

The Charité – Universitätsmedizin Berlin is a joint institution of the Freie Universität Berlin and the Humboldt-Universität zu Berlin. The Charité is one of the largest university hospitals in Europe. Here, 3700 doctors and scientists treat patients, perform research and teach at the highest international level. The Charité also has an international reputation for excellence in training, with certifications in the medical, clinical and management fields.

As Einstein BIH Visiting Fellow, Prof. Viola Vogel from the Department of Health Sciences and Technology at the ETH Zurich will set up a research group at the Berlin-Brandenburg School for Regenerative Therapies (BSRT) and the Berlin-Brandenburg Center for Regenerative Therapies (BCRT) over the next three years. Analyzing and quantifying the mechano-sensation of cells in tissues is a new and emerging research topic in life sciences and Medicine. It opens distinct possibilities for innovative scientific approaches and clinical applications, particularly in the fields of Regenerative Medicine, Cardiovascular Sciences, Musculoskeletal Sciences and Cancer Sciences. The research will be conducted in close collaboration with the research group of Prof. Dr. Georg Duda within the Julius Wolff Institute (JWI) and in the field of “Musculoskeletal Biomechanics” at the BCRT/BSRT and with other research groups at Charité and in Berlin.

The following positions are currently available:

Doctoral and/or PostDoctoral Fellow

“Role of the Mechanobiology of Extracellular Matrix in Musculoskeletal Regeneration”

Major transformations of the extracellular matrix (ECM) accompany wound healing, and aging, as well as the progression of various diseases, including fibrotic disorders within the musculoskeletal system. These processes are regulated by a complex interplay of cells with their ECM, whereby the biochemical composition as well as the physical features of ECM are well recognized to regulate diverse cell functions. Our aim is to gain a better understanding how the mechanical strain of ECM fibers regulates tissue function and enable regeneration. We are searching for a PhD and a PostDoctoral candidate who will develop unique approaches for the characterization of **healthy and diseased/inflamed musculoskeletal tissues** with novel nanoprobe. The development will be supported jointly by the teams at Charité Berlin and ETH Zurich. Our aim is to gain a mechanistic understanding of extracellular matrix properties, to bridge histological insights with distinct clinically challenging regenerative situations and to learn how various cell types co-regulate ECM homeostasis versus disease progression.

Your tasks will be:

- To analyze and characterize histological sections of healthy and pathologic tissues with novel nanoprobe using confocal microscopy
- To apply existing and develop new technologies for the characterisation of various soft tissues across different length scales
- To use the findings to develop mechanistic insights into factors that drive degenerative processes in soft tissues and how to exploit them to advance diagnostic and therapeutic regenerative technologies.
- To closely collaborate with clinical partners at Charité Berlin and with the research group at ETH Zurich.

Your profile:

- For the PhD position, Master in biochemistry, biophysics, biotechnology, cell biology, immunology, or in other related disciplines
- For the PostDoc position, PhD in biomedical engineering/sciences or similar fields with a publication track record illustrating excellent independent working capabilities

Highly appreciated additional skills:

- experiences in at least two of the following fields: biochemistry, biophysics, cell biology, extracellular matrix biology, immunology, (patho)histology, transcriptomics, optical confocal microscopy, bioinformatics and other quantitative skills (for the PostDoc position)
- excellent communication and writing skills in English

- you are team oriented, enthusiastic, self-driven and a deep thinker
- you have the flexibility to spend time in Zurich for research visits

Salary will be according to the TV-Charité structure (E13 scale) with 39 hours/week. The position is offered for a duration of 36 months, with an option for extension.

The Charité – Universitätsmedizin Berlin hires based on the suitability, competence and professional performance of applicants. We actively promote equality of all employees. We therefore welcome applications from women and men, regardless of their cultural and social background, age, religion, belief, disability or sexual orientation. Applicants with a disability are given preferred consideration if equally qualified.

Please send your complete application (Letter of application, CV, publication list as one PDF file) within 14 days to the following e-mail address: jwi-sekr@charite.de

For any further enquiries regarding the research projects please contact viola.vogel@hest.ethz.ch or georg.duda@charite.de

Travel costs for an interview cannot be refunded.

