



SystemsX

The Swiss Initiative in Systems Biology

Newsletter #4
December 22th
2005

ETH-Council speaks 10 Million CHF for SystemsX

Zürich. thm. The ETH Council funds SystemsX with 10 Million Swiss Francs in the years 2006 and 2007. This way SystemsX becomes a «Competence Center with a participation of the EPFL» as it is formulated in the press release issued by the ETH Council. For the time being, EPFL is not part of SystemsX yet, but has shown strong interest in becoming a partner university soon. The other «Competence Centers» of the ETH Domain deal with «Energy and sustainable mobility», «Environment and sustainability», and «Material Sciences and Technology».

The original press release by the ETH Council is available here: (in German only)

http://www.systemsx.ch/images/pdf/ETH-Rat_Systemsx.pdf

ESF calls for Action Plan in Systems Biology



Strasbourg. thm. The European Science Foundation (ESF) urges EU- and other European States to go for the «Grand Challenge for European Systems Biology» which demands an approach «similar to that taken by the USA in landing a man on the Moon and returning him to Earth». Europe faces «the decision whether it chooses to be a leader or a net importer of Systems-Biology-based knowledge and products», is written in a working paper by an expert group, including SystemsX scientist Uwe Sauer from the Institute for Molecular Systems

Biology. The expert group states that the large number of ongoing European Initiatives in Systems Biology «is too limited to achieve major breakthroughs in a reasonable time frame and to compete successfully with the USA and the Far East». The group calls for a «pan-European effort and new creative ways of organising and funding research in academia and industry». No numbers on the required funds are given, except that the available funds are much too low. A high level workshop to develop an appropriate financial model is proposed. For public acceptance the expert group recommends accompanying initiatives in social sciences and ethics to trigger a broad and open debate. A European Systems Biology Office (ESBO) shall coordinate the efforts.

More information on <http://www.esf.org/publication/212/SPB25SystemsBiology.pdf>

Roche and SystemsX collaborate in diabetes research



Zürich. thm. On December 13th a joint media release with Roche about a collaboration between the SystemsX Scientific Node «Competence Center for Systems Physiology and Metabolic Diseases» (CC-SPMD) and Roche was issued. The first industry/academic partnership in SystemsX includes more than 15 scientists at the CC-SPMD and Roche who cooperate

to find new pathways for Diabetes drugs. Roche finances the cooperation for three years with 2.1 Million CHF each year.

Find the complete media release on <http://www.systemsx.ch/news/press.html>

SystemsX TV Première with Randy Schekman



Zürich. thm. The D-BIOL-Lecture 2005 with Randy Schekman, Professor at the Department of Molecular and Cell Biology of the University of California at Berkeley, was successfully webcasted in the internet. Schekman's talk on transport vesicle morphogenesis attracted lots of people, and the room lecture hall G7 on the Hönggerberg was almost «full house». However, it is not so clear how many people were able to watch the

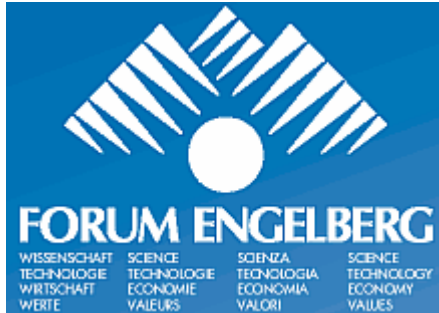
webcast in real-time or later via the link on <http://www.systemsx.ch/news/tv.html>.

To get a little statistic on the availability and use of the service, I ask you to answer the following questionnaire and send it back to marlies.horvath@systemsx.ch. If you did not try to watch Randy Schekman's talk, please do it now, and let me know how it works. Thanks a lot.

Questionnaire on SystemsX Première	
Did you try to watch SystemsX-TV on December 7 th in real time?	
If yes. Did it work? Could you see and/or hear something?	
Which operating system did you use?	
Which software did you use?	
Did you try to watch the talk via the link http://www.systemsx.ch/news/tv.html later on?	
If yes. Did you see or hear something?	
Which operating system did you use?	

Which software did you use?	
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Forum Engelberg 2006 on Systems Biology



The Forum Engelberg dedicates its next conference to Systems Biology. Chairman of the interesting scientific program is Prof. Ruedi Aebersold from the SystemsX Node Institute for Molecular Systems Biology. The conference takes place from May 21 – 23 2006 mainly in the Lucerne Culture and Convention Centre (KKL). Besides Ruedi Aebersold, the program comprises speakers like Alan Aderem (Institute for Systems Biology, Seattle), Hiroaki

Kitano (Systems Biology Institute, Tokyo), and Wolf Singer (MPI for brain research, Frankfurt). The multidisciplinary convention comprises also a session on political and social responsibilities with Kathy Riklin, member of the Swiss Nationalrat (parliament), and one on ethical issues with Alex Mauron from the University of Geneva.

For more information see: www.forum-engelberg.org

EU speaks 9 Million Euro for Computational Systems Biology

Bruxelles. EU. The Commission of the European Union has awarded EUR 9 million over five years for a new Network of Excellence that will make computational systems biology accessible to bench scientists throughout Europe and beyond. ENFIN, which stands for 'Experimental Network for Functional Integration,' brings together some of Europe's best computational and experimental biology labs – 20 groups across 17 institutions in 13 countries – to build a virtual institute that will put Europe at the centre of the systems biology revolution. From Switzerland only Serono is on board.

See the original [Press Release 31 2005 \[PDF\]](#)

SystemsX helps coordinating Action on Yeast Systems Biology

Zürich. thm. Uwe Sauer, Professor at the Institute for Systems Biology of the ETH Zurich, and Peter Philippsen, Professor at the Biozentrum of the University of Basel help to coordinate the Yeast Systems Biology Network (YSBN). Aims of the project are to create standardised methods for research, reference databases and PhD courses in yeast Systems Biology.

YSBN. Launched in November 2005, the project – Yeast Systems Biology Network (YSBN) - is a coordinated action involving 17 European universities and 2 start-up biotech companies. A budget of €1.3 million will be used by all partners, for activities aimed at facilitating and improving research in yeast systems biology. The EU team will create standardised methods for research, reference databases, it will organise an international conference (June 2006), and a number of PhD courses and workshops.

The project is due to run for three years and it involves some of the best European academic centres in this field of science: Biozentrum University of Basel, Bogazici University Istanbul, Budapest University of Technology and Economics and Hungarian Academy of Sciences, CNRS/LaBRI University Bordeaux, ETH Zurich, Gothenburg University, Manchester University, Lund University, Max Plank Institute of Molecular Genetics, Medical University Vienna, Stuttgart University, Technical University of Denmark, Technical University Delft, University of Milano Bicocca, Virje University Amsterdam, VTT Technical Research Centre Finland.

«Understanding yeast at the systems level is a great step forward in our effort to understand how human cells function as a whole. This will increase our ability to utilise metabolic engineering for industrial production and for healthcare purposes», says the project coordinator Professor Jens Nielsen of the Technical University of Denmark. The new technologies that may arise from metabolic engineering and systems biology will have a direct impact on medical biotechnology, industrial biotechnology, the food industry and many aspects of healthcare. The knowledge arising from the fields of yeast systems biology will lead to the development of personalized and preventive medicine (approach to healthcare tailor-made to fit individual DNA-profiles).

Even though this is a European project, a worldwide group of scientists will benefit from the international conferences, training activities and the creation of a database . Beyond of the funding confines of this EU project, YSBN is a world-wide organization of lead scientists with an interest in systems biology approaches to yeast (www.ysbn.org).

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Setting the standard for computer models of life

Cambridge. EMBL. Biologists are making a concerted effort to catalogue all the molecular components of living things, from the smallest molecules and ions to the genetic code. These «parts lists» help them to build computer models that simulate living processes. By combining models of simple processes they hope to understand and faithfully represent how entire biological systems - be they cells, organs, organisms or ecological niches - work. As well as contributing to the understanding of biology, this approach has numerous applications: for example, diseases can be simulated, and treatment regimens optimised.

«The computational systems biology community has made enormous progress in improving access to models», explains the EMBL-EBI's Nicolas Le Novère, lead author of the paper. «We've begun to share programming languages for encoding them (e.g. systems biology markup language, www.sbml.org) and to build public repositories so we can share them (e.g. www.ebi.ac.uk/biomodels). The current

challenge is quality control: systems biologists won't use publicly available models if they can't search them properly, or if a model's reuse is hampered by a tiny mistake in the way that it's encoded. MIRIAM (for Minimum information requested in the annotation of biochemical models) is an attempt to address these issues.»

MIRIAM has two parts: (1) a set of checks that match a model to its description ('reference correspondence', often a publication in a scientific journal), and (2) a set of 'annotation schemes'. The first of these documents the model's provenance: who created it, whether it's been modified, and a stable link to its full description. The second scheme links the components of the model to relevant bioinformatics resources. A model of alcohol metabolism in the liver would for example be annotated with links to the protein databases for all the enzymes involved in this pathway and database links to all the relevant metabolites. The aim of these annotation schemes is to make it easier for researchers to search models on the basis of their components, to contact the creators of the model if they need more information, and to track the history of a model if it has been modified.

MIRIAM's creators include representatives of four major repositories for models (BioModels Database, CellML Model Repository, DOQCS and SigPath), all of which are now in the process of making the models in their repositories compliant to MIRIAM. "By adopting MIRIAM as a voluntary code of conduct, we will be able to provide our users with a reasonable level of quality assurance, so they'll be able to get on with the business of generating and testing new hypotheses instead of recoding someone else's old hypothesis," continues Le Novère. "We also hope that journal editors will adopt MIRIAM as a quality control measure for papers that describe models. This approach has worked very well for other fields - for example the microarray community, by enabling authors, publishers and data providers to work together to improve access to meaningful biological information."

Public release date by EMBL: 6-Dec-2005

Contact: Cath Brooksbank

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44-012-234-92525

Original Press release:

<http://www.embl.org/aboutus/news/press/2005/press6dec05/press6dec05.pdf>

CC-SPMD Ph.D. Program stirs Interest

Zurich. thm.The Ph.D. Program of the Competence Center for Systems Physiology and Metabolic Diseases generates interest. 20 applicants from all over the world have applied for the positions. Applications are now evaluated by an admission committee. Candidates will have the opportunity to meet with group leaders of their choice to discuss possible areas of research. The approximate 12 accepted candidates should start their work within six months of acceptance to the program.

More information here: http://www.ccsmd.ethz.ch/education/phd_program

Particulars



Markus Stoffel (43) was appointed full professor for metabolic diseases at the ETH Zurich by the ETH Council. He will change from Rockefeller University to the Institute for Molecular Systems Biology.

Markus Stoffel's research concentrates on non-insulin-dependent diabetes mellitus. More on his work you find on <http://www.rockefeller.edu/labheads/stoffel/stoffel-lab.php>.



Konrad Basler (45) from the Institute of Molecular Biology follows Prof. Ernst Hafen as director of the SystemsX Scientific Node Center of Model Organism Proteomics and as representative of the University of Zurich in the Executive Committee of SystemsX. Basler's goal is to understand how specific signaling proteins function to control growth and pattern during animal development. Prof. Ernst Hafen in his new function as President of the ETH Zurich is also the new chairman of the Board of Directors of SystemsX.

General Remarks by the Editor

This is the fourth newsletter about SystemsX, the Swiss Initiative in Systems Biology. This newsletter appears sporadically to inform about what is going on in and around SystemsX. The circle of addressees is kept wide. Do not hesitate to spread the newsletter further. Anyone who wishes to be put on the list of addressees can subscribe by sending an email to thomas.mueller@systemsx.ch. By the same way anyone who does not want to receive this can be put off the list.

The aim of these newsletters is to help building a Systems Biology research community in Switzerland. Don't hesitate to send me your opinion and suggestions for enhancements on this newsletter.

Please let me know of any open positions in SystemsX.

If you read or hear any news which might be of interest for all SystemsX affiliates, please, let me know.

And especially for the SystemsX scientists: **Please, don't forget...
...to inform me about any of your upcoming papers in Systems Biology.**

I wish everybody a merry Christmas and a Happy New Year

Thomas Müller



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