Dr. Lutz Brusch



Research Group Leader – Center for Information Services and
High Performance Computing – Technische Universität Dresden

DEEP-HCC Co-Coordinator

Role in LiSyM-Cancer

- Co-coordinator and project leader in DEEP-HCC
- Application of simulation software for large spatially resolved models to integrate biomarker with spatial patterns from experiments and mechanistic models to reveal progression mechanisms and marker candidates

Expertise

- High performance computing for image- and data-driven construction and simulation of large spatio-temporal models and bifurcation analysis from dynamical systems theory
- Fostering modeling and simulation through modeling languages
- Standardized model exchange following the FAIR principles MultiCellML.org.
- Leading the development of Morpheus, an open-source modeling and simulation framework Morpheus.gitlab.io.
- Public model repository: Morpheus.gitlab.io/model.
- Parameter estimation tool: FitMultiCell.gitlab.io.

Degrees

- PhD in Physics, Max Planck Institute for the Physics of Complex Systems, Dresden

Professional Experience

- Since 2008, Group leader at Center for Information Services and High Performance Computing (ZIH), TU Dresden
- 2004 – 2007, Postdoctoral work at Center for High Performance Computing, TU Dresden
- 2003 – 2004, Postdoctoral work at Centre de Bioingenierie Gilbert Durand, Toulouse, France
- 1998 – 2002, PhD/Postdoctoral work at MPI-PKS, Dresden

Honors and Awards (selection)

- Otto Hahn Medal, Max Planck Society

Publications

2025-08-01	Deep neural cellular Potts models
2023-11-01	FitMultiCell: simulating and parameterizing computational models of multi-scale and multi-cellular processes. *Bioinformatics*
2023-07-31	Apical bulkheads accumulate as adaptive response to impaired bile flow in liver disease. *EMBO Rep*
2023-02-21	FitMultiCell: Simulating and parameterizing computational models of multi-scale and multi-cellular processes
2022-06-01	Diploid hepatocytes drive physiological liver renewal in adult humans *Cell Systems*