or related fields and an outstanding interest for fundamental questions regarding the interaction between the host nervous system, its internal organs and the microbiome. Good command of English is a must. Prior experience with mouse or fly genetics, behavioral analysis, statistical analysis, or molecular biology is a plus.

### Project Aims

A growing body of evidence suggests that the intestinal microbiome plays a critical role in the regulation of host health. While several mechanisms, including neural, humoral, immune, and metabolic pathways, have been implicated, there is now an urgent need to clearly define the molecular underpinnings of direct host-microbiota interactions in the gut and indirect effects on the rest of the host body and brain. Previous research in the fly model identified such mechanisms using gnotobiotic flies mono-associated with specific bacterial species. The aim of this project is to take advantage of *Drosophila melanogaster* as a genetic model to discover novel mechanisms underpinning host interactions with established mammalian pathobionts *Enterococcus faecalis*, *Escherichia coli*, *Bacteroides vulgatus*, which have previously been implicated in chronic inflammation of the large intestine. To this end, you will combine high-throughput genetic screening in the fly model with single bacteria and bacterial consortia to decipher the mechanisms underpinning pathogenic and putative protective mechanisms of host-microbiome interaction at the cellular level in the fly gut and nervous system, and at the organismic level using lifespan and behavioral analysis. You will work closely with the group of professor Dr. Dirk Haller (chair of nutrition and immunology) who will support this project with their expertise of the microbiome.

### We offer

- A fully funded PhD student position (salary scale TV-L E13/2) for 3 years with possible extension to finish the work.
- A great working environment at one of the top German universities in an international team using interdisciplinary approaches.

### Application

The Technical University of Munich is striving to increase the overall proportion of women on its staff and thus expressly urges qualified women to apply. Handicapped, equally qualified candidates are preferred.

To apply, please email the following to: neuro@wzw.tum.de until Dec 31, 2018 (ref. ZIEL application)

1. A curriculum vitae
2. A letter of motivation explaining your scientific interests, your strengths when working on a problem
3. Contact details for 2 referees
4. A written sample of scientific research, e.g. abstract of your master thesis

**Technical University of Munich**  
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