# Job Advertisements within the CRC/TRR 225

The Collaborative Research Centre/Transregio **CRC/TRR 225 “From the Fundamentals of Biofabrication towards Functional Tissue Models”** is an interdisciplinary research consortium of the Universities of **Würzburg, Bayreuth, and Erlangen-Nürnberg**.

The TRR225 aims to develop innovative biofabrication strategies - particularly automated 3D printing technologies - for processing living cells and biomaterials into complex tissue constructs. These advanced in vitro models provide new opportunities for pharmaceutical, cancer, and infection research, support the reduction of animal testing and offer long-term perspectives for regenerative medicine.

Since its establishment in 2018, the consortium has achieved substantial scientific progress and international visibility and will enter its third funding period in 2026.

The advertised position is part of the **subproject C02 “Biofabrication of 3D Models for Functional Investigation of Stromal Parameters Influencing the Migration of Breast Cancer Cells”**.

This project focuses on the biofabrication of complex tumor-stroma models to investigate breast cancer cell migration in response to defined stromal parameters. By employing bioinks with tunable physicochemical properties, we will systematically assess how structural organization, mechanics, and matrix remodeling influence cancer cell motility. Using spatially defined compartmentalized 3D models, we will explore how neighboring stromal cells from adipose tissue modulate both single-cell and collective migration of breast cancer cells. These bioprinted platforms will provide a powerful tool to dissect the dynamic interactions between tumor and stroma, offering key insights into their role in tumor progression.

# PhD Candidate (f/m/d) Cell Biology

## Your PhD Work

- The doctoral position is in the area of cell biology / tissue engineering / bioprinting.
- **In the doctoral thesis**, a tumor-stroma model will be developed using 3D bioprinting, in which the impact of the tumor microenvironment on tumor progression can be investigated. In particular, the interactions of breast cancer cells and cells of the neighboring adipose tissue and their effects on tumor cell migration will be analyzed in detail. The modular 3D model will be used to investigate new fundamental mechanisms of interaction within the tumor microenvironment and evaluate the potential for developing targeted therapies against invasive breast cancer.
- **The methods used** will include different bioprinting techniques, various 3D cell culture techniques (such as spheroids, hydrogels, scaffolds), gene and protein expression analysis, cytokine arrays, histological and immunohistochemical analysis, various microscopic techniques such as confocal laser scanning microscopy, and live-cell imaging for analyzing tumor cell migration.
- The studies are conducted in close cooperation with colleagues in the research group and partners from several other disciplines within the research consortium.

## Job Details

- Salary based on TV-L E13 (67%)
- Start date: As soon as possible. Duration: Up to 4 years.
- Place of work: WÜRZBURG – University Hospital Würzburg – Department of Trauma, Hand, Plastic and Reconstructive Surgery

## Requirements

- A degree in biology, biochemistry, bioengineering or a related life science is required.
- Experience in the methods used and basic computational skills for data analysis are a plus, but not a prerequisite for the position.
- You should have a keen interest in both basic research and biomedical translational research.
- You should like to work in a team, demonstrate above-average commitment, and be able to work independently.

## What We Offer

- We offer thorough training and supervision in all aspects of your PhD work, challenging tasks, and collaboration in an interdisciplinary team.
- Our research group is embedded in an excellent scientific environment at the University Hospital Würzburg and the University of Würzburg and cooperates nationally and internationally in the field of tissue engineering and regenerative medicine.
- Within the framework of the research consortium, additional interdisciplinary collaborations in the field of 3D bioprinting are established, which you can actively utilize.
- You will be integrated into the structured training program of the SFB/TRR (summer schools, seminars, symposia, etc.). Participation in the University's Graduate School of Life Sciences is also possible.
- Your attendance at international and national conferences is highly encouraged.
- Support for career and personal development.

## Equal Opportunity & Diversity Statement

We are committed to equal opportunity and diversity and explicitly encourage women to apply. Candidates with disabilities will be given preference if their qualifications are equivalent. We offer an inclusive, supportive, and collaborative working environment.

## Contact

Please send your application in an email (PDF file including CV, detailed copies of certificates, and references, if applicable) **by January 15th, 2026** to

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