

## One PhD Position: Chromatin and 3D genome architecture and chromatin in antigenic variation.

### Siegel Lab research interests:

Viruses, bacteria, and parasites all face similar challenges when infecting a susceptible host: they have to evade the host immune response. One strategy used by many pathogens to evade the immune response is antigenic variation. Antigenic variation refers to the capacity of an infecting organism to systematically alter the identity of proteins displayed to the host immune system making it difficult or impossible for the host to eliminate the pathogen.

The goal of our research is to understand the molecular mechanisms underlying antigenic variation in *Trypanosoma brucei*, the causative agent of human sleeping sickness in Sub-Saharan Africa. Using numerous system-wide approaches (high-resolution ChIP-seq, single-cell RNA-seq, Hi-C) as well as state-of-the-art imaging and proteomics, we study how different chromatin structures are established at specific loci along the genome, how they are formed across the nucleus in 3 dimensions and how they affect gene expression.

The proposed work will build on recent publications from our lab and aims to elucidate how the histone variants H3.V and H4.V as well as cohesin are targeted to specific loci along the genome and how their precise positioning affects local chromatin structures global genome architecture.

Relevant recent publications from our lab:

- Müller, Cosentino et al. Nature, 2018 <https://doi.org/10.1038/s41586-018-0619-8>
- Kraus et al. Nature Communications, 2020 <https://doi.org/10.1038/s41467-020-15274-0>
- Faria, Luzak et al. Nature Microbiology, 2021 <https://doi.org/10.1038/s41564-020-00833-4>

### Your profile:

Applicants are expected to be highly motivated, to have good verbal and written English skills and to enjoy working on challenging research projects.

In addition, they should have a good background in gene regulation and biochemistry or molecular biology and a strong interest in the following technologies/research areas:

- super resolution microscopy
- next generation sequencing
- quantitative proteomics
- systems biology
- chromatin biology / epigenetics

### We offer:

- A fully funded 4 year position with a salary of 65% of TV-L 13.
- An excellent scientific environment in the newly built Biomedical Center (BMC) of the Ludwig-Maximilians-Universität in Munich, one of the top-ranked universities in Germany.
- A cutting-edge project at the interphase of chromatin biology, infection biology and systems biology.
- Numerous opportunities for networking within the chromatin dynamics network and with our collaborators around the world.
- Great and very welcoming colleagues.

If you are interested, please submit your application containing a CV, a reference letter and a cover letter describing your interest to: <https://www.sfb1064.med.uni-muenchen.de/now-hiring/index.html>, **before 30.06.2021**.

Questions about the project can be directed to Nicolai Siegel ([n.siegel@lmu.de](mailto:n.siegel@lmu.de))

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