



## PhD position on “Neural circuit mechanisms underlying colour vision”

A PhD position is available in the lab of Dr. Christopher Schnaitmann at the Institute of Developmental Biology and Neurobiology of the Johannes Gutenberg University in Mainz, Germany. In our research group, we analyse the microcircuitry of pathways in the visual system underlying colour vision in *Drosophila*. Using two-photon calcium imaging in neurons expressing genetically encoded calcium indicators in combination with a multi-spectral spatial stimulation adapted to the fly visual system, we analyse colour-processing cell types and reveal their spectral, spatial, and temporal response properties. Guided by connectomic and single cell RNAseq data of the fly visual system, we are genetically manipulating neural activity and gene expression in specific circuit elements. Thereby, we reveal how complex physiological properties of neurons like spatial receptive fields are shaped by the interaction of individual cell types and identify the underlying synaptic mechanisms. Furthermore, we conduct colour choice experiments combined with genetic perturbation of neural function to disclose the role of specific cell types in colour guided behaviour.

The advertised research project will focus on the function of gap junctions in visual processing and establish novel methods to efficiently reveal and manipulate electrical coupling between cells. These methods will be developed in close cooperation with Prof. Dr. Marion Silies and Prof. Dr. Carsten Duch (iDN).

Our lab is housed in the brand new JGU Biocentre, with a vibrant neuroscience community (<https://idn.biologie.uni-mainz.de>). We offer state of the art research facilities in a collegial and international environment. Applicants should have a strong interest in physiology, behavior, quantitative data analysis, or molecular biology, and hold a degree in neuroscience, biology, physics, or related disciplines. Please provide information why you are interested in joining our group, a CV and contact details for two referees to [cschnait@uni-mainz.de](mailto:cschnait@uni-mainz.de). The application deadline is Feb 28<sup>th</sup> 2022, or until a suitable candidate is found.

For more information, visit <https://schnaitmannlab.uni-mainz.de>.

### References:

Pagni, M., et al. (2021). Interaction of ‘chromatic’ and ‘achromatic’ circuits in color opponent processing. *Current Biology* 31, 1687-1698.e4

Schnaitmann, C., et al. (2018). Color Processing in the Early Visual System of *Drosophila*. *Cell* 172, 318–330.