“Neuro-Cardiac Crosstalk in Fabry Disease”
PhD Position at the Department of Neurology, University Hospital Würzburg

Who are we? We are an **energetic neuroscientific team** in “Translational Somatosensorics” focusing on pain and neuropathy research at the Department of Neurology.

Whom do we seek for? A strong and industrious, eager, and reliable PhD candidate of Life Sciences or related Faculty who is enthusiastic about neuroscientific work.

Background: **Fabry disease** (FD) is a lysosomal storage disorder with multiorgan involvement, particularly affecting the nervous system and the heart. FD is caused by mutations in the *GLA* gene, resulting in alpha-galactosidase A deficiency and lysosomal accumulation of globotriaosylceramide (Gb3). The PhD candidate will work in an interdisciplinary project, **investigating autonomic dysfunction and cardiac pathology** in FD. Patient-derived induced pluripotent stem cells (iPSCs) will be used to generate **sympathetic neurons and cardiomyocytes** to study how GLA deficiency and Gb3 accumulation disrupt neuronal signaling, cardiac function, and **neuro-cardiac crosstalk**. This will be accomplished by combining molecular analyses, high-resolution imaging, functional Ca^{2+} and electrophysiological measurements, and metabolome/proteome studies with clinical phenotyping. Ultimately, the project aims to identify early disease mechanisms linked to arrhythmias and cardiomyopathy and develop new mechanism-based therapeutic approaches.

Tasks PhD candidate:

- Advanced cell culture (iPSC, sympathetic neurons) and neuro-cardiac co-culture
- qRT-PCR, immunocytochemistry
- Patch-clamp/multielectrode array analyses
- Large data analysis (proteomics, metabolomics)
- Advanced statistics (e.g. multivariate analysis)

Prerequisites: The project is a close collaboration with the Streckfuß-Bömeke lab (Pharmacology/Toxicology), thus strong communication and organization skills are required. The candidate will be enrolled into the Graduate School of Life Sciences.

- Cell culture experience is mandatory.
- Experience in molecular biology and microscopy techniques is desired.
- Practical knowledge in stem cell research and electrophysiology is beneficial.

We offer: We offer a supportive and collaborative TEAM environment with strong supervision, structured scientific work, continuous exchange, and plenty of room for personal development and active shaping of the project.

Funding: Our project is funded by the Würzburg Interdisciplinary Center for Clinical Research (IZKF) in collaboration with the Streckfuß-Bömeke lab (Pharmacology/Toxicology).

Start and duration: Start is possible from July 2026 on, 3 years, 65% TVL-E13.

PI and contact: Please send your application including a motivation letter to Prof. Dr. N. Üçeyler ueceyler_n@ukw.de.