

X-Letter

18

NEW SMALL PROJECTS

12 Interdisciplinary PhD and 8 Pilot Projects will be starting this year.

02

UNEXPLORED

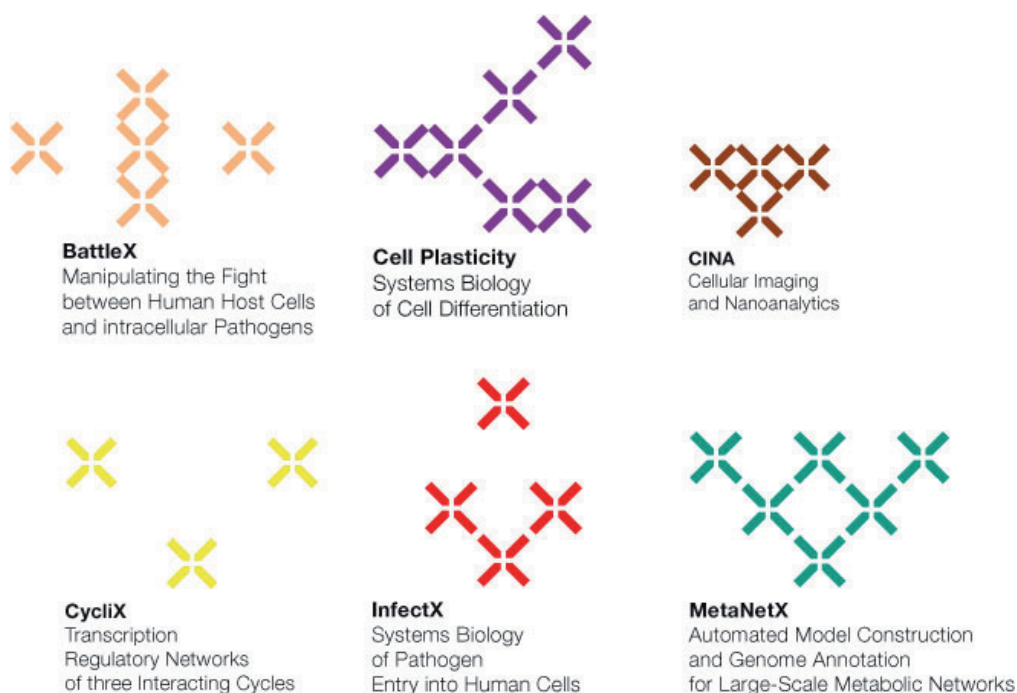
«LipidX» wants to better understand the hitherto underrated lipids.

04

INAUGURATED

The Department of Biosystems of ETHZ in Basel has been officially inaugurated.

06



The logos of the new six large Research, Technology and Development projects.

Grafic design: Ruedi Widmer

Ready for the second round.

SystemsX.ch will invest further 27.5 million francs in the next four years.

Thomas Müller
Bern. In the second call for proposals, projects focus on either the development of new technologies or the interface between biomedical research and genomics, respectively. In May, the Swiss National Science Foundation (SNSF) approved six RTD-projects. A total of 47 research groups from both Swiss Federal Institutes of Technology (ETH Zurich and EPF Lausanne), and the universities

of Basel, Lausanne, Geneva and Zurich will be working on these projects. The Friedrich-Miescher Institute of the Novartis Research Foundation is also represented as the only privately financed institution. At the same time, eight of the research groups from the above-mentioned universities are also part of the Swiss Institute for Bioinformatics. Each of the six RTD-Projects is coordinated by a researcher from a SystemsX.ch partner

Continued on page 2

Set up completed – thinking about what comes next!

Dr. Daniel Vonder Mühl
Managing Director of SystemsX.ch

After an 18-month implementation phase, the first stage of SystemsX.ch's journey is mapped out. Around a thousand scientists are assigned to 14 large RTD projects, 27 Interdisciplinary PhDs and numerous Pilot Projects and are researching life processes that are still not understood. This has brought about a cultural change in biology sciences, and the «chicken or egg – which came first?» dilemma has been breached. For the cooperation with small and medium-sized companies the scope and methods are set: lipids and infection mechanisms, new imaging procedures, the integration of microfluidics, and a lot more. Let's look forward to getting results and to a fruitful cooperation with the private sector.

SystemsX.ch is up and running, and this is where the actual work really starts. Forward thinking and continuous negotiation is called for: from cooperation among universities to the participation of private industry, from shifting from national to international collaboration.

And last but not least, planning for the second phase, due to start in 2012, has already begun.

continuation from page 1

institution. Scientists from the University of Basel lead three of the newly approved projects, while the other three are being led by scientists from the Department for Biosystems Science and Engineering (ETH Zurich), the University of Lausanne and the Friedrich-Miescher Institute, respectively.

The international review panel of the SNSF was responsible for the evaluation process of the 19 submitted projects. The decisions were reached on the bases of the scientific quality of the projects, and their alignment towards Systems Biology.

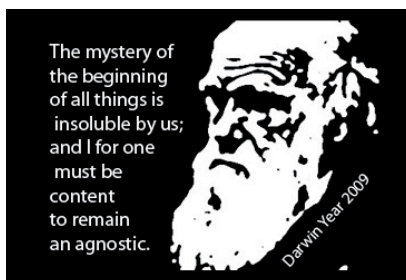
The total budget for the six RTD-projects is CHF 27.5 million. Institutions involved in each project are required to invest matching funds at least equal to those provided by SystemsX.ch. Total investment for these six RTDs projects will thus be at least CHF 55 million. The projects will be financed for the next four years, and research activities will start later this year.

New PhDs and Pilot Projects

Recently, the Swiss National Fond approved a further installment for interdisciplinary Doctorates. IPhD Students are mentored by two Professors from different disciplines. The 12 IPhDs were allocated to a total of 8 institutions. At the top of the list is the ETH Zurich with six IPhDs.

Finally the Scientific Board of Directors selected 8 Interdisciplinary Pilot Projects (IPP) for funding. Here two or three cooperating research groups receive funds for a one-year project, which is seen as a venture.

Note: See overview of new RTD on page 3 and, IPhD and IPP projects in the adjoining column. Further information on www.systemsX.ch



New Interdisciplinary Pilot Projects

Bern. The Scientific Executive Board of SystemsX.ch has approved following new Interdisciplinary Pilot Projects. These high-risk research projects will run for one year.

A computational high-throughput platform for characterizing transcription regulatory interactions

Applicants: Matteo Dal Peraro (EPFL); Sebastian Maerkl (EPFL)

High-Throughput Proteomic Screens using Matrix-Assisted Laser Desorption/Ionization Multiple Reaction Monitoring

Gerard Hopfgartner (UniGE/Unil); Bruno Domon (ETHZ)

Quantitative analysis and prediction of protein glycation

J.-C. Sanchez (UniGE); F. Lisacek (SIB-SIB)

RootoX: A systems approach to understand how herbivores cope with root-produced toxins

Ted Turlings (UniNE); J.-L. Wolfender (UniGE)

Exploration of Chemistry to Map Proteome/Pharmacome Interactions

Matthias Wymann (UniBS); Bernd Giese (UniBS)

How to bridge the sequence to function gap: application to uncharacterized human proteins

Amos Bairoch (SIB/UniGE); Marco Pagni (SIB)

Realtime metabolic biosensors

Nicola Zamboni (ETHZ); Matthias Peter (ETHZ)

Technology Development for High Throughput siRNA-Based Genetic Screens in Mammalian Cells

Thanos Halazonetis (UniGE); Jürgen Brugger (EPFL)

Interdisciplinary PhDs

Bern. Interdisciplinary PhD are mentored by two tutors from different disciplines. Information on the new IPhD is given below.

An integrative approach to study adipocyte extracellular signaling events linked to the development of metabolic disorders

Tutors : Christian Wolfrum; Bernd Wollscheid (ETHZ)

Developing and Testing a Mathematical Model for Cell Specification in the Embryo Sac of *A. thaliana*

Ueli Grossniklaus (UZH); Barbara Hellriegel (UZH)

Genome-wide prediction of coactivator-controlled transcriptional networks using data from ultra-high-throughput sequencing technologies

Christoph Handschin (UniBS); Eric van Nimwegen (UniBS)

Genomic and physical constraints that regulate cellular shape

Rafael Carazo Salas (ETHZ); Gabor Székely (ETHZ)

Predicting functional redundancy in protein networks

Niko Beerenwinkel (ETHZ); Gunter Mendes (ETHZ)

Quantitative analysis and mathematical modeling of polarity establishment in *C. elegans* embryos

Pierre Gönczy (EPFL); Felix Naef (EPFL)

A system's level analysis of the spatio-temporal regulation of signaling during polarized cell migration

Olivier Pertz (UniBS); Dagmar Iber (ETHZ)

Genomic analysis of information transfer along the DNA by transcriptional interference

Attila Becskei (UZH); Erwin Bolthausen (UZH)

Genetic and epigenetic diversity of tumors: A combined deep sequencing and mathematical modeling approach to the somatic evolution of cancer

Niko Beerenwinkel (ETHZ); Christian Beisel (ETHZ)

Microelectronics and genetics to study retinal neuronal circuit dynamics

Andreas Hierlemann (ETHZ); Botond Rosta (FMI)

Proteomic analyses of post-translational modifications

Isabelle Mansuy (ETHZ); Ivo Sbalzarini (ETHZ)

Time-resolved luminescence imaging of cells and tissue in a Lab-on-a-Chip using lanthanide-doped nanoparticle labels for breast cancer detection

Martin Gijs (EPFL); Hans-Anton Lehr (Unil)

The new RTD projects at a glance. Two projects are devoted to infection biology.

BattleX



Head of research:
Dirk Buman,
Biozentrum of
University of Basel

Partners: Universities of Basel and Zurich, EPF Lausanne, ETH Zurich, Swiss Institute of Bioinformatics (SIB), University of California in San Diego.

Infections are still considered the main cause for disease and death. Resistance to antibiotics is becoming more common, and tight pipelines for new drugs continuously reduce the possibilities for treatment.

BattleX – Manipulating the fight between human host and intracellular pathogens – is looking for a light at the end of this dark tunnel by manipulating the fight between human host and intracellular pathogens. Starting with the *Shigella* bacteria, which cause dysentery in 160 million people worldwide, researchers want to find out what kind of interaction exists between the human host cells and the pathogen. thm

CycliX



Head of research:
Nouria Hernandez,
Center for Integrative Genomics of University of Lausanne.

Partners: EPF Lausanne, Universities of Lausanne and Geneva.

Our life is determined by cycles. The most evident of these is the day-night rhythm, to which our organism adapts itself automatically. Further important

cycles are the cell division cycle, which determines the regeneration of our body, and the nourishment cycle, which keeps all our different «systems» functioning.

CycliX – Transcription regulatory networks of three interacting cycles – is committed to understanding in depth each of these three cyclic regulatory mechanisms, finding out what they have in common, and determining how they achieve synchronization. thm

Cell Plasticity



Head of research:
Susan Gasser, University of Basel and Director of the Friedrich Miescher Institute

Partners: FMI, University of Basel.

The development process of living organisms, from a fertilized egg cell to a fully formed organism, is still a miracle. How a cell knows what it is supposed to become, and the way it puts this information into practice, is barely understood.

Cell Plasticity – Systems Biology of Cell Differentiation – wants to reveal the mystery, and discover the fundamental laws of this basic regulation mechanism. With this target in mind, researchers will be examining two different cell systems in mice: a healthy one and a cancer system. thm

CINA



Heads of research: Andreas Engel and Henning Stahlberg, University of Basel.

Partners: University of Basel, EPF Lausanne, ETH Zurich.

As in many sciences, imaging technology is also indispensable in Systems Biology. Microscopes though have had their difficulties keeping up with the ever-increasing pace of sequencing methods in biology.

The RTD project **Cell Plasticity – Cellular Imaging and NanoAnalytics** – wants to change that. Researchers want to develop methods by which a single cell and its content can be imaged using nanometer technology. The ultimate goal is to develop imaging technology that is able to capture a cell's entire complement of proteins (the proteome). thm

InfectX



Head of research:
Christoph Dehio,
Biozentrum of University of Basel.

Partners: ETH Zurich and Universities of Basel and Zurich.

One new line of defense against bacterial and viral infections is discovering drugs that attack specific host proteins, which pathogens use to gain entry into the cell.

InfectX – Systems Biology of pathogen entry into human cells – aims to identify several components relevant to pathogen invasion, and build mathematic and calculation-based models that will make it possible to simulate these processes. In a later stage, researchers want to find new targets that enable drugs to fight off the pathogen attack. thm

MetaNetX



Head of research:
Jörg Stelling,
Department of Biosystems,
ETH Zurich

Partners: ETH Zurich, EPF Lausanne, Swiss Institute of Bioinformatics

One key component of Systems Biology are mathematical models capable of simulating biological processes. Once such models exist, interaction can start to take place between theory and experiment – as in physics – and accelerate the emergence of new findings.

To generate a mathematical model of the yeast cell is therefore the aim of project **MetaNetX – Automated model construction and genome annotation for large-scale metabolic networks**. The technology project will design calculation-based methods and tools, which will enable researchers to build metabolic networks and thus discover hitherto unknown metabolic networks. thm

A cell contains up to 1000 different lipids. Nevertheless, lipids remain **the underestimated building blocks of life**. LipidX wants to change this state of affairs.



Project leader Gisou van der Goot is satisfied : «Without SystemsX.ch, we couldn't afford this mass-spectrometer.»

Photo thm

Thomas Müller
Epalinges. In many respects the shell of cells has remained a *terra incognita* for biological research despite the fact that biologists have been studying cells since the invention of the microscope. For the main part, however, their interest has focused on proteins and the hereditary substance DNA, firstly because life takes place there, secondly because this is where the information, the genome, sits.

But there is also another, third reason, why DNA and proteins have stood – and continue to stand – in the foreground: they are comparatively easy to

examine. Lipids however, which are the components of the plasma membrane, are difficult to access experimentally. Their chemical structure – consisting of two hydrophobic fatty acid tails and a hydrophilic head – gives them high degrees of freedom. Furthermore, they do not crystallize as proteins and DNA do. Nonetheless, the vital importance of lipids stems from the fact that life would not be possible without them because lipids do the job of outlining a cell by separating it from its environment. They achieve this separation by forming a double membrane, a so-called bilayer, which is not rigid like a wall, but

behaves rather like a two-dimensional liquid, similar to an oil film on water.

A thousand different types

«A single type of lipid would suffice to build a bilayer», explains Gisou van der Goot, «but neurons, for example, exhibit up to 1000 different lipids. Alas, we have no idea what the majority of them actually do». This is about to change. Engineer and biophysicist van der Goot is professor at the Global Health Institute at EPF Lausanne and she leads LipidX, one of SystemsX.ch's research, development and technology projects. In all, 14 research groups from six Swiss and one foreign university are looking to eliminate the blank spaces on the shells of cells.

Lipids have the unfair reputation of being nothing more than bricks in a wall, indispensable, but uninteresting. What has been clear for a long time already is that they actually constitute extremely intelligent «walls». Lipids not only separate the inside of the cell from the outside and divide cells into compartments. Certain lipids also structure the bilayer with so-called microdomains, thereby allowing different reactions to run off at different places and at different times in the same cell. Other lipids escort proteins to their workplace in the plasma membrane, where again different lipids help these membrane proteins to do their job.

Resistance against anoxia

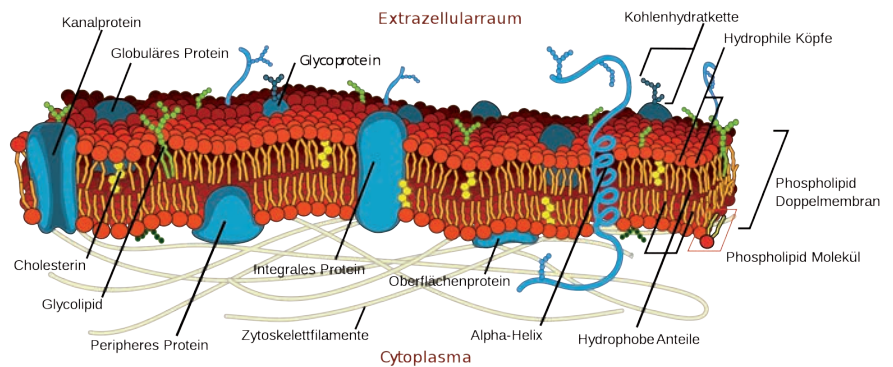
Furthermore, as new research shows, lipids also perform physiological tasks of the utmost importance. In a recent article in «Science» Howard Riezman and Jean Claude Martinou, both professors at the University of Geneva, demonstrate that lipids play an important role in the resistance of animals to oxygen depletion (anoxia). It turns out that it is the length of some lipids called ceramides that is decisive for the protection against anoxia.

Riezman and Martinou owe this new knowledge to lipidomics. Analogous to genomics and proteomics that cata-

logue genes and proteins in a systematic way, the aim of researchers working on lipidomics is to characterize all lipids that our cells contain and produce.

A map of the cell

The still young and developing technology needed for this task is at the center of LipidX. «We want to draw a map of the cell that shows which lipids occur where and what they do», says Gisou van der Goot, outlining one of the principal purposes of LipidX. In a set of model organisms, such as yeast, fruit fly, worm, but also in vertebrate animal cells, LipidX researchers will systematically be investigating the 400 genes that govern the lipid metabolism. Using yeast, the first step of this investigation is to create mutants with



The double membrane separates the cell from its environment.

Illustration: Wikipedia

only one of these genes missing, and then to look for a change in the lipid composition and determine the consequences.

This entails a lot of exacting, arduous work, some of which can fortunately be done, at least in part, by

robots in the shape of high-throughput-mass-spectrometry equipment. «Without SystemsX.ch we couldn't afford this mass-spectrometer.», van der Goot says, as she looks forward to the new paths that LipidX will enable researchers to embark on.

Introducing the most famous Lipid: Cholesterol



«Sunny side up» a cholesterol bomb?

Photo: Wikipedia

The best known and at the same time most disputed li-

pid in the general public is cholesterol. It increases the stability of the cell membranes and, together with proteins, participates in the signal transduction. The human body contains about 140 g of cholesterol, two of which are replaced by the body every day. Daily food intake contributes roughly a tenth of the replaced quantity.

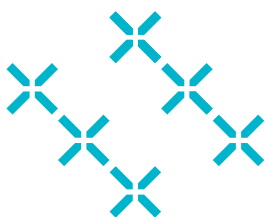
Contrary to a widespread belief, there is no good or bad cholesterol. Nor is it fat, as is also widely as-

sumed: it is simply vital to life. There is a recurring debate as to whether an increased cholesterol level in the blood actually increases the danger of cardiac infarcts, and, concomitantly, whether the frequent prescription of anti-lipidemic drugs really extends life. The cholesterol level is increased by so-called lipoproteins of low density (LDL), which transport cholesterol from the liver to the organ tissues. Therefore, LDL cholesterol-com-

plexes are called «bad cholesterol», while the «good» HDL cholesterol-complexes (high density lipoproteins) are responsible for lowering cholesterol levels.

Also controversial is whether the cholesterol level in the brain is linked to Alzheimer disease. Increased cholesterol levels are suspected to promote the development of the so-called plaques in the brains of Alzheimer patients. Here, too, conclusive evidence is still outstanding. thm

«LipidX – Systems Biology of Biomembranes» at a glance



LipidX
Systems Biology of
Biomembranes

Principal investigator	Prof. Gisou van der Goot
Involved research groups	Global Health Institute, EPFL; Département de Biochimie (3); Université de Genève; Institute of Zoology, University of Zurich; Laboratory for Computational Systems Biotechnology, EPFL; Institute of Biochemistry, ETH Zürich; Institute of Chemical Sciences and Engineering, EPFL; ISREC, EPFL; Institute of Molecular Systems Biology, ETHZ; Institute of Computational Science, ETHZ; Microbiology and Molecular Medicine, Faculty of Medicine, University of Geneva; Center for Integrative Genomics and Department of Physiology, University of Lausanne; Department of Biochemistry and Department of Biological Sciences, National University of Singapore; Biozentrum, University of Basel.
Number of research groups	14
Researchers : Administration	59 : 0.4
Biologists : Non-biologists	4:1
Overall Budget (2008-2011)	20'738'370, thereof 8'138'000 CHF from SystemsX.ch

PRAISE AND HONOURS

Gisou van der Goot and Stefan Kunz

Lausanne. The research groups working with Professor Gisou van der Goot from the EPF Lausanne and Professor Stefan Kunz from the University of Lausanne received the Prix Leenaards for their research on fatal pathologies, inflammation and tumor skin diseases. The two groups share the prize money of CHF 1.2 million from the Leenaards Foundation. NET

Ruedi Aebersold

Reykjavik. Professor Ruedi Aebersold from the Institute of Systems Molecular Biology at ETH Zurich is to receive the Pierce Affinity Award from the International Society of Molecular Recognition. The official ceremony took place at the University of Iceland, in Reykjavik during the ISMR biennial meeting on July 12-16, 2009. The Pierce Affinity Award is given to leading scientists in the various fields of affinity technology/bio-recognition. NET

Lukas Burger and Julien Roux

Lausanne. The winner of the CHF 10'000 prize at the SIB Young Bioinformatician Awards is Lukas Burger (29). Burger has worked for the past four years as a member of the bioinformatics and systems biology research group at the Biozentrum of University of Basel. Julien Roux (25) is the winner of the 2009 SIB Graduate Paper Awards. For the past two-and-a-half years Roux has worked at the SIB in the Evolutionary Bioinformatics group of the University of Lausanne. His prize-winning articles appeared in PLoS Genetics, December 2008. thm

Amos Bairoch, founder of the protein data base Swiss-Prot is building now a database of human proteins



Amos Bairoch

Geneva. The Swiss Institute for Bioinformatics (SIB) is starting to exploring the systematic functional description of human protein, and has launched therefor the Computer and Laboratory Investigation of Proteins of Human Origin (CALIPHO).

Under the leadership of Amos Bairoch, professor of Bioinformatics at the Medical Faculty of the University of Geneva, the project's objective is to systematically record and file the functional human proteins through a combination of bioinformatics and laboratory experiments. «With this procedure, a new chapter begins in the history of computer supported biology», rejoices

the director of SIB, Ron Appel, when referring to the ambitious project. «Together with Swiss-Prot we are going to find new ways to draw new findings out of the huge amount of information available to biologist these days», summarizes Bairoch as being the goal of CALIPHO.

Swiss-Prot in new hands

The CALIPHO group will be part of, and work closely with, the University of Geneva; further cooperation is planned with research groups from the Universities of Geneva and Lausanne, with EPF Lausanne, as well as with laboratories in other countries, including China.

Bairoch will be able to apply the expertise accumulated over the past two decades through his implementation and maintenance of

the world's most precise protein database, Swiss-Prot. He will pass on the direction of Swiss-Prot to Ioannis Xenarios, who will in addition keep his position as director of Vital-IT, the data center of SIB.

A pioneer

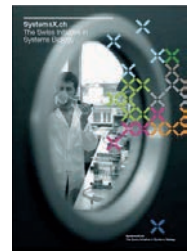
Bairoch is one of the pioneers in Bioinformatics. Over the past 23 years, he has diligently secured, organized and maintained data compiled by scientists about proteins. What for a long time was seen as a useless exercise came to be an indispensable part of biomedical research. Swiss-Prot, officially called UniProt today, contains over 500'000 detailed descriptions of proteins, information thousands of scientists can access daily. thm.

www.uniprot.org/

Brochure published

Zurich. SystemsX.ch announces the publication of its new brochure containing 22 pages of information on the currently largest Swiss research initiative. The

brochure is published in three versions (English, German and French) and is addressed to the SystemsX.ch research community and to the general public. NET



New Administrative Staff



Zurich. Vanessa Deppeler joined the SystemsX.ch Management Office team on June 2, 2009 as a new member of staff. She replaces Andrea Kaufmann. Her main work will be to support Daniel Vonder Mühl in general office management, and also Peter Kunszt in the SyBIT project. Vanessa Deppeler holds an Associate Degree in Business Administration (KV) and speaks German, English and French.



We take this opportunity to thank **Andrea Kaufmann** for her outstanding administrative support to SystemsX.ch over the past two and a half years. From the very first phase of SystemsX.ch implementation in January 2007 she gave invaluable support to Daniel Vonder Mühl. Andrea has chosen to pursue a PhD in Social Anthropology at the University of Basel. We wish her all the best for the future. VDM

At the beginning of June **ETH Zurich** celebrated the opening of the **Department of Biosystems in Basel**



State secretary Mauro Dell'Ambrogio: likely continuation of SystemsX.ch
Picture Heidi Brönnimann

Thomas Müller **Basel.** A two-year preparatory phase reached its culmination at the beginning of June when ETH Zurich celebrated the inauguration of the Department of Biosystems in Basel (DBSSE). To mark the day a scientific symposium was followed by an open door day and an official ceremony. In his speech to an audience that included representatives of numerous politicians from the cantons Basel-Stadt and Basel-Landschaft, ETH President Ralph Eichler spoke frankly of the difficulties surrounding the setting up of an outstation like the DBSSE; initial attempts had failed. Now, though, following the relocation of Professors Martin Fussenegger, Jörg Stelling, Andreas Hierlemann and Sven Panke from Zürich to Basel, he sees the youngest department of ETH as set up for success.

After a two-year build-up phase, seven professorships with nine research groups are settled in, and 15 additional professorships are scheduled in the medium term. The mission would be an exciting experiment, enthused a visibly good humored Eichler, and cited a piece of advice he had received from his doctorate mentor: «One has to take risks, but be sure that they pay off».

DBSSE has is dedicated to constructive Systems Biology and synthetic biology while the ETH Institute for Molecular Systems Biology concentrates on analytical Systems Biology, explained Martin Fussenegger, acting chairman of the DBSSE. Synthetic biology wants to structure biological building blocks in new ways, producing something «beautiful and meaningful». Fussenegger used a metaphor borrowed from the technical world to illustrate his point: an Aston Martin, a car consisting of the same components and materials as other cars, but one that is both beautiful and meaningful.

SystemsX.ch proving its worth

Mauro Dell'Ambrogio, State secretary for Education and Research expressed the Swiss Federal Council's good wishes for the enterprise. He recognized the DBSSE as an incubator for the Swiss Systems Biology initiative SystemsX.ch, whose implementation and organization seemed to be proving its worth. He spoke of a «likely continuation of the initiative for the period 2012-2016».

In the afternoon, the DBSSE opened its laboratory doors to the public. About 500 interested parties took the opportunity to peer over the shoulders of the systems biologists. A few days previously, the DBSSE scientists had celebrated the occasion with a symposium filled with prominent specialists. Among others, Nobel Prize winner Eric Wieschaus (Princeton) gave an acclaimed presentation. Wieschaus's career started when he became the first doctoral student of the fruit-fly researcher Walther Gehring at the Biozentrum of the University of Basel.

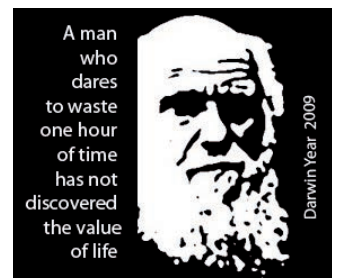


Building molecules during the open door day.

Photo: Heidi Brönnimann

NEWS

Rockefeller and Princeton Join Forces New York/Princeton. The Rockefeller University and the Institute for Advanced Study in Princeton, N.J., have established a joint initiative in biology supported by a \$10 million gift from The Simons Foundation. The initiative, involving biologists, mathematicians, physicists and computer scientists, will explore quantitative and theoretical approaches to biological problems. The Institute for Advanced Study and Rockefeller will fund early stage, high-risk projects and set up an annual joint conference, as well as regular seminars, workshops and lectures. Rockefeller University's Stanislas Leibler, head of the Laboratory of Living Matter at Rockefeller, has been appointed to a joint professorship as part of this initiative. thm



Center for Systems biology inaugurated in Freiburg

Freiburg i.Brsg. A conference took place in June to mark the official inauguration of the Zentrum für Biosystemanalyse (Center for Biosystems Analysis) at the University of Freiburg in Freiburg (Breisgau, Germany). In addition to scientists from the life science field, the conference also included experts from industry, telecommunications, information technology, logistics and the medical community. thm

New SEB members nominated



Andreas Hierlemann is full professor of Biosystems Engineering at the Department of Biosystems, Science and Engineering of ETH Zurich in Basel and head of the Bio Engineering Laboratory (BEL). Prior to this position he was associate professor of microsensors in the Physics Department at ETH Zurich. The focus of his research is the direct interfacing of electrogenic cells to microelectronic chips, the development of CMOS-integrated chemical and biosensor microsystems, and microfluidic techniques for single-cell handling and analysis. Hierlemann has a doctoral degree in physical chemistry from the Eberhard-Karls University in Tübingen, Germany, and has held postdoctoral positions in Texas, and in Albuquerque, New Mexico.

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Olivier Michielin is MD-PhD, Assistant Professor at the University of Lausanne and Medical Faculty Group leader at the Swiss Institute of Bioinformatics at the Ludwig Institute for Cancer Research, Lausanne. He obtained a diploma of Physics in 1991 at the EPFL and an MD from the University of Lausanne in 1997. He pursued his PhD training under the supervision of Jean-Charles Cerottini (LICR) and Martin Karpplus (Harvard and Strasbourg Universities). He was appointed Group Leader of the SIB in 2002 and became an Assistant Professor and lecturer at the Medical Faculty of Lausanne in 2004 and 2005, respectively. In addition, Michielin is currently finishing a medical oncology specialization at the Multidisciplinary Oncology Center (CePO) in Lausanne.

NET



Christian Mazza obtained his PhD in Stochastics from the University of Fribourg and held a post-doc position at the University of Berkeley, USA. He worked as a Master Assistant and Professor at the Universities of Geneva, UCLA (USA) and Lyon and was appointed Professor of Mathematics at the University of Fribourg in 2006. He focuses on stochastic models of gene expression, studying various models for gene regulatory and transcription networks. Christian Mazza is a partner in the SystemsX.ch project: «Plant Growth», specializing in the interaction of molecular processes, auxin and Pin transport, with mechanics, to understand plant growth. He is also involved in a SystemsX.ch IPP ecology project, more precisely in food web modeling at the University of Fribourg.

NET



Ian Sanders began his research career in plant ecology (PhD, University of York, UK) and became interested in symbioses between plants and microorganisms. After postdoctoral positions in INRA Dijon and Pennsylvania State University, he spent eight years as junior group leader at the University of Basel. Sanders became a Swiss National Science Foundation Professorial Fellow in 2000 at the Department of Ecology and Evolution in Lausanne, where he now holds a tenured position. His work concentrates on the evolutionary genetics and genomics of mycorrhizal fungi. Ian Sanders is also the director of the Inter University Doctoral Program in Ecology and Evolution for the Universities of Lausanne, Fribourg, Geneva, Neuchatel and Bern.

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The Glossary of SystemsX.ch

Research, Technology and Development Project (RTD project): SystemsX.ch's flagship project, multi-year duration.

Interdisciplinary Pilot Project (IPP): Research involving risks. One-year duration.

Interdisciplinary Doctorate (IPhD): Duration of 3 to 4 years.

Board of Directors (BoD): SystemsX.ch's highest steering body composed of the presidents, rectors and directors of all participating institutions.

Scientific Executive Board (SEB): Operative committee composed of scientists from the participating institutions.



SystemsX.ch
The Swiss Initiative in Systems Biology

IMPRESSUM

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Thank you and goodbye

The SEB members are elected for a mandated period of two years. Professors Susan Gasser, Laurent Keller, Demetri Psaltis und Amalio Telenti were among the first SEB members, and were engaged in SystemsX.ch since July 2007.

In keeping with their decisions not to extend their mandate, they have been gradually replaced since the end of 2008. We thank the four ex-SEB members for their important and valuable commitment to SystemsX.ch and wish them all the best and continuing success.

VDM

Conferences and Events

Aug 09 - 12, 2009	Foundations of Systems Biology in Engineering	Denver, USA
Aug 30-Sep 4, 2009	10th International Conference on Systems Biology	Stanford, USA
Sep 16-18, 2009	4th International Conference on Computational Bioengineering	Bertinoro, Italy
Nov 18, 2009	All-SystemsX.ch-Day 2009	Bern
Dec 11-12, 2009	Latest Advances in Drug Discovery Modelling & Informatics	Hyderabad, India