

Postoc Position in Spatial Single-Cell Analysis of Human Bone Marrow

The chair of „Computational Biology of Spatial Biomedical Systems“ (<https://www.med.uni-wuerzburg.de/en/systemimmunologie/research/quantitative-single-cell-biology-of-the-immune-system-gruen-lab/>) at the Würzburg Institute of Systems Immunology, Julius-Maximilians-University Würzburg, is looking for an experimental postdoc for the ERC funded ImmuNiche project. The research group of Prof. Dr. Dominic Grün studies intrinsic and extrinsic driving forces of cell fate decision, and utilizes single-cell sequencing and high-resolution imaging- as well as sequencing-based spatial transcriptomics methods for investigating cell fate choice in the bone marrow microenvironment.

The project aims to characterize the perturbed spatial architecture of the bone marrow microenvironment at single-cell resolution in patient biopsies (multiple myeloma, myelodysplastic syndrome, acute myeloid leukemia) before and after different treatment options (chemotherapy, bone marrow transplantation, CAR-T cell therapy) in order to better understand human bone marrow regeneration. Spatial bone marrow analysis will rely on the integration of state-of-the-art single-cell sequencing methods with high-resolution genome-scale spatial imaging methods (seqFISH) and spatial transcriptomics, analyzed with tailored in-house developed machine learning methods. You will perform quantitative analysis of these single-cell data supported by expert bioinformatic scientists in the group.

You will join an international vibrant hybrid group of experimental and computational biologists within the recently founded Institute of Systems Immunology with excellent computational and experimental infrastructure. The group is affiliated with the newly founded CAIDAS institute of artificial intelligence (<https://www.uni-wuerzburg.de/caidas/home/>) providing a direct interface to state-of-the art data science. You will interact directly with AI/ML experts to enable transfer of cutting-edge data science to translational single-cell analysis.

This position will initially be given for two years with the option to be extended.

Salary and benefits are based on the public service positions in Germany (TV-L).

Expected qualifications:

- PhD in life science, biology, natural science, or comparable
- Strong background in basic molecular biology techniques
- Proficiency of fluorescence microscopy, ideally smFISH, and tissue handling (cryo-sectioning)
- Proficiency in cell purification by flow cytometry
- Proficiency in experimental hematopoietic cell analysis techniques
- Background in (single-cell) omics techniques
- Background in bioinformatics is a plus
- At least one first author paper in an international peer-reviewed journal
- fluency in English

The University of Würzburg strives to increase the proportion of women in research and teaching and therefore expressly requests applications from suitably qualified female scientists.

Severely handicapped applicants will be employed preferentially if their aptitude is otherwise essentially the same.

Please submit your application documents by December 15th to systemimmunologie@uni-wuerzburg.de