

**Project Title:** *Phenotypes of altered cell cycle and genetic diseases linked to defective cell division*

**Supervisor:** Ulrike Endesfelder

**Institute/group:** Institute for Microbiology and Biotechnology, RG Endesfelder

**Webpage:** <https://www.ifmb.uni-bonn.de/de/forschung/ag-endesfelder/>

**Requirements:** interest in microbial cell biology and transdisciplinary research, English as working language

**Skills to be learned (max 50 words):** dependent on interests, background knowledge and looked-for research focus of the student, one or several of the following key expertise will be learned: A) molecular wet-lab, e.g. genetics, biochemistry, cell biology B) microscopy: preparing samples of yeast strains, (super-resolution) imaging of multi-color kinetochore samples and/or C) data analysis: Advanced analyses and modeling.

**Project Description (max. 150 words):** Single-molecule localization microscopy (SMLM) transforms nanoscale visualization of cellular structures, revealing unprecedented detail in cell division machinery. Using *Schizosaccharomyces pombe* as our model system, we achieved precise measurements of kinetochore protein stoichiometry and spatial organization, constructing a comprehensive in-situ model (<https://doi.org/10.1083/jcb.202209096>).

The WHF would join our kinetochore subgroup and help explore how kinetochore architecture responds to stress and becomes disrupted in disease. You would work with our SMLM platform to track structural transitions in real-time, map molecular interactions, and, by connecting molecular architecture to cellular function, help illuminate how chromosome segregation defects drive genetic disorders by revealing how molecular disruptions in cell division lead to disease.

**Support concept (max. 75 words):** Integration into the subgroup working on *S. pombe* and the kinetochore biology, including subgroup meetings and slack channel exchange. Flexible working hours, adjusted to the students' study schedule and to the projects' needs. Offer to join the group's conferences with an own poster contribution presenting own results (VAAM, SMLMS). Bimonthly mentoring meetings. Optional: Enlarging the project to a larger format to be able to integrate M.Sc. modules, such as lab rotations and/or the master thesis modules.

**Interested to recruit and finance a suitable student by own funds:** YES/NO