Open position in the
Division for Biochemistry of Joint and Connective Tissue Diseases, 
Orthopedic Department, University Medical Centre Ulm

1 PhD student position
(DFG-funded project)

Complement system and intervertebral disc degeneration

**Project:** Chronic low back pain is one of the most common human health problems and frequently associated with degenerative changes of the intervertebral disc (IVD). Besides the risk factors age, mechanical loading and genetic predisposition, injuries of the IVD or adjacent endplates can initiate the degenerative process. So far, little is known about a possible involvement of the innate immune system in IVD-degeneration. Thus, the central hypothesis of the project is that Toll-like receptors and complement play a relevant role in the development and/or progression of IVD-degeneration. By the use of clinical tissue samples, previously established in vitro-assays and a unique animal model, the central questions 1) whether complement is involved in the pathogenesis of disc degeneration, 2) which mechanisms lead to an activation in the IVD and 3) which cell-biologic consequences are induced by these processes in IVD-cells, shall be addressed. Overall, the results of the project can lead to a better understanding of the pathogenesis of IVD-degeneration and might define the molecular basis for new therapeutic strategies.

This is a collaborative project together with Dr. Cornelia Neidlinger-Wilke (Institute of Orthopedic Research and Biomechanics, University Medical Centre, Ulm) funded by the DFG. Therefore, working within a project team is mandatory.

**Start of the project:** as soon as possible

**Candidates:** We are seeking excellent candidates (M.Sc. in Biology, Molecular Medicine, Biochemistry etc.) with a strong motivation to address biological and pathophysiologic questions. Experience in cell and molecular biology, histological methods and possibly first insight into animal experiments are advantageous.

Detailed applications (CV, certificates, references etc.) should be submitted - preferably per e-mail - to:

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