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

PhD student position (f/m/d) in Structural and Molecular Biology

- starting as soon as possible, initially limited until 31.12.2028, salary according to TV-L -

The position is embedded in the newly founded Collaborative Research Center (CRC) 1690 “Disease Mechanisms and Functional Restoration of Sensory and Motor Systems”, and the successful candidate will contribute to the project “Dissecting the mechanisms of otoferlin-driven synaptic vesicle fusion at inner hair cell ribbon synapses”.

We’re looking for a motivated researcher to join a cutting-edge project exploring how otoferlin, a key protein in hearing, drives rapid and precise neurotransmitter release in inner hair cells. You’ll use advanced structural biology techniques—like cryo-EM and AI-driven modeling—to study otoferlin’s dynamic interactions with membranes, SNARE proteins, and other fusion machinery. Your work will involve reconstituting protein complexes, analyzing their structure and function, and testing new ideas about how otoferlin might directly trigger vesicle fusion. This is a unique opportunity to tackle a fundamental question in neuroscience with real implications for understanding deafness and developing future therapies.

Göttingen is world renowned for its research in neuroscience. It is a stimulating and highly collaborative scientific environment hosting numerous prestigious and internationally renowned neuroscience research institutions. This includes the University and its Medical Center, lifescience Max Planck Institutes, the European Neuroscience Institute and the German Primate Center. The InnerEarLab (https://www.innerearlab.uni-goettingen.de), which includes several research groups of the Institute for Auditory Neuroscience (https://www.auditory-neuroscience.uni-goettingen.de) and Dept. of Otolaryngology and outside University, is tightly integrated in the Campus, where it runs numerous stimulating collaborations such as within CRC 1690 (https://sfb1690.uni-goettingen.de) and the Multiscale Bioimaging Cluster of Excellence (https://mbexc.de). Most PhD students are enrolled in the competitive „Sensory and Motor Neuroscience“ program of the Göttingen Graduate School for Neurosciences, Biophysics, and Molecular Biosciences (GGNB, http://www.uni-goettingen.de/en/sh/56640.html), which offers attractive interdisciplinary training platform and networking for PhD students.

Your tasks:

- Express, purify and assemble multimeric protein complexes for structural studies (e.g., using the MultiBac and MultiMam systems)
- Biochemically characterize protein complexes, prepare, and image cryo-EM samples
- Establish cryo-EM image analysis pipelines for reconstituted complexes, and build, refine, and validate structural models
- Establish otoferlin-based vesicle fusion assays (coupled lipid and context mixing)
- Validate structural models using site-directed mutagenesis and functional assays
- Present your progress in regular thesis advisory committee meetings, lab meetings, scientific meetings, and research conferences
- Contribute to joint scientific publications
- Participate in a doctoral qualification program well suited to the research focus of the CRC

Your profile:

- Master's degree or equivalent in biochemistry, molecular biology, chemistry, or a related discipline, ideally with previous research experience in structural biology or biochemistry (cryo-EM/cryo-ET, X-ray crystallography, or NMR) or in protein engineering and purification for functional studies.
- Extensive experience working with sensitive multimeric protein complexes and/or large membrane proteins is highly desirable.
- Familiarity with cryo-EM/cryo-ET or X-ray crystallography data processing, model building and refinement (using RELION, cryoSPARC, Warp, Phenix, Coot) is highly desirable.
- Experience with relevant biochemical methodologies (bulk vesicle fusion assays, liposome or nanodisc reconstitution, FRET-based assays), AI-based image analysis, knowledge of sensory neuroscience, and computational skills (Linux, Python, R, bash) are advantageous.
- The ability to work in an interdisciplinary, English-speaking team of researchers is required.

We offer:

- Attractive employee compensation and benefit package according to the standards of the German public sector
- A research- and qualification program in line with the CRC´s scientific mission
- Clinically relevant research with strong links to patient care
- Working with a highly engaged and interdisciplinary team of scientists at the Institute for Auditory Neuroscience, one of the world leading institutions in inner ear research
- Highly collaborative research environment with excellent scientific networking possibilities
- State-of-the-art research infrastructure
- Structured and multi-layered supervision by a thesis advisory committee
- A comprehensive career development support program

We look forward to receiving your application!