# PhD students in liver development and regeneration

Department Biologie, Erlangen, TV-L E 13, Teilzeit, Befristete Anstellung, Bewerbungsschluss: 30.09.2024

**Ihre Aufgaben**

The Liver Development and Regeneration group of Professor Elke Ober in the division of developmental biology at the Friedrich-Alexander Universität (FAU) Erlangen-Nürnberg is looking for a highly motivated candidate for a PhD studentship. The project will use molecular biology, zebrafish genetics and advanced imaging, to examine the molecular and cellular mechanisms directing morphogenetic cell-cell interactions and cell communication in liver development.

**Ihr Profil**

**Notwendige Qualifikationen:**

- MSc degree in the life sciences (e.g. Molecular Biology, Cell biology, Biomedicine, Biochemistry) or related fields
- Experience with molecular biology
- Excellent communication and interpersonal skills for interactions with an international and diverse team.
- Self-motivated and able to work in a team environment.

**Wünschenswerte Qualifikationen:**

- Background in cell and/or developmental biology
- Microscopy and image analysis experience
- Good command of English to navigate the scientific field
- Background working with zebrafish
- Permission to work with animals

**Stellenzusatz**

Befristetes Forschungsvorhaben

The Ober group investigates how a functional liver forms during development. Our research aims to generating detailed knowledge of the cellular and molecular mechanisms coordinating the stepwise assembly of the complex 3D-liver architecture during development and regeneration. Specifically, we focus on the cell behaviours and cell and tissue interactions driving the transformation of hepatic progenitors into the highly specialized organisation of the differentiated organ, using zebrafish as a model. The overarching goal of our work is increase the knowledge of how a functional liver forms, essential for understanding the cellular and molecular basis of liver pathologies and the development of new therapeutics.

During liver development, bipotent progenitors differentiate into hepatocytes and biliary epithelial cells

and give rise to the biliary ductal network, while endothelial cells form in parallel the blood vessel network. Recently, we discovered essential roles of endothelial cells in the differentiation of both functional hepatocytes and the biliary network. Detailed proteomic analysis to uncover the molecular mechanisms of this process, identified a number of novel candidate factors, including cytoskeletal regulators, ECM components, etc.. This PhD project will investigate the molecular and cellular roles of endothelial cells in forming a functional liver architecture during development, focusing on how hepatocytes polarize and connect to the biliary ductal network.

You will use zebrafish genetics, state-of-the-art cell molecular biology techniques (e.g. CRISPR/Cas9 genome editing, transgenesis), fluorescent in situ hybridization and immunohistochemistry, live- and fixed-tissue imaging methods combined with quantitative image analysis, statistical analysis, manuscript preparation.

The student will receive a detailed education in molecular biology, zebrafish husbandry and genetics, fluorescence microscopy and computational image analysis.

The Ober group is an interactive and dynamic team at the Division of Developmental Biology at Friedrich-Alexander University (FAU) Erlangen-Nürnberg, Germany. FAU and surrounding institutes provide an outstanding research environment for development, cell biology and regeneration including all facilities essential for this ambitious research program.

Salary will be according to TV-L E13, 50-65% depending on experience, full-time for the duration of 3 years.

For informal inquiries, please contact Elke Ober **(elke.ober@fau.de)**. Applications from underrepresented minorities are particularly welcome. Your application (in English or German) must include a motivation letter, your CV, your university diploma and transcripts and the names of two referees. The application should be sent as a single merged PDF to **(elke.ober@fau.de)**. Applications will be accepted until the position is filled.

**Deadline:** Candidate selection will start **24.09.2024**; applications will continue to be accepted afterwards, until the position is filled.

**Interessiert?**

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