



PhD Positions in Cellular Immunology (within the RU 5775 MagNet)

Two PhD Student Positions (m/f/d) (65% E13 TV-L)

We are excited to announce two PhD student positions within the newly funded DFG Research Unit *MagNet (Macrophage Niche Network Dynamics)*

The Research Unit MagNet aims to define macrophages as choreographers of tissue development, function, and integrity across different organs. This multidisciplinary consortium explores macrophage biology in health and disease using cutting-edge techniques such as spatial proteomics, 3D imaging, single-cell transcriptomics, and advanced mouse models. For further information see also www.macrophagenetwork.com

The two positions are placed in the laboratory of **Prof. Stefan Uderhardt** at the Friedrich-Alexander University (FAU) Erlangen-Nürnberg and the laboratory of **Prof. Eva Kiermaier** at the University of Bonn/FAU Erlangen-Nürnberg.

We are seeking for highly motivated PhD candidates to work at the interface of cell biology and immunology. The project of Stefan Uderhardt aims at **understanding the role of Macrophage-Fibroblast networks in extracellular matrix homeostasis in vivo, particularly in synovial joints**. It focuses on the cooperative interactions between macrophages and fibroblasts in regulating the turnover of extracellular matrix components to maintain tissue homeostasis and prevent inflammatory diseases such as arthritis. Project relevant methods include mouse work, ex vivo and in vitro cell cultures, knockout mouse models, high-dimensional 2D and 3D tissue microscopy, transcriptomics; 2D and 3D co-culture systems; AI-driven image reconstruction and quantification.

The project of Eva Kiermaier aims at **deciphering the interrelation between Kupffer cells and hepatocyte polyploidization**. It explores how liver-resident macrophages (Kupffer cells) regulate the polyploidization of hepatocytes during early postnatal development, contributing to liver metabolism and function. Project relevant methods include ex vivo cell cultures, co-culture experiments, conditional knockout mice, advanced live cell imaging and high-resolution microscopy, proliferation assays, metabolomics and transcriptomics.

The applicants should hold a master degree in cell biology, immunology, biochemistry or related fields. We particularly look for applicants with a collaborative attitude towards research and who can combine high personal ambition and work ethics with eagerness to contribute to other projects.

We offer enrollment in structured graduate programs, cutting-edge research training in immune cell biology, immunology and quantitative cell biology, a collaborative and interdisciplinary environment with annual retreats, summer schools, international symposiums, and lab exchange opportunities as well as mentoring through Thesis Advisory Committees (TACs) for scientific and professional development

Complete applications in English should include a CV, a brief statement of research experiences and interests and addresses of two referees. Please submit your application as a single pdf file to Stefan Uderhardt (Stefan.uderhardt@fau.de) or Eva Kiermaier (eva.kiermaier@uni-bonn.de) before April 15th 2025.