SystemsX.ch
Project Overview
2nd Generation Projects
from 2012 onwards

SystemsX.ch
The Swiss Initiative in Systems Biology
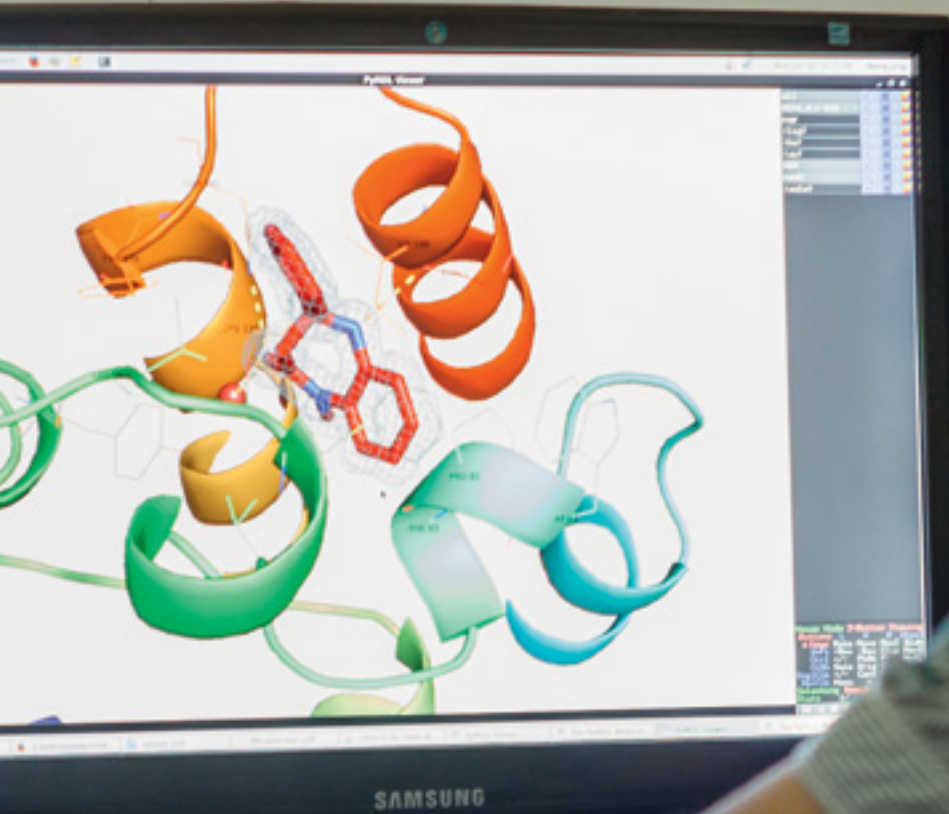
SystemsX.ch: Project categories

Research, Technology and Development (RTD) Projects

… focus on quantitative biology, integrating a number of different scientific approaches including the most recent developments in theory and modeling. At least two partner institutions and several research groups representing complementary fields contribute to these large-scale projects.

SyBIT, SystemsX.ch's bioinformatics project, supports as a central service the initiative's RTD Project groups in coping with their flood of digital data.

Project duration: 4 years
Funds*: approximately CHF 150 million

Medical Research and Development (MRD) Projects

… are large-scale projects in which systems biology approaches are specifically applied to medically or clinically relevant topics. These projects involve a number of interdisciplinary research groups working in at least two different partner institutions.

Project duration: 3 years
Funds*: approximately CHF 18 million

Transfer Projects (TF)

… are collaborations between research groups working in the academic and private sectors (industry, SMEs, hospitals, etc.). The aim of these projects is to promote knowledge transfer between academia and private institutions and to strengthen applied research in systems biology.

Project duration: 2 years, with optional one-year extension
Funds*: approximately CHF 3 million

Transition Postdoc Fellowships (TPdF)

… are aimed at expanding young scientists' basic knowledge in systems biology. Having completed their doctorates, emerging researchers switch to a new area or discipline in order to implement innovative ideas at the interface between classically separate fields.

Project duration: 2 years, with optional one-year extension
Funds*: approximately CHF 10.5 million

Interdisciplinary PhD Projects (IPhD)

… serve the purpose of training and encouraging future systems biologists. The main focus of these PhD positions is on collaboration between two different disciplines relevant to systems biology. The young scientists are therefore jointly supervised by two advisors working in different fields.

Project duration: 3 years, with optional one-year extension
Funds*: approximately CHF 18 million

Special Opportunities Fund (SpecOpp)

… promotes projects which do not qualify for other types of funding, but which have the potential to contribute significantly to systems biology research in Switzerland. Thanks to this fund, SystemsX.ch can flexibly support new projects, as well as co-finance novel technologies required for existing projects.

Funds*: approximately CHF 1.6 million

* Represents the total investment sum in this category (2008–2016).

Research, Technology and Development (RTD) Projects

AgingX
Systems Genetics Approach to the Biology of Aging

Principal investigator
Prof. Bart Deplancke
Laboratory of Systems Biology and Genetics
EPF Lausanne
bart.deplancke@epfl.ch

Partners
EPFL, UniL

Scientific fields
- Biology of aging
- Genetic and phenotypic variation
- Systems genetics
- Regulatory genomics
- Metabolism

Technologies
High-throughput sequencing, metabolomics, statistical genetics, network modeling

Approved 2013

HostPathX
Modeling and Manipulating the Phagocyte-Mycobacteria Interface

Principal investigator
Prof. Thierry Soldati
Department of Biochemistry
University of Geneva
thierry.soldati@unige.ch

Partners
UniGE, UZH, TU Darmstadt, SIB

Scientific fields
- Host-pathogen interactions
- Metabolism
- Bacterial virulence
- Innate immunity
- Engineering
- Anti-infection drugs

Technologies
Infection monitoring, live cell microscopy, molecular genetics, high-throughput dual RNA-sequencing, bioinformatics, mathematics and modeling, small compound screening, model systems

Approved 2013
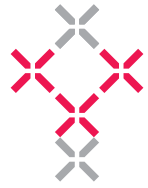
MalarX
Systems Medicine of Malaria

Principal investigator
Prof. Vassily Hatzimanikatis
Laboratory of Computational Systems
EPF Lausanne
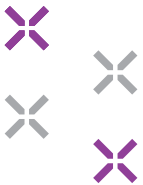vassily.hatzimanikatis@epfl.ch

Partners
EPFL, UniGE, UniBE

Scientific fields
- Engineering
- Medical microbiology
- Malaria
- Metabolomics
- Molecular parasitology
- Cell biology

Technologies
Mathematics and modeling, live and intravital microscopy, 3D cell culture, LC-MS/MS

Approved 2013

MERIC
Mechanisms of Evasive Resistance in Cancer

Principal investigator
Prof. Niko Beerenwinkel
Department of Biosystems Science and Engineering
ETH Zurich
niko.beerenwinkel@bsse.ethz.ch

Partners
ETHZ, UniBas

Scientific fields
- Hepatocellular carcinoma
- Signaling pathways
- Liver cancer
- Genetic tumor
- Progression
- Genomics
- Phosphoproteomics

Technologies
Mathematics and modeling

Approved 2013

MicroScapesX
Design and Systems Biology of Functional Microbial Landscapes

Principal investigator
Prof. Jan Roelof van der Meer
Department of Fundamental Microbiology
University of Lausanne
janroelof.vandermeer@unil.ch

Partners
UniL, EPFL, ETHZ, CHUV

Scientific fields
- Experimental microbiology
- Environmental sciences
- Medical microbiology
- Synthetic ecology
- Bioremediation
- Metabolomics

Technologies
Experimental biology, mathematics and modeling, genomics

Approved 2013

MorphogenetiX
Modeling the 3-Dimensional Shaping of Tissue Systems

Principal investigator
Prof. Damian Brunner
Institute of Molecular Life Sciences
University of Zurich
damian.brunner@imls.uzh.ch

Partners
UZH, UniBas, MPI Cologne

Scientific fields
- Embryology
- Cell-to-cell variability
- Intestinal organoids
- Wing imaginal discs
- Embryonic dorsal closure
- Cell biology

Technologies
Mathematics and modeling, 3D tissue morphogenesis, cell-to-cell variability, 3D live fluorescence imaging

Approved 2013

SignalX
Model-Driven Experimental Design of TOR Signaling

Principal investigator
Prof. Uwe Sauer
Institute of Molecular Systems Biology
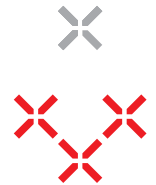ETH Zurich
sauer@imsb.biol.ethz.ch

Partners
ETHZ, UniGE

Scientific fields
- Engineering
- Cell signaling
- Proteomics
- Metabolomics

Technologies
Mathematics and modeling, computational biochemistry

Approved 2013

TargetInfectX
Multi-Pronged Perturbation of Pathogen Infection in Human Cells

Principal investigator
Prof. Christoph Dehio
Biozentrum
University of Basel
christoph.dehio@unibas.ch

Partners
UniBas, ETHZ, UZH

Scientific fields
- RNA interference
- miRNA
- Bacterial infection
- Signaling pathway reconstruction
- Anti-infectives
- Cell biology

Technologies
Cell biology, computational biology, genomics, mathematics and modeling

Approved 2013

TbX
Systems Biology of
Drug-resistant Tuberculosis
in the Field

Principal investigator
Prof. Sebastien Gagneux
Medical Parasitology and Infection
Biology, Swiss Tropical and Public
Health Institute (Swiss TPH),
University of Basel
sebastien.gagneux@unibas.ch

Partners
UniBas, ETHZ

Scientific fields
- Genomic epidemiology
- Experimental microbiology
- Population genomics
- Functional genomics
- Computer sciences
- Mathematics and modeling

Technologies
Transcriptomics, proteomics,
lipidomics, metabolomics

Approved 2013

AntibodyX
Systems Biology of
Humoral Immunity

Principal investigator
Prof. Sai Reddy
Department of Biosystems
Science and Engineering
ETH Zurich
sai.reddy@bsse.ethz.ch

Partners
ETHZ, UZH

Scientific fields
- Clinical immunology
- Clinical immunopathology
- Engineering
- Molecular biology

Technologies
Genomics, mathematics and
modeling, computational
biochemistry

Approved 2012

EpiPhysX
The Physics of
Epithelia

Principal investigator
Prof. Michel Milinkovitch
Department of
Genetics & Evolution
University of Geneva
michel.milinkovitch@unige.ch

Partners
UniGE, UZH

Scientific fields
- Engineering
- Developmental biology
- Embryology
- Zoology
- Biophysics
- Cellular biology

Technologies
Computer sciences, mathematics
and modeling

Approved 2012

LipidX
Systems Biology of
Biomembranes

Principal investigator
Prof. Gisou van der Goot
Global Health Insititute
EPF Lausanne
gisou.vandergoot@epfl.ch

Partners
EPFL, UZH, UniGE

Scientific fields
- Lipidomics
- Proteomics
- Cell signaling
- Metabolomics
- Cell biology
- Mathematical modeling

Technologies
Computational biochemistry,
mathematics and modeling

Approved 2012

MecanX
Understanding Physics of
Plant Growth

Principal investigator
Prof. Ueli Grossniklaus
Institute of Plant Biology
University of Zurich
grossnik@botinst.uzh.ch

Partners
UZH, ETHZ, IBM Research,
FemtoTools AG

Scientific fields
- Engineering
- Plant growth
- Microelectronics
- Biophysics
- Cell biology
- Computational biochemistry

Technologies
Cellular force microscopy, micro-
electronic mechanical systems
(MEMS), multifrequency AFM,
microrobotics

Approved 2012

NeuroStemX
Systems Biology of
Forebrain Development

Principal investigator
Prof. Verdon Taylor
Department of Biomedicine
University of Basel
verdon.taylor@unibas.ch

Partners
UniBas, ETHZ

Scientific fields
- Engineering
- Developmental biology
- Brain patterning
- Signaling

Technologies
Single cell RNA-Seq, genomics,
transgenics, mathematics and
modeling, microfluidics

Approved 2012

PhosphoNet PPM
Personalized-Precision
Medicine

Principal investigator
Prof. Ruedi Aebersold
Institute of Molecular Systems
Biology
ETH Zurich
aebersold@imsb.biol.ethz.ch

Partners
ETHZ, UZH, KSSG, TU Dresden

Scientific fields
- Experimental cancer research
- Personalized medicine
- Biomarker
- Proteomics

Technologies
Computer sciences, mathematics
and modeling, imaging

Approved 2012

PlantGrowth2
in a Changing
Environment

Principal investigator
Prof. Cris Kuhlemeier
Institute of Plant Sciences
University of Bern
cris.kuhlemeier@ips.unibe.ch

Partners
UniBE, UniL, UniFR, ETHZ

Scientific fields
- Botany
- Biophysics
- Agricultural and forestry
  sciences
- Genomics

Technologies
Computer sciences, mathematics
and modeling, imaging

Approved 2012

StoNets
Controlling and Exploiting
Stochasticity in Gene
Regulatory Networks

Principal investigator
Prof. Mihaela Zavolan
Biozentrum
University of Basel
mihaela.zavolan@unibas.ch

Partners
UniBas, EPFL, UniL

Scientific fields
- Gene expression
- Regulatory networks
- Circadian rhythms
- Cellular reprogramming
- miRNAs
- Single cell imaging

Technologies
Single cell analysis, computer
sciences, mathematics and
modeling

Approved 2012

SynaptiX
Systems Biology of
Forgetting

Principal investigator
Prof. Simon Sprecher
Department of Biology
University of Fribourg
simon.sprecher@unifr.ch

Partners
UniFR, UniBE, University of Nevada

Scientific fields
- Engineering
- Cytology
- Synaptic plasticity
- Transcriptomics
- Neurogenetics
- Genomics
- Cell biology

Technologies
Super resolution microscopy,
mathematics and modeling

Approved 2012

Transfer Projects (TF)

SysGenetiX
Cellular Systems Genetics
in Humans

Principal investigator
Prof. Emmanouil Dermitzakis
Department of Genetic Medicine
and Development
University of Geneva Medical School
emmanouil.dermitzakis@unige.ch

Partners
UniGE, EPFL, UniL, MIT

Scientific fields
- Cytology
- Genome variation
- Systems genetics
- Local regulatory networks
- Medicine
- Genomics
- Cell biology

Technologies
Computer sciences, mathematics
and modeling

Approved 2012

TubeX
Multiscale Biophysics of
Microtubule Dynamics

Principal investigator
Prof. Yves Barral
Institute of Biochemistry
ETH Zurich
yves.barral@bc.biol.ethz.ch

Partners
ETHZ, PSI

Scientific fields
- Microtubule cytoskeleton
- Saccharomyces cerevisiae
- Cytoskeleton
- Proteomics
- Cell biology

Technologies
Molecular genetics, X-ray
crystallography, mathematics and
modeling, imaging

Approved 2012

Mechanisms of cancer drug resistance

Collaboration between
Dr. Matthias Gstaiger
ETH Zurich
and
Novartis Pharma AG

Scientific fields, keywords
- Drug resistance
- Biomarker
- Personalized medicine
- Mass spectrometry
- Proteomics
- Cancer therapy
- PI3K signaling

Approved 2013

Multi-modal assessment of mutated predictors BRAF and DDR2 at lung carcinoma invasion fronts by topographic DNA extraction and micro-immunohistochemistry using the microfluidic probe

Collaboration between
Prof. Alex Soltermann
University Hospital Zurich
and
IBM Research Laboratory Zurich

Scientific fields, keywords
- Lung cancer
- Immunohistochemistry
- Microfluidic probe
- Oncogenic mutation
- Predictive biomarker

Approved 2012

EvolutionX – analyzing evolution of adaptation to a novel siderophore antibiotic in gram-negative bacteria by next generation sequencing

Collaboration between
Dr. Marc Creus
University of Basel
and
Basilea Pharmaceutica International Ltd.

Scientific fields, keywords
- Genomics
- Transcriptomics
- Laboratory evolution
- Next generation sequencing
- Antibiotics
- Antibiotic resistance

Approved 2012

Statistical reverse engineering of the signaling network involved in cachexia

Collaboration between
Prof. Heinz Wolfgang Koeppl
Technical University of Darmstadt
Prof. Ruedi Aebersold
ETH Zurich
and
Novartis Pharma AG

Scientific fields, keywords
- Mathematics
- Reverse engineering
- Molecular biology

Approved 2012

Foes or friends? Reprogramming tumor-associated macrophages to fight cancer by targeted signaling network modulation

Collaboration between
Prof. Bernd Bodenmiller
University of Zurich
and
F. Hoffmann – La Roche Ltd.

Scientific fields, keywords
- Medicine
- Tumor associated Macrophages
- Single cell analysis
- Reprogramming
- Drug screening
- Signaling network analysis

Approved 2013

In vivo endoscopic fluorescence imaging in the dopamine system of the healthy and diseased brain

Collaboration between
Prof. Fritjof Helmchen
University of Zurich
and
F. Hoffmann – La Roche Ltd.

Scientific fields, keywords
- Fluorescence imaging
- 2-Photon microscopy
- Calcium indicator
- Neocortex
- Striatum
- Dopamine

Approved 2012

Transition Postdoc Fellowships (TPdF)

Adaptive noise cancellation in synthetic biomolecular circuits

Principal investigator
Dr. Christoph Zechner
ETH Zurich

Host research group
Prof. Mustafa Khammash
ETH Zurich

Approved 2014

Exploiting signaling dynamics to overcome robustness of oncogenic networks

Principal investigator
Dr. Rohitha SriRamaratnam
University of Basel

Host research group
Prof. Matthias Wymann
University of Basel

Approved 2014

High-throughput super-resolution imaging reveals contextual effects in gene expression

Principal investigator
Dr. Kyle Douglass
EPF Lausanne

Host research group
Prof. Suliana Manley
EPF Lausanne

Approved 2014

Mediation of specificity in mRNA translation by hetero-geneous ribosomes

Principal investigator
Dr. Joao Guimaraes
University of Basel

Host research group
Prof. Mihaela Zavolan
University of Basel

Approved 2014

Membrane-based memory formation in bacteria: scaling up from single-cell behavior to the dynamics of populations

Principal investigator
Dr. Susan Schlegel
ETH Zurich

Host research group
Prof. Martin Ackermann
ETH Zurich

Approved 2014

Systems biology of scaling: biophysics of gradient expansion

Principal investigator
Dr. Maria Luisa Merino
University of Geneva

Host research group
Prof. Marcos Gonzalez-Gaitan
University of Geneva

Approved 2014

The thermodynamic under-pinnings of enzyme-enzyme interactions and substrate channeling

Principal investigator
Dr. Elad Noor
ETH Zurich

Host research group
Prof. Uwe Sauer
ETH Zurich

Approved 2014

3D mass cytometry – a new technology for multi-parameter tissue imaging

Principal investigator
Dr. Serena Di Palma
University of Zurich

Host research group
Prof. Bernd Bodenmiller
University of Zurich

Approved 2013

4-dimensional analysis of neural stem cell commit-ment in the developing telencephalon

Principal investigator
Dr. Marion Betizeau
ETH Zurich

Host research group
Prof. Dagmar Iber
ETH Zurich

Approved 2013

Applications of network reconstruction, graph theoretic analysis and qualitative model-ling to virus-host interaction networks

Principal investigator
Dr. Maria Pamela Dobay
SIB Swiss Institute of Bioinformatics

Host research group
Dr. Mauro Delorenzi
SIB Swiss Institute of Bioinformatics

Approved 2013

Assessing the impact of cancer-associated mutations on the kinase interaction networks

Principal investigator
Dr. Marija Buljan
MRC Laboratory of Molecular Biology

Host research group
Prof. Ruedi Aebersold
ETH Zurich

Approved 2013

Computational fate predic-tion of embryonic stem cell subpopulations

Principal investigator
Dr. Stavroula Skylaki
ETH Zurich

Host research group
Prof. Timm Schroeder
ETH Zurich

Approved 2013

Expounding epigenetiX

Principal investigator
Dr. Dimitrios Spiliotopoulos
University of Zurich

Host research group
Prof. Amedeo Caflisch
University of Zurich

Approved 2013

Interplay between lipid composition and ER structure and function: a systems approach

Principal investigator
Dr. Maria Eugenia Zaballa
EPF Lausanne

Host research group
Prof. Gisou van der Goot
EPF Lausanne

Approved 2013

Mathematical modeling of population epigenetics

Principal investigator
Dr. Önder Kartal
University of Zurich

Host research group
Prof. Ueli Grossniklaus
University of Zurich

Approved 2013

Morphogenesis of monolayer epithelia: models and experiments

Principal investigator
Dr. Séverine Urdy
University of Zurich

Host research group
Dr. Christof Aegerter
University of Zurich

Approved 2013

Systems modeling of the metabolic network of a gut microbial community

Principal investigator
Dr. Julien Limenitakis
University of Bern

Host research group
Prof. Andrew Macpherson
University of Bern

Approved 2013

Systems-level study on the origin and variation of lag times in E. coli

Principal investigator
Dr. Markus Basan
ETH Zurich

Host research group
Prof. Uwe Sauer
ETH Zurich

Approved 2013

The influence of pH signal-ing on the regulation of brain energy metabolism

Principal investigator
Dr. Guillaume Azarias
University of Zurich

Host research group
Prof. Bruno Weber
University of Zurich

Approved 2013

Understanding the genotype to phenotype transformation for cholesterol regulation using a network based approach

Principal investigator
Dr. Peter Blattmann
ETH Zurich

Host research group
Prof. Ruedi Aebersold
ETH Zurich

Approved 2013

Cortical tension and stiffness during asymmetric cell division

Principal investigator
Dr. Tri Thanh Pham
University of Basel

Host research group
Prof. Clemens Cabernard
University of Basel

Approved 2012

Metabolic regulations of human T cell activation and differentiation

Principal investigator
Dr. Roger Geiger
Università della Svizzera italiana

Host research group
Prof. Antonio Lanzavecchia
ETH Zurich

Approved 2012

Robustness of C. elegans development at thermal limits

Principal investigator
Dr. Aitana Neves da Silva
EPF Lausanne

Host research group
Prof. Pierre Gönczy
EPF Lausanne

Approved 2012

Interdisciplinary PhD Projects (IPhD)

A computational framework for systems pathology of prostate cancer

PhD student
tba

Supervisors
Prof. Peter Wild
University Hospital Zurich
Dr. Maria Rodriguez Martinez
IBM Research Laboratory Zurich

Approved 2014

Comprehensive analysis of transcription factor – promoter interaction in vitro and in vivo

PhD student
tba

Supervisors
Prof. Sebastian Josef Maerkl
EPF Lausanne
Prof. David Shore
University of Geneva

Approved 2014

Computational modeling of pluripotent stem cell transcription factor networks

PhD student
Oliver Hilsenbeck
ETH Zurich

Supervisors
Prof. Timm Schroeder
Prof. Jörg Stelling
ETH Zurich

Approved 2014

Establishment of in vivo verified molecular networks that control T cell function in chronic infection

PhD student
tba

Supervisors
Prof. Dietmar Zehn
University Hospital of Lausanne
Dr. Mauro Delorenzi
SIB Swiss Institute of Bioinformatics

Approved 2014

Functional organization of the plant nucleus

PhD student
tba

Supervisors
Dr. Célia Baroux
Prof. Ueli Grossniklaus
University of Zurich
Dr. Peter Majer
Bitplane AG

Approved 2014

Input-output relationships underlying transcriptional bursting at the genome-wide level

PhD student
Onur Tidin
EPF Lausanne

Supervisors
Prof. David Suter
Prof. Felix Naef
EPF Lausanne

Approved 2014

Integrating genomic and physiological data to unravel the functioning of key hub nodes in mammalian regulatory networks: the case of the peroxisome proliferator-activated receptor γ co-activator 1α (PGC-1α)

PhD student
tba
Supervisors
Prof. Christoph Handschin
Prof. Erik van Nimwegen
University of Basel

Approved 2014

Metabolic network governing Toxoplasma gondii persistence and transmission

PhD student
tba

Supervisors
Prof. Dominique Soldati-Favre
University of Geneva
Prof. Vassily Hatzimanikatis
EPF Lausanne
Prof. Adrian Hehl
University of Zurich

Approved 2014

Micro2X: micropatterning of microbial communities – tailoring cooperation versus competition

PhD student
tba

Supervisors
Prof. Julia Vorholt
Dr. Tomaso Zambelli
ETH Zurich

Approved 2014

Model based inference of age related changes in circadian oscillators

PhD student
Sara Fonseca
University of Fribourg

Supervisors
Prof. Daniel Wegmann
Dr. Jürgen Ripperger
University of Fribourg

Approved 2014

Prediction error processing in neural networks of the mammalian brain

PhD student
tba

Supervisors
Prof. Fritjof Helmchen
University of Zurich
Prof. Klaas Enno Stephan
ETH Zurich, University of Zurich

Approved 2014

Quantification of growth-controlled gene transcription dynamics by live, single-cell imaging

PhD student
Victoria Wosika
University of Lausanne

Supervisors
Prof. Serge Pelet
University of Lausanne
Prof. David Shore
University of Geneva

Approved 2014

Spectral deconvolution of SWATH data for peptide identification and deciphering HIV-1 antiviral response mechanisms

PhD student
Aivett Bilbao
University of Geneva

Supervisors
Dr. Frédérique Lisacek
SIB Swiss Institute of Bioinformatics
Prof. Gérard Hopfgartner
University of Geneva

Approved 2014

Systematic characterization of the cell biological and mechanical properties of asymmetrically dividing Drosophila neuroblasts

PhD student
tba

Supervisors
Prof. Clemens Cabernard
University of Basel
Prof. Daniel Jobst Müller
ETH Zurich

Approved 2014

Systems analysis of the impact of IFN-lambda signaling on vaccine response

PhD student
tba

Supervisors
Prof. Jörg Stelling
ETH Zurich
Dr. Adrian Egli
University of Basel

Approved 2014

Systems biology of vision: online identification of visual coding properties of retinal ganglion cells

PhD student
tba

Supervisors
Prof. Andreas Hierlemann
ETH Zurich
Dr. Botond Roska
Friedrich Miescher Institute for Biomedical Research

Approved 2014

Towards in silico organogenesis: inferring and simulating regulatory network dynamics on growing embryonic 3D limb bud domains

PhD student
tba

Supervisors
Prof. Dagmar Iber
ETH Zurich
Prof. Rolf Zeller
University of Basel

Approved 2014

A massively parallel space-time connected approach based on implicit active contour methods to track leukocytes observed by multiphoton intra vital and confocal microscopy

PhD student
Diego Ulisse Pizzagalli
Università della Svizzera italiana

Supervisors
Dr. Santiago Fernandez Gonzalez
Prof. Rolf Krause, Prof. Marcus Thelen, Prof. Michael Bronstein
Università della Svizzera italiana

Approved 2013

Cause and necessity of metabolic adaptation in human epidermis

PhD student
Andreas Kühne
ETH Zurich

Supervisors
Dr. Nicola Zamboni
Prof. Manfred Claassen
ETH Zurich

Approved 2013

Dynamic single-cell analysis through microfluidics-enabled impedance spectroscopy and fluorescence microscopy

PhD student
Ketki Chawla
ETH Zurich

Supervisors
Prof. Andreas Hierlemann
Prof. Jörg Stelling
ETH Zurich

Approved 2013

Exploring response surfaces and synergistic interactions of antibiotic combination treatment for Neisseria gonorrhoeae

PhD student
Sunniva Förster
University of Bern

Supervisors
Dr. Christian Althaus
Dr. Lucy Hathaway
Prof. Nicola Low
University of Bern

Approved 2013

High-throughput microfluidic single cell analysis platform for deciphering heterogeneity in stress-responsive signalling

PhD student
Ranjan Mishra
ETH Zurich

Supervisors
Prof. Matthias Peter
Prof. Andrew deMello
ETH Zurich

Approved 2013

Integrating transcriptional and allosteric regulation in central metabolism of E. coli

PhD student
Dimitris Christodoulou
ETH Zurich

Supervisors
Prof. Uwe Sauer
Prof. Jörg Stelling
ETH Zurich

Approved 2013

Numerical models of reaction-diffusion/chemotaxis determining complex patterns of skin appendages and skin coloration: incorporating 3D, growth, and realistic networks of activators/inhibitors

PhD student
Antonio Martins
University of Geneva

Supervisors
Prof. Michel Milinkovitch
Prof. Bastien Chopard
University of Geneva

Approved 2013

QuantX – quantification of amino acid transporter interaction through system identification

PhD student
Mehdi Taslimifar
University of Zurich

Supervisors
Prof. Vartan Kurtcuoglu
Prof. François Verrey
University of Zurich

Approved 2013

Systems analysis of a morphogen response

PhD student
Alexandra Franz
University of Zurich

Supervisors
Prof. Konrad Basler
Prof. Christian von Mering
University of Zurich

Approved 2013

A microfluidics-based pipeline for the quantitative analysis of yeast aging

PhD student
Marek Konrad Krzyzanowski
ETH Zurich

Supervisors
Prof. Yves Barral
Prof. Andrew deMello
ETH Zurich

Approved 2012

An extended computational morphodynamics approach to understand self-organization in plant growth control

PhD student
Alice Sarah Breda
University of Lausanne

Supervisors
Prof. Christian Hardtke
University of Lausanne
Prof. Richard Smith
MPI Cologne

Approved 2012

Collective dynamics and crosstalk in MAPK signaling

PhD student
Sunil Kumar
ETH Zurich

Supervisors
Prof. Heinz Koeppl
Technical University of Darmstadt
Prof. Matthias Peter
ETH Zurich

Approved 2012

Dynamics of Sertoli cell transcriptomes during the progression of spermatogenesis using ultrahigh-throughput sequencing technologies

PhD student
Isabelle Stévant
University of Geneva

Supervisors
Prof. Serge Nef
Prof. Emmanouil Dermitzakis
University of Geneva

Approved 2012

Generation of biomarkers for the detection of ADP-ribosylated proteins during cellular stress

PhD student
Vera Bilan
University of Zurich

Supervisors
Prof. Michael Hottiger
University of Zurich
Prof. Gérard Hopfgartner
University of Geneva

Approved 2012

Genomic and transcriptomic characterization of heterogeneous tumor cell populations

PhD student
Ariane Hofmann
ETH Zurich

Supervisors
Prof. Niko Beerenwinkel
Dr. Christian Beisel
ETH Zurich
Prof. Holger Moch
University Hospital Zurich

Approved 2012

Modeling the cellular phosphorylation response to double strand breaks using quantitative mass spectrometry

PhD student
Ariel Bensimon
ETH Zurich

Supervisors
Prof. Ruedi Aebersold
Prof. Niko Beerenwinkel
ETH Zurich

Approved 2012

Modeling dynamics of protein synthesis and degradation in Arabidopsis thaliana

PhD student
Phillip Ihmor
ETH Zurich

Supervisors
Dr. Katja Bärenfaller
ETH Zurich
Prof. Mark Robinson
University of Zurich

Approved 2012

Quantitative approaches for the reconstruction of palmitoylation networks in ER

PhD student
Tiziano Dallavilla
EPF Lausanne

Supervisors
Prof. Vassily Hatzimanikatis
Prof. Gisou van der Goot
EPF Lausanne

Approved 2012

Systems analysis of neutralizing antibody repertoires for nanoparticulate-based antiviral vaccine design

PhD student
Marcela Rincon-Restrepo
EPF Lausanne

Supervisors
Prof. Melody Swartz
EPF Lausanne
Prof. Sai T. Reddy
ETH Zurich

Approved 2012
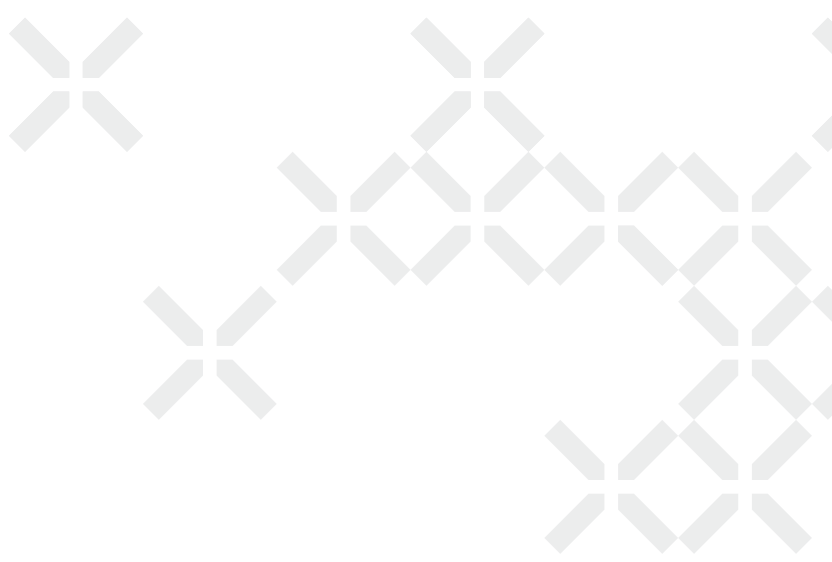
Towards systems biology of adenovirus transmission

PhD student
Artur Yakimovich
University of Zurich

Supervisors
Prof. Urs Greber
University of Zurich
Prof. Ivo F. Sbalzarini
Max Planck Institute, Dresden

Approved 2012

Special Opportunities Fund (SpecOpp)

Lunaphore:

Development of a microfluidic tissue processor for high throughput and multiplexed molecular profiling of tumors

Principal investigator
Dr. Ata Tuna Ciftlik
EPF Lausanne

Approved 2013

Entrepreneur in residence (EIR):

Innovation scouting service

Principal investigator
Michael Dillhyon
Dillhyon Ventures

Approved 2012

Micronaut:

Recording high-resolution stereo-SEM images

Principal investigator
Prof. Henning Stahlberg
University of Basel

Approved 2012

SIB fellowship program:

SIB PhD-fellowships

Principal investigator
Prof. Ron Appel
SIB Swiss Institute of Bioinformatics

Approved 2012

SwissLipids:

Dedicated knowledgebase for comprehensive curated information on lipids

Principal investigator
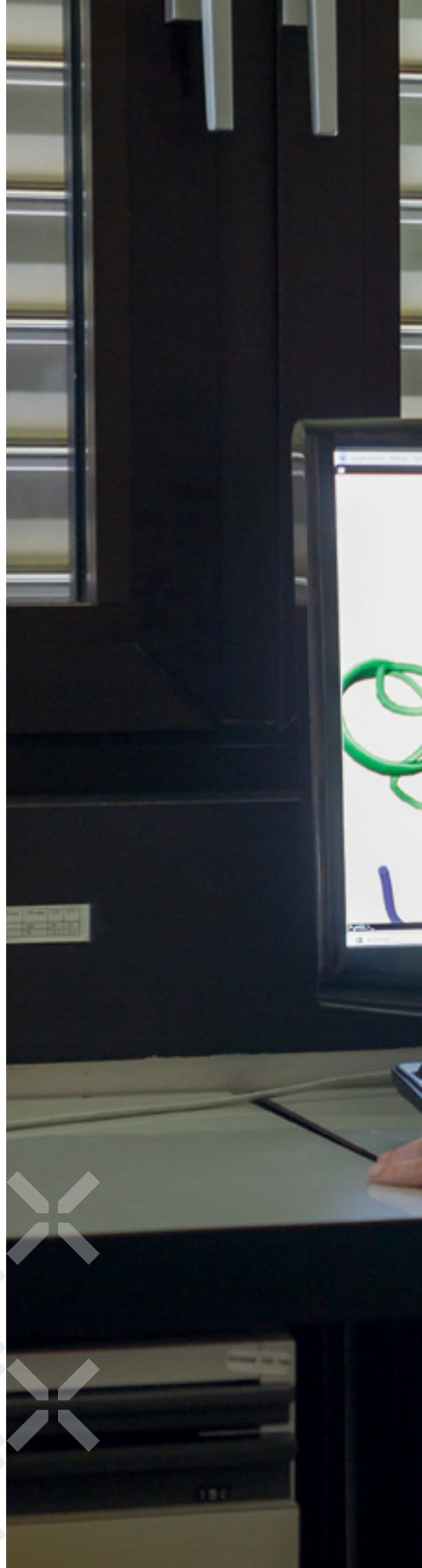**Dr. Alan Bridge**
SIB Swiss Institute of Bioinformatics

Approved 2012

Visible networks – research politics and life sciences in the 21st century:

PhD project in history of technology

Principal investigator
Prof. David Gugerli
ETH Zurich

Approved 2011

Partner institutions of SystemsX.ch

EPFL
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

FMI
Friedrich Miescher Institute
for Biomedical Research

PAUL SCHERRER INSTITUT
PSI

SIB
Swiss Institute of
Bioinformatics

UNI
BASEL

u^b

b
UNIVERSITÄT
BERN

UNI
FR
UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

UNIVERSITÉ
DE GENÈVE

Unil
UNIL | Université de Lausanne

unine
UNIVERSITÉ DE
NEUCHÂTEL

Università
della
Svizzera
italiana

University of
Zurich UZH

Contact information

Dr. Daniel Vonder Mühll
Managing Director
SystemsX.ch
Clausiusstrasse 45
CH-8092 Zurich
Phone: +41 (0)44 632 78 88
daniel.vondermuehll@systemsx.ch

Visit our website:
www.systemsx.ch

Subscibe to our newsletter:
communications@systemsx.ch

Issued: October 2014