The **Biotechnology Center (BIOTEC)**, an Institute of the Center for Molecular and Cellular Bioengineering (CMCB), and the **Cluster of Excellence "Physics of Life" (PoL)** offer a research position in the **Junior Research Group** for **Dynamics of Biomolecules** (Dr. Marcus Jahnel), as

Research Associate / Postdoc (m/f/x)
"RNA Biology in Biomolecular Condensates"
(Subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting **as soon as possible**. The contract will initially be limited to 2 years with the possibility of extension. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

The BIOTEC (https://tu-dresden.de/biotec) is a renowned interdisciplinary research institute of the TU Dresden that features cutting-edge technology platforms for Molecular Bioscience research. The Cluster of Excellence PoL (https://physics-of-life.tu-dresden.de) is an interdisciplinary research center for biology, biophysics, and computer science, funded by the German Research Foundation (DFG), and offers a wide range of support structures. You will be part of a Junior Research Group, *Dynamics of Biomolecules,* jointly affiliated at BIOTEC and PoL, and work in a highly collaborative environment. Our mission is to decipher the biology and physics of phase-separating protein-RNA systems, and specifically how RNA folding and RNA processing steps are affected by biomolecular condensates. To do this, we combine state-of-the-art single-molecule experiments (e.g. high-resolution dual-trap optical tweezers) with ideas and concepts from soft matter physics, data science, and molecular evolution. You will benefit from established collaborations with excellent basic research institutions, such as the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) and the Leibniz Institute of Polymer Research Dresden (IPF).

Tasks: *RNA folding and RNA looping in biomolecular condensates*

RNA information processing of non-coding RNAs is vital to understand the intricate biology of multicellular organisms. How is the behavior of regulatory RNAs affected by dynamic protein assemblies and condensates? To make progress, you will lead an interdisciplinary team of motivated PhD and Master students (both from physics and biology backgrounds) and work closely with colleagues studying the impact of disease-relevant mutations on the collective properties of biomolecular condensates. You will take advantage of our high-resolution dual-trap optical tweezers and newly established microfluidics platforms and develop quantitative assays to study RNA folding in the context of phase-separating RNA-binding proteins.

This project is run in close collaboration with the group of Prof. Dr. Simon Alberti, a pioneer in the field of biomolecular condensates, with whom we share a long-held fascination about dynamic protein-RNA assemblies (See for example our joint work in Patel & Lee *et al.*, Cell, 2015, Franzmann *et al.*, Science, 2018, and Wang *et al.*, Cell, 2018). Projects are typically conducted in small interdisciplinary teams. Like all team members, you know how to work independently, take the initiative if necessary, be a team player, and be comfortable leading a project team.

Skills and formal requirements:

- a university and PhD degree in molecular biology, cell biology, biochemistry, biology, medicine, bioinformatics, physics, or natural sciences
- Advanced molecular biology experience in working with RNA and/or RNA binding proteins *in vitro* or *in vivo*
- Experience in RNA bioinformatics, molecular evolution and phylogenetics is a plus

- Experience in working with phase-separating proteins or multi-component biomolecular condensates is a plus.
- Experience in biophysics experiments, specifically with single-molecule techniques including quantitative data analysis, is a plus
- excellent communication and writing skills, fluency in English (B2)

For any questions regarding the position, please feel free to contact Dr. Marcus Jahnel (marcus.jahnel@tu-dresden.de).

What we offer

Our teams embrace a diversity of disciplines and opinions, which we consider a driver for critical thinking and discoveries. We foster a collaborative spirit that is essential for making progress on challenging problems. We offer an international and interdisciplinary research environment of high standing and visibility with challenging midterm projects on diverse research topics. You will be part of the BIOTEC and PoL communities, the Dresden Campus with its nearby university hospital, and our extensive international network. We offer the opportunity to work at the interface of molecular cell biology, medicine, soft matter biophysics, and smart microscopy. There will be many opportunities to develop your academic or professional career, such as conferences, supervisions, and workshops, for example, through our Graduate Academy (https://tu-dresden.de/ga). We provide the opportunity to strengthen your skills in managing projects, leading interdisciplinary teams, and teaching science in person and digitally. According to the State Tariff for Civil Servants (TV-L), employment conditions include a comprehensive package with full social benefits and remuneration. A balance between family and work is vital to us. We offer flexible and family-friendly working hours and childcare through partnerships with nearby daycare centers.

DRESDEN concept

Applications from women are particularly welcome. The same applies to people with disabilities.

Please submit your complete application with a letter of motivation, a short summary of your research experience, your CV including a list of publications, and a copy of academic degrees by **May 17, 2022** (stamped arrival date applies) preferably by email in one single PDF document via the SecureMail Portal of the TU Dresden, https://securemail.tu-dresden.de to **yasmin.guenterberg@tu-dresden.de** with the subject line "PostDoc: RNA Biology in Condensates" or by mail to: **TU Dresden, Exzellenzcluster "Physik des Lebens", z.H. Herrn Dr. Marcus Jahnel, Arnoldstrasse 18, 01307 Dresden.** Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.
