

Uwe Sauer, chairman of the SystemsX.ch Education Advisory Board

“The SystemsX.ch Advanced Lecture Course is always a big hit.”

In Switzerland, the options for basic and advanced training in the field of systems biology are manifold; a situation that can be ascribed in part to the activities of the SystemsX.ch Education Advisory Board. Its chairman, Uwe Sauer, is pleased with the current situation but also asks himself how the present standard can be maintained after the initiative runs out.



Uwe Sauer advises SystemsX.ch concerning educational questions.

Mr. Sauer, how does SystemsX.ch support young scientists?

Most importantly, SystemsX.ch promotes and supports interdisciplinary research projects. In practice, this means that SystemsX.ch offers young scientists the opportunity to carry out an Interdisciplinary PhD Project (IPhD) or a Transition Postdoc Fellowship (TPdF). The fact that PhD students are coached by two supervisors working in different fields makes IPhD Projects unique. With a TPdF,

postdocs change their specialization after their doctorate. This means that someone working in physics, for example, can take their first steps in biology.

How does SystemsX.ch look after researchers once their project has been approved?

The supervisors in each research group take care of most of the specialized training. Additionally, SystemsX.ch regularly organizes



retreats lasting several days which focus on the needs of young scientists. Initially, scientific themes took center stage during these events. In the past few years, however, we have moved on to promoting participants' soft skills.

Can you elaborate?

We broach subjects such as the challenges associated with interdisciplinary collaboration, or the difficulties that can arise when working with several mentors. The aim is to teach young scientists to communicate efficiently with various mentors and colleagues, and to act constructively as part of a team.

Are other training opportunities available to young scientists?

Yes, SystemsX.ch organizes and finances additional activities in collaboration with other institutions. One such event is the yearly "Practical Summer Course: Modelling for Systems Biology", which we organize jointly with the Centre for Genomic Regulation in Barcelona. Every other year, we also co-organize a summer school in collaboration with the SIB Swiss Institute of Bioinformatics, and offer an Advanced Lecture Course in Systems Biology with the University of Vienna, which is mainly financed by SystemsX.ch.

Is the main goal of these courses also the development of soft skills?

No, these events focus on high-level scientific training. The courses resemble conferences but are usually held in a smaller setting and are directed towards active learning and interactions between speakers and young scientists. These events also offer the participants many opportunities to socialize and to establish and cultivate their own network.

Do these training opportunities go down well with the young scientists?

The retreats are very popular. My collaborators who attended the last SystemsX.ch retreat came back thoroughly enthused. The SystemsX.ch Advanced Lecture Course is also always a big hit. Last year we were not able to carry out this event, which usually takes place every other year, and some PhD students from Switzerland and Europe even complained.

Does SystemsX.ch also influence university curriculums?

Not directly, as these lie within the responsibility of the universities. But by selectively promoting projects in the area of systems biology, the initiative sustainably influences the Swiss research environment. This is for example reflected by the increased interest in this field of research. Systems biology approaches are being used more

and more widely to address scientific problems. Consequently, the need for appropriately trained young scientists is growing continuously. Many universities are aware of this situation and have adapted their curricula accordingly.

For example?

The biology curriculum at the ETH Zurich has recently been revised. Bioinformatics, in-depth statistics and exercises in systems biology are now already taught at the bachelor level. We also offer two degrees in systems biology at the masters level. At the doctorate level, we have established a graduate school for PhD students with the University of Zurich. Within this program, the students are given additional training in systems biology in the form of block courses.

In December 2014, SystemsX.ch will launch its last call for young scientists. How will they be supported thereafter?

For the courses organized or co-organized by SystemsX.ch, we must find new solutions. We might, for instance, be able to integrate the retreats into the graduate school. But we need to find new sponsors for the international Advanced Lecture Course. However, nothing will change regarding the training offered by universities. As to research funding, I am convinced that by the end of the initiative, systems biology will be so well integrated into Swiss research that finding money for planned systems biology projects will no longer be a problem for future young researchers.

The next two SystemsX.ch events for young scientists

In February 9–10, 2015, SystemsX.ch will organize a two-day "Leadership and Management Skills for Postdocs" workshop.

The yearly SystemsX.ch Retreat for PhD students and postdocs will take place March 9–12, 2015.

The title of this event is "Better Results through Diversity".

Detailed information regarding these two events will be published as soon as it is available:

www.systemsx.ch > Events > Educational Events