Research profile for applicants

Name of DKFZ research division/group:	***Theoretical Systems Biology (B086)***
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Group homepage: *Visit this website for further information on current research and recent publications.*	***www.dkfz.de/en/modellierung-biologischer-systeme***

RESEARCH PROFILE AND PROJECT TOPICS

We are studying the dynamics of tissue stem and progenitor cells in vivo, how mutation accumulation and clonal selection shape somatic mosaicism in normal tissues, and how cancer evolves in such somatic mosaics (e.g., Körber et al. Nat. Genet. 2023 https://doi.org/10.1038/s41588-023-01332-y; Fanti et al. Cell Stem Cell 2023 https://doi.org/10.1016/j.stem.2022.12.014; Sacirbegovic et al. Immunity 2023 https://doi.org/10.1016/j.immuni.2023.01.003).
We are looking for a mathematically trained postdoc (e.g., with a training in physics, computational biology, applied mathematics or related disciplines) to work on somatic evolution. We are particularly interested in the transition from normal tissue regeneration to malignancy, and how to exploit this information for early detection of cancer. The postdoc will develop stochastic models of clonal evolution in somatic tissues. She/he will employ statistical inference and machine learning to learn models from original experimental data provided by our experimentalist collaborators, and test theoretical predictions with such data. We also encourage applications from scientists wanting to combine computational and experimental work.