



The Institute for Auditory Neuroscience of the University Medical Center Göttingen (Germany) invites applications for a

## PhD-Student Position in Synaptic Neuroscience

Mammalian sound encoding relies on faithful and precise neurotransmission between cochlear inner hair cells (IHC) and afferent spiral ganglion neurons. To master this challenging task, the presynaptic active zones of IHCs are equipped with presynaptic specializations –termed 'synaptic ribbons' – that facilitate high rates of vesicular release and subsequent replenishment, even during prolonged periods of ongoing stimulation. While the molecular architecture and function of ribbon-type active zones has been an area of intense research, the presynaptic development prior to hearing onset still remains largely enigmatic. Hence, this project will focus on developmental aspects of IHC pre-synaptogenesis in auditory hair cells and aims to identify the key molecules, as well as the underlying cellular processes that determine the functional maturation and presynaptic plasticity of this high-throughput synapse.

The successful candidate will be tightly integrated within the Institute for Auditory Neuroscience (University Medical Center) and the III. Physical Institute (Georg August University). The project will employ various gene manipulation approaches in combination with electrophysiology, optogenetics and advanced light-microscopic imaging techniques (e.g. live-cell wide-field, confocal and stimulated emission depletion [STED] microscopy) to decipher molecular determinants of presynaptic active zone formation and maturation in acutely dissected or cultured mammalian inner ear preparations.

We are looking for highly motivated applicants with a strong background in neuroscience and/or live-cell imaging; additional experience in molecular biology or programming skills are of advantage. Moreover, the ability to work in an interdisciplinary (i.e. combining molecular, ultrastructural and physiological approaches) and international research team is an essential prerequisite. This position is supported by a DFG Grant (Collaborative Research Center 889) and the funding will be available for 3.5 years. Income is equivalent to E13/65%.

The Göttingen Campus is a leading Neuroscience Center hosting numerous internationally renowned research institutions. This includes the University and its Medical Center, three Max Planck Institutes, the European Neuroscience Institute, and the German Primate Center. The Institute for Auditory Neuroscience & InnerEarLab offers a stimulating multidisciplinary research and training environment and operates state of the art research infrastructure. Moreover, the institute is tightly integrated in the Campus with research groups hosted also at non-university institutions and runs numerous productive collaborations on Campus such as within the collaborative sensory research center 889 ([www.sfb889.uni-goettingen.de/](http://www.sfb889.uni-goettingen.de/)), the Bernstein Center for Computational Neuroscience (BCCN, [www.bccn-goettingen.de](http://www.bccn-goettingen.de)) and the Center for Nanoscale Microscopy and Molecular Physiology of the Brain ([www.cmpb.uni-goettingen.de](http://www.cmpb.uni-goettingen.de)) as well as beyond the Campus.

Please submit your application preferably in one single PDF-document, including cover letter, CV, list of publications, names of possible referees, and relevant certificates to: [christian.vogl@med.uni-goettingen.de](mailto:christian.vogl@med.uni-goettingen.de) until January 31<sup>st</sup>, 2019.

**Dr. Christian Vogl**

**Institute for Auditory Neuroscience and InnerEarLab, University Medical Center Göttingen  
Robert-Kochstr. 40, D-37075 Goettingen, Germany**