HEIDELBERG
FACULTY OF
MEDICINE

The **Institute of Physiology and Pathophysiology** is part of the Medical Faculty of Heidelberg University. The scientists of the Institute participate in various national and international collaborative research projects and teach the subject of physiology to about 450 students of medicine and dentistry annually. Research focuses on the physiology and pathophysiology of the cardiovascular, muscular and nervous system.

The Department of Cardiovascular Physiology at the Institute of Physiology and Pathophysiology (Prof. Dr. Markus Hecker) offers the following position, to be filled as soon as possible:

Postdoctoral Fellow (*Wissenschaftliche/r Mitarbeiter/in*)

The position is funded by the German Research Foundation for a remaining period of 18 months, with the possibility of a 36-month extension depending on the progress of the work.

Scientific Focus of the Department:
Research topics addressed include remodeling processes in the cardiovascular system induced by biomechanical factors, e. g., during hypertension and atherosclerosis, at all levels of signal transduction, the development of nucleic acid-based therapeutics for the treatment of heart failure or Marfan syndrome, the interaction of endothelial cells with leukocytes and platelets during chronic inflammatory diseases, neuroprotective mechanism in stroke, reactive lipids as signaling molecules in diabetes, and the functional characterization of iPS cell-derived cardiomyocytes and their cultivation as 3D cell patches for regenerative medicine. The knowledge gained hereby may serve as a basis for the development of novel molecular and cell biological therapies.

Your Project:
In (large) conduit arteries a chronic rise in blood pressure increases wall tension and stretching of vascular smooth muscle cells, which respond with hypertrophy (increase in cell size) and reorganization of the extracellular matrix. This project aims at elucidating the role the LIM-domain proteins zyxin and lipoma preferred partner (LPP), which act as mechanotransducers conveying the stretch response to the nucleus thus altering the smooth musce cell phenotype, play in this process. Particular focus will be on the activation and activity of these proteins and their interactions with other regulatory elements at the focal adhesions, in the cytoplasm and the nucleus, and their mutual compensation if one of them is absent. To this end a combination of biochemical, molecular and cell biological techniques will be employed. A central part of the project is the analysis of both conventional and inducible smooth muscle cell-specific knockout mice for both proteins, which have recently been generated by our group.

Your Qualifications:
You should have a PhD in cell biology, molecular biology, physiology or a related discipline. Profound knowledge in generating transgenic mouse models including the primarily non-invasive *in vivo* phenotyping of these animals is a must, experience in the transient *in vitro* transduction of murine cells employing, e.g. adeno-associated viral vectors a plus. You should also enjoy guiding and advising PhD and MD students who participate in the project.

Applications will be accepted until the position is filled.

Please send – preferentially by e-mail and with a single PDF file as attachment – your application, which should include a letter of motivation, a short description of your research background, your CV, your list of publications, and two letters of reference, to:

Prof. Dr. Markus Hecker, Universität Heidelberg, Institut für Physiologie und Pathophysiologie, Im Neuenheimer Feld 326, 69120 Heidelberg, Germany

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www.uni-heidelberg.de/physiologie

We stand for equal opportunities for women and men. Severely handicapped with the same eligibility will be given priority.

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