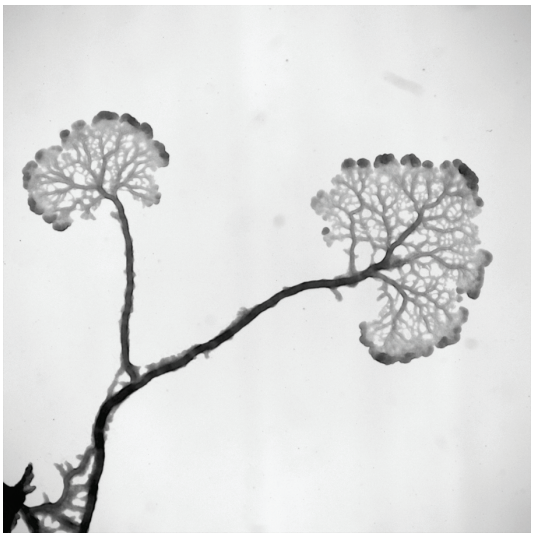
Technische Universität München

Prof. Karen Alim's Group on Biological Physics and Morphogenesis at the TUM Campus Garching uses theoretical and experimental methods to investigate information in biological systems. We are looking for a PhD student (m/f) to join our team at the TUM.

PhD in Learning in living adaptive networks

Your task:



Learning is a key advantage to survive in changing environments, both for animals and single-celled organisms. The single-celled slime mould Physarum polycephalum learns from environmental stimuli, yet how information is stored and retrieved to gain an advantage in behaviour is unclear. You will employ numerical simulations and theoretical models to investigate how stimuli change mechanical changes on Physarum's network-shaped body and thereby imprint the past in the persistence of its dynamic state.

Your Requirements: As a suitable candidate, you have an outstanding Master's degree or comparable degree in biology, physics, applied mathematics or related disciplines. You have knowledge in quantitative biology, soft matter/complex systems physics or statistical physics. You enjoy working in interdisciplinary and international teams and have programming skills. In addition, you are able to express yourself confidently both orally and in writing in English.

What we offer: We offer a three-year contract with the possibility of renewal (TV-L E13 75%) in a highly motivated team combining experimental and theoretical research on equal footing. As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to disabled candidates with essentially the same qualifications.

This position is part of the Graduate School Quantitative and Molecular Biosciences Munich

The Graduate School prepares young life scientists for the emerging era of quantitative, systems-oriented bioscience. Its innovative, international PhD program bridges traditionally separate disciplines—ranging from biochemistry and medicine to bioinformatics, experimental and theoretical biophysics, and applied mathematics. While maintaining a strong foundation in their primary discipline, QMB students gain expertise in multiple approaches, learn to think across fields, and develop the ability to communicate and collaborate effectively with scientists from diverse backgrounds.

Key components of the QMB program include:

- An interdisciplinary research project
- A structured program of coursework
- Professional skills training

Requirements
Applicants must hold a completed Master's degree (or equivalent) in a relevant field before starting the PhD. Full details of our requirements are available here:
https://qbm.genzentrum.lmu.de/application/requirements/

Applications must be submitted in English via our online tool:
https://www.portal.graduatecenter.uni-muenchen.de/ocgc/qmb

Timeline

- Application opens: August 21, 2025
- Application deadline: October 6, 2025
- Reference deadline: October 14, 2025
- Interviews: scheduled individually
- Notification of results: December 2025

For questions, please contact: office-qbm@genzentrum.lmu.de

QMB is a joint initiative of leading scientists from Ludwig-Maximilians-University Munich, the Technical University of Munich, the Max Planck Institute of Biochemistry, and Helmholtz Center Munich. Employment contracts are issued either by Ludwig-Maximilians-University Munich or one of the partner institutions.