



SystemsX.ch – The Swiss Research Initiative in Systems Biology

To date SystemsX.ch is Switzerland's largest ever public research initiative and is committed to a wide range of topics in basic research. The initiative specifically promotes the country's systems biology research and aspires to be amongst the best in the world in this scientific discipline.

SystemsX.ch is currently comprised of fifteen equal partners: the ETH Zurich, the EPF Lausanne, the Universities of Basel, Bern, Fribourg, Geneva, Lausanne, Neuchâtel and Zurich, the Università della Svizzera italiana, the Friedrich Miescher Institute for Biomedical Research, the Paul Scherrer Institute, the SIB Swiss Institute of Bioinformatics, the IBM Zurich Research Laboratory and the Zurich University of Applied Sciences. This unique, federally organized network thus enables an efficient interdisciplinary collaboration of well over 1000 scientists in 400 research groups working on approximately 200 projects.

The work of the initiative as a whole, as well as that of the individual research projects, is overseen by the Swiss National Science Foundation (SNSF). This independent control body also guarantees and promotes the international competitiveness of the initiative. Legally, SystemsX.ch is a simple partnership.

Systems biology – the language of life

Following on the heels of the Human Genome Project, systems biology is seen as the next big step in biological and medical research. The aim of this branch of modern science is to obtain a comprehensive understanding of the dynamic interactions between the discrete components of a biological system. This is the only way, for example, to understand the behavior of an organ as a whole and predict its responses to disturbances. The creation of the mathematical models required for this step and the measurement of the individual processes necessitate close cooperation between biologists, physicists, chemists, engineers, mathematicians, computer scientists and physicians. SystemsX.ch promotes the necessary network.

An investment in the future and Switzerland as a center of research

Systems biology research is costly. This research calls for highly developed technological platforms that no individual university or institute can afford.

The Swiss Federal Council and the Parliament granted SystemsX.ch CHF 120 million for the first phase (2008–2012). This enabled the initiative to support numerous research projects on a matching-funds principle: partner institutions are obliged to match any funds they receive with equal amounts from their own resources. The funded projects fall into four categories, which differ from National Science Foundation projects owing to their basic inter-institutional and interdisciplinary design.

In 2012, the various bodies involved, including the SNSF, the State Secretariat, the Swiss University Conference and the ETH Board, agreed upon the continuation of SystemsX.ch. The Parliament approved this decision and decided to provide further support, amounting to 100 million francs for the consolidation phase (2013-2016). After this period, the SystemsX.ch project funding will come to an end and the initiative will expire. Until then, it is planned to durably anchor the structures required for systems biology research in Switzerland's scientific community.