



PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

Open PhD position at FUB for CSC scholarship candidates 2017

Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.

<u>Department/Institute:</u>	Department for Biology, Chemistry, Pharmacy/Institut für Biologie
<u>Subject area:</u>	Neuroscience
<u>Name of Supervisor:</u>	Prof. Dr. Ursula KOCH (Ms.)
<u>Number of open PhD positions:</u>	1
<u>Type of the PhD Study:</u>	Full-time
<u>Project title:</u>	Environmental factors influencing auditory processing in mice with FragileX Syndrome

PhD Project description:

My research group investigates the development and function of brain circuits that analyze our acoustic environment. Neurons in the auditory brainstem analyze sound patterns by integrating excitatory and inhibitory synaptic inputs with high temporal precision. Any disturbances of this highly precise interplay of excitation and inhibition may result in abnormal processing of sound information which can lead to hypersensitivity to loud stimuli and abnormal processing sound patterns such as speech sounds. Ultimately this may result in social interaction deficits or learning difficulties.

We are especially interested how the development of auditory brainstem and midbrain regions is influenced by genetic and environmental disturbances as e.g. in autism spectrum disorders such as fragile X syndrome. We have shown that in the Fragile X mouse model excitatory projections to the auditory brainstem display exaggerated sprouting resulting in an increased excitatory drive to auditory brainstem neurons. This results in enhanced activity these neurons in response to sound presentation and altered monaural and binaural processing (publication in review)

The prospective PhD student will study how the environment influences this developmental disturbance on the brainstem and midbrain level. This will be achieved using a variety of different techniques including whole cell patch-clamp electrophysiological recordings from neurons in the acute brain slice preparation, in vivo extracellular recordings in response to sound stimulation and immunohistochemical and molecular biological techniques.

We are looking for a highly motivated PhD candidate with a background in neuroscience or biophysics. Experience with electrophysiological techniques and handling of animals is advantageous.

Language requirements:

English certificate requirements IELTS 6,5 or TOEFL 95 ibt.

Academic requirements:

Master in Biology, Biotechnology, Biophysics

Information of the professor or research group leader:

http://www.bcp.fu-berlin.de/en/biologie/arbeitsgruppen/neurobiologie_verhalten/ag_koch/index.html

Please note:

In a first step the complete application should be submitted to the Beijing Office for evaluation by January 4th, 2017. Please don't contact the professor before. He/She will get in contact with you after having received the complete application in January.