

Department:	Institute of Molecular and Cellular Anatomy (MOCA)
Job site:	RWTH Aachen University Hospital
Description of the position:	PhD student: Mechanobiology of human embryo implantation
Job description:	<p>Our profile Research at MOCA deals with the cytoskeleton and cellular junctions as main integrators of cell and tissue function. We use morphological and functional imaging techniques in vital cells, tissues, organoids and organisms (www.moca.ukaachen.de).</p> <p>PhD project: Embryo implantation is highly species-specific and occurs only during a restricted time during the menstrual cycle, i.e., the “window of implantation”. It necessitates profound changes in the endometrial epithelium and connective tissue. Implantation is initiated by adhesion of the embryos’ outer trophoctoderm to the maternal uterine epithelium. Crosstalk between both enables expansion of the embryo and penetration of the endometrial epithelial barrier followed by trophoblast invasion of the underlying endometrial connective tissue. The aim of your project is to understand the contribution of mechanobiological feedback between trophoctoderm, endometrial epithelium and connective tissue during human embryo implantation.</p> <p>Your tasks: You will be part of the graduate school "Mechanobiology in Epithelial 3D Tissue Constructs" (ME3T; me3t.rwth-aachen.de). Your project combines 2D and 3D co-culture systems with state-of-the-art microscopy and mechanobiological analyses. You will (i) study the contribution of epithelial polarization and hormonal regulation on trophoblast-endometrial adhesion and penetration, and (ii) investigate the influence of connective tissue stiffness on trophoblast adhesion and migration.</p>
Requirements / Your profile:	<p>Your profile: You are highly motivated and ambitious. You have a strong background in cell biology or mechanobiology. You are versed in the fields of biomaterials, tissue engineering and microscopy. You must have completed a master or equivalent degree in biology, biomedical engineering or a comparable study program to be accepted. Willingness for teamwork, the ability to work independently and excellent English language skills are expected.</p>
Pay category:	TV-L 13 (65 %)
Hiring date:	July 01, 2025
Duration of employment:	3 years
Contact/Send application to:	Univ.-Prof. Dr. Rudolf Leube Email: rleube@ukaachen.de , phone: +49 (0)241 80-89107 Web: www.moca.ukaachen.de
Equal career prospects for women and men.	
Severely disabled applicants with equal qualification will be given preferential consideration.	
Application deadline: March 03, 2025	