The Cluster of Excellence “Physics of Life” (PoL) offers a position in the Junior Research Group of Dr. Natalie Dye, focused on the “Biophysics of epithelial growth and tumorigenesis”, as Research Associate / PhD student (subject to personal qualification employees are remunerated according to salary group E 13 TV-L) starting as soon as possible. The position is initially limited until August 31, 2024, which entails 65% of the fulltime weekly hours, with the option of extension. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). The position aims at obtaining further academic qualification (e.g. PhD). The goal of the project is to uncover biophysical mechanisms underlying patient-to-patient heterogeneity in tumor progression and drug response. The project will involve light microscopy and quantitative image analysis to characterize the cellular architecture and dynamic behavior of patient-derived tumor cell collectives. The project is funded by the German Cancer Aid from the Mildred-Scheel-Nachwuchszentrum Dresden and will benefit from collaborative interactions from various labs across the Dresden campus, including physicists, engineers, and physicians.

Tasks:
- 3D culturing of human gastrointestinal organoids in standard and novel matrices
- Preparing samples for light microscopy, including immunofluorescence labelling and transient transfection of live fluorescent reporters
- Generating stable fluorescently marked organoid lines with CRISPR
- Performing 3D light microscopy
- Quantitatively analyzing imaging data, such as cell segmentation and tracking
- Regularly interacting with collaborators with expertise in physics and clinical medicine
- Keeping pace with the relevant scientific literature
- Presenting data in lab meetings, institutional seminars, and professional conferences
- Contributing to the publication of scientific manuscripts on the research project
- Keeping a detailed notebook documenting the research activities and writing interim status reports/evaluations

Requirements:
- university degree (Diplom/Master) in biology, medicine, physics, biophysics, or bioengineering. Students with a strong physics background wishing to apply their expertise to a biological problem with medical relevance, as well as students with a cancer biology or medical background wishing to learn quantitative, physical approaches, are particularly desired
- strong interest in working in an interdisciplinary environment at the interface of physics, medicine, and cell biology
- at least basic-level programming experience, particularly in Python and/or R
- experience with advanced image analysis methods, machine learning, and/or physical modeling is desirable
- good command of spoken and written English
- excellent communication and presentation skills
- high motivation to perform scientific research
• ability and desire to work independently as well as together with others in a team
• Experience in cell culture, in particular 3D organoid or spheroid culture, is advantageous.

What we offer:
• Work in a collaborative, interdisciplinary environment
• Exposure to world-class research through regular institute seminars and retreats
• Mentorship for further career progression, including regular evaluations
• Support for presentation in professional conferences

Applications from women are particularly welcome. The same applies to people with disabilities. Please submit your application, including a detailed CV and a cover letter explaining your motivation to apply for this position, by May 4, 2021 (stamped arrival date applies) to TU Dresden, Exzellenzcluster PoL, z. Hdn. Frau Dr. Natalie Dye, Tatzberg 47 /49, 01307 Dresden or via the TU Dresden SecureMail Portal https://securemail.tu-dresden.de by sending it as a single pdf document to recruiting.pol@tu-dresden.de, with the subject “Application for open PhD position/Dye”. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis