



The Jäschke lab at Heidelberg University has an open position for a

PhD student

RNA aptamer-based live-cell imaging

The central topic of our lab is the chemical biology of nucleic acids, and new methods for RNA imaging have been a main pillar of our research. We are located in state-of-the-art laboratories on the Life Science Campus Neuenheimer Feld. We are generously funded by the European Research Council (ERC), the German Research Council (DFG) and the Baden-Württemberg foundation.

Our group is among the leading labs in RNA live-cell imaging, developing tools for broad application in RNA biology. Two aptamer-based super-resolution imaging systems have already been developed in our lab (SiRA – Wirth *et al.* **JACS** 2019, and RhoBAST – Sunbul *et al.*, **Nat. Biotechnol.** 2021) which allow RNA visualization at unprecedented resolution or localization precision.

As a PhD candidate in our lab, you will have the opportunity to apply our breakthrough imaging systems to various problems in eukaryotic and prokaryotic RNA biology and unravel the localization, processing, interaction and decay of candidate RNAs. You will learn SELEX and FACS, which are established methods in our lab, apply them to evolve novel or improve existing fluorescent light-up aptamers, and analyze the output by next-generation sequencing. You will develop alternative tag-free or covalent RNA labeling approaches for cellular RNAs and adapt, optimize, and tweak the imaging systems to various cell lines and biological tissues. You will optimize the imaging dyes by chemical variation. In collaboration with leading biophysicists, you will learn and apply advanced super-resolution microscopy methods. Our team combines expertise from various disciplines, including genetics, biochemistry, chemistry, and bioinformatics, providing a vibrant interdisciplinary environment for this project.

Your qualifications:

We are looking for enthusiastic and motivated candidates who have a strong interest in RNA biochemistry and who would like to challenge textbook wisdom. The applicants should hold a Master's degree in molecular biology, biochemistry, biotechnology, chemistry or a related discipline and should have demonstrated excellent academic performance in their studies. Initiative, creativity, team spirit, excellent English language skills and a solid background in molecular biology are essential traits. Practical experience in RNA biology, organic synthesis, and/or fluorescence microscopy is a bonus.

Team and environment:

The candidates will join a young, interactive, interdisciplinary and collaborative research team. Heidelberg University is one of the top research universities in Germany, and IPMB is a modern research institute working on cutting-edge projects in the life sciences. Our laboratories are well equipped for advanced organic synthesis, *in vitro* and *in vivo* biological wet-lab work, cell culture, and radioactive labeling. Furthermore, NMR, mass spectrometry and microscopy facilities are available. The position is paid according to E13 (50%) TV-L and is available immediately.

Application details:

Learn more about our group at jaschkelab.de. To apply, please send a letter that motivates your application for this particular project, your CV, transcripts, a summary of previous research, and contact details of two academic references as a single pdf-file to Prof. Dr. Andres Jäschke (jaeschke@uni-hd.de).