

Doctoral Positions in Computational Membrane Biophysics

Unlock the Secrets of Cell Membranes - Join Our Research Team at Friedrich-Alexander University of Erlangen-Nürnberg, Germany

About Us:

We are seeking enthusiastic candidates for Ph.D. positions in our lab specializing in cutting-edge theoretical and computational membrane biophysics. Our research delves into the complex interplay between the composition, structure, organization, and dynamics of cell membranes and its cellular function. We are located at the Friedrich-Alexander University of Erlangen-Nürnberg, a vibrant academic center with a focus on immunobiology and home to the National High-Performance Computing Center NHR@FAU.

The Research Projects:

Position 1: Probing Immune Cell Membrane Dynamics

In collaboration with immunology labs, this project explores the physico-chemical forces driving the formation of membrane domains within immune cell membranes, and their coupling to immune signaling. Key questions include:

- How do immune cells sense external signals?
- What role do lipids play in signal transfer across the cell membrane?
- How can we manipulate immune cell function through membrane composition?

Position 2: Advancing Antibiotics with Membrane-Active Peptides

This project aims to identify membrane-active peptides that enhance the efficiency of classical antibiotics and enable high-affinity antibiotics with low membrane permeability to reach their targets. Collaborating with research groups in Jena, Borstel, and Hamburg, we seek to understand the synergistic mechanisms between antimicrobial peptides, cell-penetrating peptides, and small compound antibiotics.

Your Profile:

- **Educational Background:** Ideally, you hold a master's degree in bio-/physics, theoretical/computational chemistry, life sciences, or a related field.
- **Interdisciplinary Interest:** Strong passion for interdisciplinary projects and collaboration with medical and immunology groups.
- **Communication Skills:** High proficiency in English and effective communication skills.
- **Team Player:** Ability to thrive in a collaborative and dynamic research environment.

Why Choose Erlangen?

Erlangen stands as a center for immunobiology, with over 70 groups dedicated to immunological research. The National High-Performance Computing Center in Erlangen focuses on cutting-edge atomistic simulations, providing a stimulating environment for scientific innovation. It provides exceptional computing resources to our research on biomembranes.

Application Process:

Interested candidates should submit a PDF document comprising a cover letter, CV, and certificates to rainer.boeckmann@fau.de

Join Us in Shaping the Future:

Embark on a journey of groundbreaking research and contribute to the advancement of computational membrane biophysics. By joining our team, you become part of a collaborative research initiative, joining forces of biophysics and immunology.