



## Postdoctoral and PhD Student Positions in Neuroscience and Cell Biology in Berlin

We are seeking to recruit several post-doctoral fellows and PhD students in the areas of molecular neuroscience and cell biology. The Haucke laboratory aims to understand how cellular membranes and membrane-enclosed compartments dynamically exchange materials between them and its implications for cell signaling in health and disease. Our main focus is on the endocytic and endolysosomal system that we study in genome-engineered cell lines and in nerve cells or tissue [recent publications: von Kleist et al (2011) *Cell* 146:471-484; Posor et al (2013) *Nature* 499: 233-237; Kononenko et al., (2014) *Neuron* 82: 981-988; Ketel et al., (2016) *Nature* 529: 408-412; Marat et al. (2017) *Science* 356: 968-972; Soykan et al (2017) *Neuron* 93: 854-866; Vukoja et al (2018) *Neuron* 99: 1216-1232; Lopez-Hernandez, T. et al (2020) *Nat Cell Biol* 22:815-27; Rizalar, Roosen, Haucke (2020) *Neuron*, advance online 23 Oct; doi:10.1016/j.neuron.2020.09.038; Kuijpers et al (2020) *Neuron* advance online 05 Nov; doi:10.1016/j.neuron.2020.10.005].

The current projects, which are supported by several recently acquired third-party grants including the European Research Council (ERC), focus on the following.

1) In a **molecular neuroscience project funded by the ERC** genome engineering in stem cell-derived neurons and genetically altered mice will be combined with proteomic, high-resolution imaging [see e.g. Lehmann et al (2019) *Science Adv.* 5: eaax5775] and systems biology approaches developed in the Haucke lab to identify the origin and composition of synaptic vesicle and active zone precursors, dissect the mechanisms of their axonal transport [see e.g. Vukoja et al (2018) *Neuron* 99, 1216-1232.e7; Rizalar, Roosen, Haucke (2020) *Neuron*, advance online 23 Oct; doi:10.1016/j.neuron.2020.09.038] and integration into developing synapses. The overall goal is to unravel the pathway that controls axonal transport and presynaptic assembly of newly made presynaptic proteins to set synaptic weight.

2) Further **molecular neuroscience and cell biology projects** tackle the question (i) how the endoplasmic reticulum and its contacts with other organelles regulate pre- and postsynaptic  $Ca^{2+}$  dynamics to control neuronal signaling and plasticity and (ii) how synaptic vesicle exocytosis and endocytic recycling are coupled at mammalian synapses [see e.g. Soykan et al (2017) *Neuron* 93: 854-866]. To this aim proteomic (in collaboration with our in-house proteomics group) and genetic approaches will be combined with advanced imaging (in collaboration with Dr. David Perrais, Bordeaux) and functional electrophysiological studies in cultured mammalian and human iPS-derived neurons.

3) Based on the recent discovery of a novel pathway that regulates the biogenesis of autophagosomes and lysosomes in response to cellular stress [Lopez-Hernandez, T. et al (2020) *Nat Cell Biol* 22:815-27], we now seek to explore in a **cell biology project funded by the DFG** how osmotic stress and other stimuli regulate exo-/ endocytosis to control the biogenesis and function of lysosomes and autophagosomes and how this may relate to human disease. To this aim we use a combination of CRISPR genome engineering, proteomics, live imaging as well as correlative light and electron microscopy approaches.

Candidates will also have the opportunity to refine their management skills by the design and supervision of student research projects (BSc and MSc), and will benefit from a broad variety of advanced training opportunities.

## **Qualifications**

We seek highly motivated, ambitious, and talented young scientists to join an enthusiastic and collaborative team in an outstanding scientific environment to perform research. Successful postdoc applicants will hold a Ph.D. in a relevant area (e.g. molecular biology, neuroscience, physiology, biochemistry) and have a strong track record of accomplishment. Postdoc candidates with proven interests and/ or experience in proteomics, microscopical imaging techniques (e.g. high-resolution light or electron microscopy) and/ or the use and application of stem cell-based neurons or brain organoids are especially encouraged to apply. PhD student candidates should have a master's degree in molecular biology, biochemistry, biophysics, or related fields. All applicants are expected to benefit from excellent written and oral communication skills and display a high personal motivation to excel in science. The working language is English; knowledge of the German language is not required.

## **Research Environment**

The Leibniz-Institut für Molekulare Pharmakologie (FMP) is a non-university research institute that conducts basic research in molecular pharmacology and provides a vibrant and collaborative environment with state-of-the-art facilities for research and employees from all over the world. The Haucke lab is embedded into the NeuroCure Cluster of Excellence (see: <http://www.neurocure.de/>), a collaborative framework program that combines leading researchers in neuroscience from various Berlin based institutions.

## **Are you interested?**

Then please submit your complete application documents, containing a one-page letter with a personal statement describing your scientific accomplishments and your interests in our laboratory, your CV and bibliography as well as, contact information for 3 references, in electronic form as one single pdf-file via e-mail to [haucke@fmp-berlin.de](mailto:haucke@fmp-berlin.de). Applications will be considered upon submission. The positions are available from 1 January 2021 (or later) and are based on contracts for the civil service (TVöD). They will be time limited for an initial period of two years with the possibility of extension up to five years.

For further information about the Institute and the Haucke department see [www.leibniz-fmp.de/haucke](http://www.leibniz-fmp.de/haucke).