



## PhD Position (ETH Zürich): Scientific Computing – Cell-based Simulation Techniques and Software Development for Morphogenetic Simulations

The Computational Biology Group (Prof. Iber, [www.cobi.li](http://www.cobi.li) or [www.bsse.ethz.ch/cobi](http://www.bsse.ethz.ch/cobi)) at D-BSSE, ETH Zürich, studies morphogenetic problems by means of computer simulations.

Latest progress in imaging technologies now permits the study of tissue remodeling during organ development at cellular resolution. To define the mechanisms that control tissue growth and organ shapes we have started to develop novel computational frameworks that permit the simulation of biological tissue and signaling network dynamics at cellular resolution.

We are looking for a PhD student to build on our previous efforts towards a user friendly and extendible cell-based modeling platform. This includes the development of novel cell-based simulation techniques and the seamless integration of existing models and third-party libraries. As we are aiming for large-scale 3D simulations, *ab-initio* high-performance and massively parallel architectures are central. To optimize for state-of-the-art clusters and supercomputers [1], software development shall take place in close collaboration with the Scientific IT Services of ETH Zurich [2].

The position is available immediately. The applicant should have a strong background in numerical methods and algorithms, excellent programming skills (C++, HPC, massively parallel computing, MPI, visualization), and multi-disciplinary grasp and interest. Applicants should hold or expect to obtain a Masters degree in Scientific Computing, Computational Sciences, Computer Science or in a related discipline, e.g. Computational Engineering, Mathematics, Physics, Engineering, Computational biology.

For more information please visit our websites

<http://www.bsse.ethz.ch/cobi>  
[www.cobi.li](http://www.cobi.li)

or get in touch with Prof Iber ([Dagmar.Iber@bsse.ethz.ch](mailto:Dagmar.Iber@bsse.ethz.ch)).

[1] [https://www1.ethz.ch/id/services/list/comp\\_zentral/cluster/index\\_EN](https://www1.ethz.ch/id/services/list/comp_zentral/cluster/index_EN)

[2] [https://www1.ethz.ch/id/about/sections/sis/index\\_EN](https://www1.ethz.ch/id/about/sections/sis/index_EN)