



## ***Postdoc Position in Proteomics / Systems Biology of Development***

**A postdoc position is available in the group of Dr. Gunter Merdes at the Department of Biosystems Science and Engineering of ETH Zürich in Basel.**

Our research is at the interface of biology and medicine with computer science. We are particularly interested in disease-associated cellular signaling pathways coordinating cellular differentiation and proliferation programs during the development of multicellular organisms. Systems biology can facilitate the identification of potential pathway components at a large and comprehensive scale. We have started such an approach by describing a first set of 353 Notch regulators we identified with a combination of high-throughput whole-genome *ex vivo* and *in vivo* RNAi screening techniques, and network analyses in the model organism *Drosophila melanogaster* (Saj et al. 2010 Dev Cell).

In light of the evolutionary conservation of signaling pathways, our results will provide a resource for medical research in all animal models, and will allow us to model pathways in collaboration with computational biologists in the human system. This long-term goal can be expected to have a substantial impact on the exploitation of signaling pathways for human tissue engineering and disease treatment.

Currently, we are establishing cell-culture systems and techniques allowing for the purification of protein complexes participating in the regulation of signaling pathways. These techniques will be extended to a high-throughput platform to perform in-depth analyses of the protein-interaction networks surrounding signaling pathways in *Drosophila*. Newly identified interactions will be validated using genetics. Thus, state of the art molecular biology and computational methods have to be combined with classical aspects of *Drosophila* development and genetics, which requires readiness for unconventional thinking and to work interdisciplinary.

Accordingly, applicants require a strong background in molecular biology and mass-spectrometry, both in theory and practice. Experience in the area of computational biology, computer science, and mathematics/statistics is a plus but high motivation and enthusiasm as well as the willingness to go beyond scientific borders is expected. Furthermore, good knowledge of English both in writing and speaking is a must. The project is funded by the Swiss National Science Foundation and offers a competitive salary. Nevertheless, the successful candidate should be willing to apply for own funding while the project progresses.

The Department of Biosystems Science and Engineering of ETH Zürich is an integral part of SystemX.ch, the Swiss initiative in Systems Biology. It is located in Basel, a European hot spot for biomedical research, in close proximity of the Biocenter of the University of Basel, the Friedrich Miescher Institute for Biomedical Research, and the pharmaceutical and biotech industry. ETH Zürich is a major research university, offering an excellent environment for innovative and collaborative research across disciplines.

Please send the usual application material, including at least two references, as a single PDF file to [gunter.merdes@bsse.ethz.ch](mailto:gunter.merdes@bsse.ethz.ch).