SystemsX.ch
The Swiss Initiative in Systems Biology

8th Call for Proposals for SystemsX.ch Projects

The Federal Council has proposed to provide funds to the SystemsX.ch initiative to foster systems biology research in Switzerland in its *Messages on Education, Research and Innovation for 2008-2011, 2012, and 2013-2016*, which was approved by the Swiss Parliament. This is the eight Call for Proposals within the Swiss Initiative in Systems Biology.

Summary

The 8th Call for proposals of SystemsX.ch invites research proposals that develop or apply a systems approach to the study of biological processes in the framework of Research, Technology and Development (RTD) and Transfer Projects (TF) projects. It will be the last call for RTD proposals within SystemsX.ch. For successful projects funding will be provided, after peer review, for the period of 2014-2017. Teams of scientists from all SystemsX.ch partner institutions are encouraged to apply. To ensure broad participation and the growth of the Swiss systems biology community, a significant part of the available research funding will be specifically allocated for new projects, i.e. projects from scientist who have not been involved in SystemsX.ch project to date. Proposals with a focus on theory/modeling and/or medical/clinical relevance are of particular interest.

Content

1   What is Systems Biology?

The primary objective of Systems Biology is to achieve an integral and **comprehensive understanding of the quantitative behavior of biological systems** that arises from the dynamic interplay of its components. It is expected that Systems Biology research projects will culminate in a mathematical model that simulates in silico the system's properties **and predicts its quantitative response to internal or external perturbations**. Frequently, biological systems are represented as networks of interacting elements, whereby the structure and the dynamic behavior of the network determine its phenotypic traits. The study of biological systems in this framework requires interdisciplinary cooperation and a division of labor between e.g. biologists, medical scientists, mathematicians, physicists, computer scientists, chemists and engineers. The present Call for Proposals is based on this definition of Systems Biology.

2   What is SystemsX.ch?

SystemsX.ch is a "simple partnership" which enables institutes, competence centers, and scientific research groups to interact and cooperate by establishing common technological platforms and sharing the data collected. The members of the partnership, i.e. the partner institutions, intend to position Switzerland among the world leaders in Systems Biology. SystemsX.ch will enhance and extend interdisciplinary research and education at the highest level in this field. It will develop and use the knowledge and tools necessary to expand our understanding of and ability to teach biology as an integrated quantitative science.

It will foster the ongoing design, development, and application of advanced technology and the training of scientists and engineers in the special skills required to understand biological systems. To achieve its goals, SystemsX.ch relies on the creative talents of its scientific and professional staff and its ability to initiate and nurture partnerships between the projects associated with the program and with other academic institutions, private industry, and society. As a result of the first phase (2008-2012) of SystemsX.ch a total of about 125 SystemsX.ch projects were approved, involving more than 250 research groups and more than 1'000 scientists. The main part of the efforts went into the 14 large integrated research projects (RTD) and SyBIT, the SystemsX.ch IT backbone. The second SystemsX.ch phase started in 2013 with 11 new RTD projects and 4 Transfer projects. In addition the SystemsX.ch community encloses all students, technicians and scientists of the Transition Postdoc Fellowships (TPdF), the Interdisciplinary PhD (IPhD) projects, as well as the former Interdisciplinary Pilot projects (IPP) and the Bridge-to-Industry projects (BIP).

The overall goal of this second phase (2013-2016+) is to sustain and reinforce the scientific and cultural advances realized in the first (2008-2012) phase, to further expand and strengthen the systems biology research community in Switzerland and to expand the systems biology approaches into new scientific directions and into the private sector. Accordingly, the available funds will be disbursed, after peer review by the SNSF, to **continued funding of renewed projects** and to support **new projects**.

The Systems Biology panel of the Swiss National Science Foundation (SNSF) reviews regularly the progress of SystemsX.ch as a whole. It is also responsible to evaluate all proposals of the present call.

You will find more information on the SystemsX.ch website www.systemsx.ch.

2.1   Goals of SystemsX.ch

SystemsX.ch, the Swiss Initiative in Systems Biology, aims at:

- gathering scientific competences on a national level to establish Switzerland at the forefront of the Systems Biology research with a particular focus on quantitative and predictive biology;

- setting up and developing the cutting-edge technology required for Systems Biology research;

- implementing a truly interdisciplinary research culture by assembling complementary disciplines to stimulate mutual benefits;

- establishing collaborations with the private industry and SMEs in various and individual forms of public private partnership;

- educating PhD students, postdocs and young researchers for the future accordingly.

SystemsX.ch fosters interdisciplinary collaboration promoting the systems approach in life science research between both, public and private institutions. Public institutions are universities, university hospitals as well as public hospitals, research institutions according paragraph 16 of the Swiss Research Law (420.1). Examples for private institutions are companies (industry), small- and medium-sized enterprises (SMEs) and private hospitals. According to applicable law, SystemsX.ch funds from the Swiss Government can only support public sector research.

2.2   Scope 8th Call for Proposals

SystemsX.ch will support interdisciplinary projects that comply with above definition of Systems Biology. This is the last call for proposals for RTDs within the SystemsX.ch initiative. With the present 8th Call for Proposals, SystemsX.ch invites scientists from the SystemsX.ch partner institutions to apply for Research, Technology and Development (RTD) projects and for Transfer (TF) projects. Scientists previously not associated with SystemsX.ch, scientists focused on the development of mathematical models of biological processes or on implementing the systems approach for medical/clinical relevant projects, and scientists bridging the private and public sector are particularly encouraged to apply.

In this last call RTD projects will be prioritized that:
- focus on quantitative modeling of biological processes and the integration of large, complementary datasets describing dynamic biological systems,
- develop new theoretical tools,
- encourage non-biologists to act as an RTD-PI,
- focus on systems biology approaches to medical and/or clinical questions
- increase the collaboration with the private sector,

In this 8th call, the following project formats will be supported:
1. **Research, Technology and Development Projects (RTD projects)** lasting 4 years:
   A) New RTD projects: For new RTD projects (see definition above and in chapter 3.1) priority will be given to consortia of moderate size (typically e.g. 3 to 8 research groups) that apply complementary approaches on well defined biological, clinical or theoretical questions.
   B) Ongoing RTDs: Ongoing RTD projects (projects which were approved in 2009), are invited to submit a proposal for an additional four year period.

2. **Transfer Projects** to the private sector lasting up to 2 years with the possibility to add a third year.

A total of **CHF 30 million** will be made available to fund RTDs and Transfer Projects. Submission of new project proposal is specifically encouraged. Please find further details for each project type in chapter 3.

Submission **deadline** for the proposals of this 8th call is **June 30, 2013**. The SNSF review panel will convene on September 23-24, 2013. Main applicants of the short listed RTD proposals (about 20 to 25) will be invited to present their proposal and discuss it with the SNSF panel.

On **May 13, 2013, the All SystemsX.ch Day** will be organized in Bern. It shall serve also as an information and networking event to build up consortia for new proposals.

2.3   Outlook to further SystemsX.ch Calls for Proposals

During the second phase of SystemsX.ch, the described project types are complemented by interdisciplinary PhD projects (IPhDs) and Transition Post-doc Fellowships (TPdF). A call (the 7th SystemsX.ch call) for these project types will be / was closed on April 15, 2013 , the next calls for IPhDs and Transition Post-Doc Fellowships will be issued in fall 2013. The next call for Transfer Projects will be published in early 2014. There will be no further call for RTD proposals.

2.4   Information Forum All SystemsX.ch Day on May 13, 2013

To provide further information on this call for proposals and SystemsX.ch in general, SystemsX.ch will organize the All SystemsX.ch Day 2013 in Bern on May 13, 2013. The event is open to anyone interested in Systems Biology, aiming at providing platforms to exchange ideas for proposals and networking with scientists from other disciplines.

Please find topics and program details under www.systemsx.ch.

2.5   Additional Information

Additional information about SystemsX.ch can be obtained at www.systemsx.ch. Please contact the SystemsX.ch Management Office if you have any further questions (admin@systemsx.ch 044 632 47 75).

3 Types of Proposals SystemsX.ch is Calling For

3.1 Research, Technology and Development Projects (RTD Projects)

Research, Technology and Development (RTD) projects are interdisciplinary research projects carried out by consortia of a moderate number, typically 3 to 8 research groups of complementary expertise. Projects must show an interdisciplinary character by linking research groups from traditionally separated disciplines. They can focus either on the in-depth analysis of a particular biological system using a systems approach as defined above, on quantitative and integrated biology, or on the development and implementation of novel technology (experimental or theoretical) that has a clear potential for broadly enabling Systems Biology research. Special preference will be given to proposals with the following orientation: translational Systems Biology projects, projects advancing the state-of-the art in combining experimental and theoretical approaches for the description of biological processes and to projects bridging the private-public sector boundary. All projects must contain considerable quantitative and modelling parts. However, the overriding decision criterion is the quality, originality and level of innovation of the proposed research.

A SystemsX.ch RTD project is to be proposed and led by one main applicant. Non-biologists are encouraged to act as the main applicant. His/her institution, the so-called hosting institution of the RTD project, will be responsible for the administration, coordination, and reporting of the project. If a proposal is approved, the main applicant will manage his/her project and ensure that it is carried out in an appropriate manner. Generally, the consortium of a RTD project should consist of researchers from at least two partner institutions preferably including the private sector. Scientists from non-partner institutions may also submit RTD proposals (see 3.1.5).

Descriptions of the 14 RTDs approved during the first phase and of the 11 RTDs approved in 2012 can be found on the [SystemsX.ch website](). Please note that the RTDs in this second phase will be restricted to 4 years without the option for extension.

Proposals will be evaluated first by the international, interdisciplinary review panel of the SNSF and short listed. The 20 to 25 short-listed proposals will be assessed by both, the SystemsX.ch Scientific Executive Board (SEB) and the SNSF review panel. SystemsX.ch will evaluate the fit of the projects with the goals of the overall initiative. The SNSF panel will be responsible for the quality control. The main applicants of the short-listed proposals will be invited to present and discuss their proposals with the SNSF review panel **on September 23-24, 2013**.

3.1.1 RTD Project Characteristics

Systems Biology covers a number of different disciplines, but also a wide range of research methods, technologies, and development tools. Therefore, RTD projects of different scopes can be envisaged. The following descriptions serve as examples.

- Interdisciplinary research projects focusing on quantification and/or modeling of biological processes: This type of project will concentrate on the in-depth analysis of a specific biological system or multiple systems using a systems biology approach. Biologically oriented projects must demonstrate that they are implementing an integrated experimental and theoretical research approach aimed at the comprehensive, quantitative understanding of complex processes. It is expected that the projects will culminate in the generation of a model (e.g. mathematical) that simulates the behavior of the system and makes quantitative predictions on this system's response to defined perturbations. Examples include the study of a particular biological or physiological process, or of a disease.

- Modeling and/or theory projects: These projects may consist of a mix of biologists and computational scientists building a small consortium of research groups to approach the analysis of biological processes primarily from a theoretical side. These projects are expected to develop generic solutions to problems in systems biology rather than new insights in a specific research problem.

- Interdisciplinary research projects with a technological and/or engineering focus: To overcome the substantial technological limitations of systems biology, SystemsX.ch will support integrated projects that target the development and implementation of novel and innovative technologies. Such technologies must possess the potential to overcome a documented limitation and broadly impact research in a wide range of biological systems. Technology oriented projects focused on data collection must demonstrate that they target new types of data for which there is no current acquisition technology available (as opposed to incremental improvements of current technology), that they are cutting edge and adhere to the idea of standardized data formats and verifiable data quality. Examples of technologically oriented projects include new approaches to the acquisition of biological data, new technologies for their computational analysis, or integration of (quantitative) data sets and technologies for the targeted perturbation of biological systems.

In reality, most RTD projects might be a mix between the types described above. However, each project must contain substantial quantitative, computational, modeling and/or theoretical research using cutting-edge technology.

A follow-up proposal of a RTD project approved in 2009 will also be assessed on the achievements from the first period (i.e. data, results, deliverables etc). However, based on the description above, linear extensions of earlier projects are discouraged and changes in direction, research method and composition of the consortium to adapt to new directions is specifically encouraged. Similarly, the inclusion of private sector partners is specifically encouraged.

As far as number of research groups, project duration and finances is concerned, it is the responsibility of the main applicant to find the optimal setting within the boundaries stated in this document. This is obviously dependent on the main activities (e.g. wet lab, modeling) and availabilities of competences. SystemsX.ch defines just an upper limit for both time and SystemsX.ch funds (see next section).

3.1.2 Duration, Finances

For both, new RTD proposals as well as proposals out of RTDs approved in 2009, the duration of the projects will be four years without the possibility of further extension. SystemsX.ch will fund RTD projects to a **maximum of CHF 3'000'000**[1]. **As required** by law and in accordance with the Messages of the Federal Council on Education, Research and Innovation, **participating institutions must provide Own Contributions** (in cash and/or in kind) to at least match the funds provided by SystemsX.ch. A letter of intended own contributions from the main applicant's institution must be attached to the proposal. However, details about Own Contribution will be negotiated after approval of the RTD projects. Guidelines on the calculation of matching funds and allowable matching fund sources can be found below in section 3.1.4.

Moreover, additional funds both from competitive research foundations (SNSF, CTI, EU, NIH, etc) and from the private sector (industry, SME, etc) are expected to be secured for new RTD's. Hence, the budget of each RTD Project consists of the following four funding sources:

- Funding requested from SystemsX.ch;
- Own Contributions: matching funds (at least as much as SystemsX.ch funds) from the partner institutions: (1) in cash **and / or** (2) in kind (see definitions below);
- Private industry: collaboration with partners from the private industry and SMEs;
- Others: funds directly linked to the project obtained from other competitive research institutions such as SNSF, CTI, EU, NIH, etc.

Note

The SystemsX.ch IT-backbone SyBIT will coordinate and provide, together with the various local IT support entities (e.g. Vital-IT), support for all approved RTD projects in terms of bioinformatics including implementation of data sharing. Please estimate your needs and plan accordingly (see chapter 3.1.6 Part 2; Scientific Information, items 4 and 5).

SystemsX.ch funds also Transition Postdoc Fellowships (TPdF), interdisciplinary PhD projects (IPhDs) and Transfer projects (TF). It is allowed to affiliate either of these project types with a RTD.

3.1.3 Set-up of a RTD Consortium

It is up to the main applicant to compose the consortium of the RTD proposal. In general, all research groups at a SystemsX.ch partner institution are invited to participate in SystemsX.ch (for details see 3.1.5). It is highly desirable to **include research groups of a private company** in the consortium. However, SystemsX.ch money can only be provided to support research in the public sector. Under certain circumstances (e.g. no Swiss research group can provide the respective know-how), it is possible to include research groups located in a foreign country. Again, SystemsX.ch funds can only be provided to Swiss research groups. Please contact the Management Office to discuss your concrete case.

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[1] This upper limit considers the fact that after the end of the SystemsX.ch initiative the partner institutions will implement respective structures to ensure sustainability of the systems approach in life science research. The limit also takes into account that other SystemsX.ch funding modes, specifically competitive IPhD and Transitional Post-doc Fellowships are available to increase the thrust of projects.

Note: SystemsX.ch funds can only be used for Swiss academic partners. The private sector partners cover their efforts by their own resources, and fund or contribute to further activities of the project.

3.1.4 Own Contributions

The own contributions principle is a mandatory prerequisite (see above). The funds can be in kind and / or in cash.

Definitions

"cash": funds which are invested strategically to support SystemsX.ch projects and made available to the research groups whose project proposal has been accepted by SystemsX.ch. They are to be transferred to the account of the research group in question and reported in the annual financial report of the institution.

"in kind": resources from the institutions' operating budget allocated explicitly to SystemsX.ch projects:
(1) Personnel paid from the institution's operating budget involved in SystemsX.ch projects according to the following table:

Table "in kind": lump sum per category (including salary, social charges, overhead services, infrastructures) to be calculated pro rata (max. of 20% for professors):

Professor	270 kFr
Assistant Professor	200 kFr
Senior Researcher*	170 kFr
PostDoc*	130 kFr
Technician*	130 kFr
PhD student*	60 kFr

*) only if salary is paid from the institutions' operating budget

(2) From 2013 onwards: large equipment purchased from the institutions' budget is eligible for SystemsX.ch purposes on a pro rata basis.

(3) Earlier investments (e.g. infrastructure platforms made available to SystemsX.ch): the Scientific Executive Board will determine the eligible amount on a case-by-case basis.

3.1.5 Who May Apply for RTD Projects?

Faculty members of SystemsX.ch partners are eligible as main applicants. Experienced senior scientists from other Swiss research institutions are eligible as co-applicants (i.e. not main applicant). However, only SystemsX.ch partners and cooperating partners (according to the revised Research Law SR 420.1, Article 7, No. 4) are eligible to receive SystemsX.ch funding.

After approval by the SNSF, the RTD's hosting institution must apply to become a SystemsX.ch partner prior to initiation of funding, if the institution is not already a SystemsX.ch partner.

3.1.6 Documentation to be Submitted

The RTD proposals are to be submitted using the official forms consisting of the following parts:

Part 1: General Information

Part 2: Scientific Information

1. Summary: concise statement of the goals, milestones and significance of the project (1-2 pages)

2. International standing of all applicants in their field of research (2-3 pages in total)

3. Research plan (clearly structured, maximum 30 pages in total. **Note:** any pages exceeding 30 will not be considered):

    3.1. Overall research questions, specific goals, milestones and framework of the whole project, expected added value (max 5 pages)

    3.2. Research plan of each subproject: state of the art, questions, methods, milestones (max 6 pages for each subproject)

4. Justification of the systems biology approach, significance of the planned research for SystemsX.ch and future users (private industry, economy, medicine, etc.).(1-2 pages)

5. Dissemination and bioinformatics: each project will have to provide a concise plan of how software tools, data sets and other resources will be **shared or made publicly available**.

    SyBIT will coordinate and provide, together with the various local IT support entities (e.g. Vital-IT), support for all approved RTD projects in terms of bioinformatics including implementation of data sharing and dissemination (contact sybit@sympa.systemsx.ch). If bioinformatics, computational and data resources are needed, please describe the following (max 2 pages):

    5.1 Estimated needs for bioinformatics data analysis, statistical analysis, visualization, etc

    5.2 Estimated needs for IT hardware resources for storage volume and computation

    5.3 Estimated needs for software, middleware, platforms and services, open source or commercial, licenses

    5.4 Planned provisioning for the above: resources already exist or new resources are necessary, directly or through SyBIT

Annexes:
- Four-year full cost budget (use Excel Budget forms provided on *mySNF*)
- Signed letter of commitment concerning Own Contributions from the host institution's management.
- CV and publication list over the past 5 years of all applicants
- Existing contracts, letters of support of existing or potential industry partners if applicable.

3.1.7 Submission Deadline

The RTD proposals are to be submitted by **June 30, 2013** using the SNSF web platform *mySNF* (www.snf.ch). After the completion of the submission on the web platform, the thereby compiled PDF-file must also be sent to admin@systemsX.ch.

Please note: for the SNSF to be able to guarantee *mySNF* access, new user accounts must be requested five working days before a deadline at the latest (from abroad: 2 weeks before the deadline). It is the responsibility of the applicants to ensure timely delivery of their proposal. SNSF and SystemsX.ch reject any responsibility for electronic / e-mail problems or any other problems.

3.1.8 SNSF Selection Procedure for RTD Proposals

The selection of the proposals will be preceded by a formal check by the SNSF administration. Proposals which fail to comply with the formal requirements will not be admitted to the next stage of the selection procedure and will be rejected if the defect cannot be easily remedied. The following formal requirements must be met:

- Compliance with the submission deadline (postmark)
- Use of the official forms and completeness of the proposal written in English
- Eligibility of the main applicant and the co-applicant(s)
- Acknowledgement of the need for Own Contributions in the case the proposal is approved for funding. In a preliminary step, only the hosting institution, i.e. the institution of the main applicant, must sign a letter. A template is found on *mySNF*.

Proposals will be selected by the Systems Biology Review Panel appointed by the SNSF, consisting of more than ten international experts from the relevant disciplines and six members of the National Research Council of the SNSF.

- The Systems Biology Panel will assess all the submitted proposals against the criteria specified below, and short-list the most promising 20-25 proposals. Proposals that are not short-listed are rejected.
- The Scientific Executive Board (SEB) of SystemsX.ch will evaluate the contributions of the short-listed proposals to the goals of the SystemsX.ch initiative and forward its recommendation to the SNSF.
- The Systems Biology Panel will select the most promising projects among the short-listed proposals based on the oral presentation of the applicants, the recommendations of the Scientific Executive Board of SystemsX.ch, and the final assessment of the panel. The main applicants of the short-listed proposals will be invited for a presentation and discussion with the SNSF Review Panel on September 23-24, 2013.
- The decisions must be approved by the SNSF Presidium. The final decision is expected to be announced in October/November 2013.

3.1.9 Selection Criteria

The Systems Biology Review Panel will select the RTD proposals according to the following criteria:

I. Contribution to the progress of Systems Biology and integration into the overall SystemsX.ch initiative;
II. Scientific quality including added value of the RTD-Project as a whole compared to the sum of all its sub-projects;
III. Contribution to the public-private partnership;
IV. Financial planning in general and distribution of the funding (total costs, own contributions, federal grant application, third party funding).

In addition to the above mentioned criteria, the standard scientific criteria set forth in the SNSF Rules of Procedure (Reglement über Gesuche SystemsX.ch, 3. Juli 2007) will apply:
a) Scientific relevance and topicality of the proposal
b) Originality of the questions
c) Adequacy of the methodology
d) Scientific track record of the applicants
e) Expertise of the applicants concerning the proposal
f) Feasibility of the proposal.

The strategic evaluation by the SEB will be made in due consideration of the Systems Biology approach, its justification, and the significance for SystemsX.ch.

The decision will be based exclusively on scientific criteria. This means that the approved projects **must** (1) add value to Systems Biology and (2) represent high scientific quality. If a substantial part of a RTD-project does not meet these criteria, the whole project will be rejected.

In case of equal scientific quality, proposals of consortia with private sector participants will be funded.

3.1.10 Annual Scientific and Financial Reporting

The annual scientific progress report of each RTD project is to be submitted to the SystemsX.ch Management Office. The reports will be consolidated and passed onto the SNSF where they will be reviewed by the SNSF Review Panel for Systems Biology.
The financial reports are also to be submitted to the Management Office of SystemsX.ch, the following items must be disclosed according to defined directives (cf. Partnership Agreement Article 38, No. 4):

- SystemsX.ch funds
- Own contributions "in cash" and "in kind" by the involved partners;
- Contributions by the private sector (industry or SME) to the SystemsX.ch project;
- Additional third party funds from competitive research foundations (SNSF, CTI, EU, NIH, etc) which support SystemsX.ch.

3.2 Transfer Projects to and from the Private Sector (Transfer Projects)

In addition to promoting top science at our partner institutions, SystemsX.ch aims to bring Systems Biology closer to various industries and SMEs and to medical/clinical applications in hospitals. This can be catalyzed by the participation of private sector scientists in RTD projects (see chapter 3.1). In 2012, SystemsX.ch has created a new project category for the second phase. These projects, called "Transfer projects" (TF) specifically promote public private partnerships between academia and industry/SME in the field of Systems Biology through a novel way to initiate and explore Systems Biology research collaborations. Another possibility of a Transfer project is a collaboration between academia and a (private) hospital to apply a systems approach to a clinical question. The aim of a Transfer project is to enhance and develop mutually interesting technologies or research relevant to Systems Biology. The collaboration shall enable academia and the private partner to work together on a set of scientific questions or methods.

Any sort of outsourcing of specific techniques or beta-testing of equipment will not be considered. Similarly, no 'fees for service'-like proposals will be considered. It also should be noted that SystemsX.ch funding can legally only be used to support research in public institutions.

Transfer projects are tailor-made cooperation of one (or several) research groups from both academia and the private sector (industry, SME, hospital, etc). The number of (co-)PIs is at least two (one academic, one private), but not limited. Transfer projects are awarded for two years, and are extendable – if evaluated successfully – to a third year.

3.2.1 Transfer Project Characteristics

The project must involve at least one research group from a SystemsX.ch partner institution. The scientific question or technique being addressed must be relevant to Systems Biology and of general interest. A strong track record of the involved groups is expected. The requested SystemsX.ch funds must be matched (in kind or in cash) by the industry partner. In addition, the academic partner will make some additional contribution to the project (generally in kind).

Details concerning intellectual property rights should be addressed prior to submission between the academic and industrial partners.

As far as number of research groups, project duration and finances is concerned, it is the responsibility of the main applicant to find the optimal setting within the boundaries stated in this document.

3.2.2 Duration, Finances

The duration of the projects can be between 18 and 24 months. If successful, it can be extended to 36 month in total. SystemsX.ch will fund Transfer projects with a maximum of up to CHF 300'000. The private partner institution must provide resources for internal or external research (in cash and/or in kind) to minimally match the SystemsX.ch contributions. A corresponding letter of commitment must be attached to the proposal. **Note**: SystemsX.ch money can only be provided to Swiss public partners. Additional funds both from the academic institution and competitive research foundations (SNSF, CTI, EU, NIH, etc) complement the full cost budget.

Hence, the budget of a Transfer project consists of the following four funding sources:
- Funding requested from SystemsX.ch (for the academic research groups);
- Private partner: resources (at least as much as SystemsX.ch funds) contributing to the Transfer Project (in cash and/or in kind);
- Own Contributions: resources from the academic partner institution (in cash and/or in kind; see 3.1.4.);
- Others: funds directly linked to the project obtained from other competitive research institutions such as SNSF, CTI, EU, NIH, etc.

3.2.3 Set-up of a Transition Project Consortium

It is up to the main applicant to compose the consortium. The SystemsX.ch Management Office offers to act as a broker to connect interested applicants from both academia as well as private sector. Please contact the Management Office to get support.

3.2.4 Who May Apply for Transfer Projects?

Faculty members or experienced scientists of SystemsX.ch partners are eligible as main applicants. The partners from private sector are eligible as co-applicants. However, only SystemsX.ch partners and cooperating partners (according to the revised Research Law SR 420.1, Article 7, No. 4) are eligible to receive SystemsX.ch funding.

If the hosting institution is not yet a SystemsX.ch partner, it must apply to become one after approval by the SNSF.

3.2.5 Documentation to be Submitted

The proposals for Transfer projects are to be submitted using the official forms consisting of the following parts:

Part 1: General Information

Part 2: Scientific Information

1. Summary: concise statement of the goals, milestones and significance of the project (1 page)
2. International standing of all applicants in their field of research (max. 1 page in total)
3. Project plan (clearly structured, maximum 10 pages in total. **Note:** any pages exceeding 10 will not be considered):
   a) Research questions
   b) State of the art
   c) Methods
   d) Milestones
   e) Expected added value

4. Expected impact on Systems Biology and industrial interaction in future (max 1 page)

5. Justification of the systems biology approach, significance of the planned research for SystemsX.ch and future users (private industry, economy, medicine, etc.).

6. Dissemination and bioinformatics: each project will have to provide a concise plan of how software tools, data sets and other resources will be shared with the private partner or made publicly available.
SyBIT will coordinate and provide, together with the various local IT support entities (e.g. Vital-IT), support for all approved RTD projects in terms of bioinformatics including implementation of data sharing and dissemination (contact sybit@sympa.systemsx.ch). If bioinformatics, computational and data resources are needed, please describe the following (max 2 pages):

6.1 Estimated needs for bioinformatics data analysis, statistical analysis, visualization, etc

6.2 Estimated needs for IT hardware resources for storage volume and computation

6.3 Estimated needs for software, middleware, platforms and services, open source or commercial, licenses

6.4 Planned provisioning for the above: resources already exist or new resources are necessary, directly or through SyBIT

Annexes:
- Full cost budget (use Excel Budget forms provided on *mySNF*)
- Signed letter of commitment concerning resources for the project by the private partner.
- CV and publication list over the past 5 years of all applicants
- Concept of IPR-treatment if the proposal is funded.

3.2.6 Submission Deadline

The proposals for Transfer projects are to be submitted by **June 30, 2013** using the SNSF web platform *mySNF* (www.snf.ch). After the completion of the submission on the web platform, the thereby compiled PDF-file must also be sent to admin@systemsX.ch.

Please note: for the SNSF to be able to guarantee *mySNF* access, new user accounts must be requested five working days before a deadline at the latest (from abroad: 2 weeks before the deadline). It is the responsibility of the applicants to ensure timely delivery of their proposal. SNSF and SystemsX.ch reject any responsibility for electronic / e-mail problems or any other problems.

3.2.7 SNSF Selection Procedure for Transfer Project Proposals

The selection of the proposals will be preceded by a formal check by the SNSF administration. Proposals which fail to comply with the formal requirements will not be admitted to the next stage of the selection procedure and will be rejected if the defect cannot be easily remedied. The following formal requirements must be met:

- Compliance with the submission deadline (postmark)
- Use of the official forms and completeness of the proposal written in English
- Eligibility of the main applicant and the co-applicant(s)

Proposals will be selected by the Systems Biology Review Panel appointed by the SNSF, consisting of more than ten international experts from the relevant disciplines and six members of the National Research Council of the SNSF.

- The Scientific Executive Board (SEB) of SystemsX.ch will evaluate the contributions of the submitted proposals to the goals of the SystemsX.ch initiative and forward its recommendation to the SNSF.
- The Systems Biology Review Panel will assess the proposals against the criteria specified below while taking into account the recommendations of the Scientific Executive Board of SystemsX.ch.
- The decisions must be approved by the SNSF Presidium. The final decision is expected to be announced in October/November 2013.

3.2.8 Selection Criteria

The Systems Biology Panel will select the Transfer project proposals according to the following criteria:

I. Contribution to the progress of Systems Biology and integration into the overall SystemsX.ch initiative;
II. Scientific quality including added transfer value of the project;
III. Contribution to the public-private partnership;
IV. Financial planning in general and distribution of the funding (total costs, own contributions, federal grant application, third party funding).

In addition to the above mentioned criteria, the standard scientific criteria set forth in the SNSF Rules of Procedure (Reglement über Gesuche SystemsX.ch, 3. Juli 2007) will apply:

a) Scientific relevance and topicality of the proposal
b) Originality of the questions
c) Adequacy of the methodology
d) Scientific track record of the applicants
e) Expertise of the applicants concerning the proposal
f) Feasibility of the proposal.

The strategic evaluation by the SEB will be made in due consideration of the Systems Biology approach, its justification, and the significance for SystemsX.ch.

The decision will be based exclusively on scientific criteria. This means that the approved projects **must** (1) add value to Systems Biology and (2) represent high scientific quality. If a substantial part of a project does not meet these criteria, the whole project will be rejected.

3.2.9   Annual Scientific and Financial Reporting

The annual scientific progress report of each Transfer project is to be submitted to the SystemsX.ch Management Office. The reports will be consolidated and passed onto the SNSF where they will be reviewed by the SNSF Panel for Systems Biology.

The financial reports are also to be submitted to the Management Office of SystemsX.ch, the following items must be disclosed according to defined directives (cf. Partnership Agreement Article 38, No. 4):

- SystemsX.ch funds
- Own contributions "in cash" and "in kind" by the involved academic partners;
- Contributions by the private sector (industry or SME) to the SystemsX.ch project;
- Additional third party funds from competitive research foundations (SNSF, CTI, EU, NIH, etc) which support SystemsX.ch.

4   Appendix

4.1   Abbreviations

BoD	Board of Directors (all Presidents and Rectors of SystemsX.ch partner institutions)
CTI	Commission for Technology and Innovation
EU	European Union
IPhD	Interdisciplinary PhD Project
MO	SystemsX.ch Management Office
NIH	National Institute for Health
RTD	Research, Technology and Development
SEB	Scientific Executive Board (scientists of different Systems Biology fields & partner institutions)
SER	State Secretary for Education and Research
SME	Small and Medium-sized Enterprise
SNSF	Swiss National Science Foundation
SUK/CUS	Swiss University Conference
TF	Transfer Project
TPdF	Transition Postdoc Fellowship

4.2   Partner Institutions of SystemsX.ch (as of January 2013)

ETH Zürich (leading house)	University of Bern
EPF Lausanne	University of Fribourg
Friedrich Miescher Institute	University of Geneva
Paul Scherrer Institute	University of Lausanne
Swiss Institut of Bioinformatics	University of Neuchâtel
University of Basel	University of Zürich