PhD Position in Computational Cardio-Immunology

We are seeking a highly motivated PhD candidate to work on an interdisciplinary project at the intersection of immunology, cardiology, and computational biology. This project aims to decode the cardio-immune crosstalk by tracking antigen-specific T cells longitudinally in heart failure patients and mechanistically modeling their roles in experimental mouse models.

Bridging experimental and computational biology, you will utilize high-dimensional datasets generated within the lab, including single-cell RNA/T cell receptor (TCR) sequencing and high-resolution *in situ* spatial transcriptomics (Xenium platform). Your role will focus on mapping and modeling these antigen-specific T cell responses within cardiac and atherosclerotic niches. Actively developing, optimizing, and applying bioinformatics pipelines to decode these complex datasets is a core component of the work.

You will be embedded into the interdisciplinary environment of the Collaborative Research Centre SFB 1525 ("Cardio-immune Interfaces") and the Interdisziplinäres Zentrum für Klinische Forschung (IZKF) at the University Hospital Würzburg, and will benefit from close collaborations with clinical departments in the hospital, and from a supportive, structured mentoring environment designed to foster career development.

Expected qualifications:

- Master's degree in Bioinformatics, Data Science, or a related field.
- Basic programming proficiency (R or Python) and a strong motivation to independently analyze high-dimensional sequencing data.
- Scientific curiosity and a desire to bridge data science with immunology
- Excellent organizational skills, team spirit, and English fluency.

What we offer:

- Structured doctoral training and individual mentoring.
- A unique, interdisciplinary project at the intersection of translational data science and cardio-immunology.
- Direct access to translationally relevant human data.
- Opportunities to present research at national and international conferences.
- Fixed-term position (65%) for 3 years, salary will be in accordance to the German Public Sector Collective Agreement (TV-L).

The University of Würzburg strives to increase the proportion of women in research and teaching. Severely handicapped applicants will be employed preferentially if their aptitude is essentially the same.

Please submit your application including your CV and a brief motivation letter (2 pages max.) as a single PDF until 7th of July to:

Ashour_D1@ukw.de