Department:	Stem Cell Biology and Cellular Engineering
Job site:	RWTH Aachen University Hospital
Description of the position:	**PhD Position: Mechanobiology of Embryoid Bodies**
Job description:	**Our profile** We analyze how cellular differentiation – particularly of human induced pluripotent stem cells (iPSCs) – can be controlled by cell-cell interaction, biomaterials, and mechanical stimulation. A focus of our work is to genetically modulate iPSCs and to track and influence the differentiation processes by epigenetic modulation. **Your tasks** You will be part of the DFG-funded graduate school Mechanobiology in Epithelial 3D Tissue Constructs (ME∃T; me3t.rwth-aachen.de) within project A1 Mechanobiology of embryoid bodies. Embryoid bodies (EBs) can be generated by aggregation of induced pluripotent stem cells in culture. They resemble cystic structures with endodermal epithelium and epiblast cells. This self-organization recapitulates aspects of early embryonic development. In this project, we want to understand how cell-cell interaction, cytoskeletal elements as well as external mechanical stimuli impact on directed differentiation in this model system. Furthermore, we want to understand how hydrogels can support directed differentiation toward specific lineages. All relevant techniques are established in the lab, including iPSC culture, differentiation assays, CRISPR-Cas9 technology, flow cytometry, immunofluorescence and two-photon microscopy, ddPCR, blotting techniques, microarray analysis, and single cell sequencing technology. A particular focus is on epigenetic profiles, which will be used to track and modulate the differentiation process.
Requirements / Your profile:	**Your profile** We are looking for a highly motivated and ambitious PhD student (to receive the Dr. rer. nat. degree) with a strong background in cell biology or mechanobiology. Experience in iPSC-cell culture or bioinformatics would be appreciated. You should hold a very good master degree. Willingness for teamwork, the ability to work independently, and excellent English language skills are a prerequisite. We offer a highly interactive and well-equipped environment in a team with international partners, a broad spectrum of methods, and a highly relevant Topic. (www.stemcellbiology.ukaachen.de)
Pay category:	TV-L 13 (65 %)
Hiring date:	July 01, 2022
Duration of employment:	3 years
Contact/Send application to:	Univ.-Prof. Dr. Dr. Wolfgang Wagner Email: wwagner@ukaachen.de, phone: +49 (0)241 80-88611 https://www.researchgate.net/profile/Wolfgang-Wagner-4
Equal career prospects for women and men.	
Severely disabled applicants with equal qualification will be given preferential consideration.	
Application deadline: March 31, 2022	