SystemsX.ch
The Swiss Initiative in Systems Biology

6th Call for Proposals for SystemsX.ch Projects

In the Messages on Education, Research and Innovation for 2008-2011 and 2012, the Federal Council provided funds to support the first phase of the SystemsX.ch initiative. The Message on Education, Research and Innovation for 2013-2016 envisages a second phase for SystemsX.ch. Subject to approval of the overall program by Parliament, SystemsX.ch issues a sixth Call for Proposals.

Summary

The 6th Call 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) projects. For successful projects funding will be provided, after peer review, for the period of 2013-2016. 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.
In addition, SystemsX.ch promotes public-private partnership by calling for proposals for Transfer Projects bridging the gap between academia and the private sector.

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 was founded in 2007 as The Swiss Initiative in Systems Biology. It has the legal structure of a "simple partnership" and its members are the main Universities and Research Institutions in Switzerland. The present partner institutions (so-called "SystemsX.ch partners") are listed in the chapter 4 (appendix of this documents) and every scientist working at a partner institution is eligible to apply for SystemsX.ch funding. The goal of SystemsX.ch is to provide a framework and resources to allow research groups across all partner institutions to jointly develop and apply systems approaches to the study of biological processes.

SystemsX.ch is fostering interdisciplinary research and education in systems biology at the highest level by developing and using the knowledge and tools necessary to expand our understanding of and ability to teach biology as an integrated quantitative and predictive science. 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. Projects in the form of private-public partnerships are specifically encouraged.

As a result of the first phase of SystemsX.ch (2008-2011) a total of about 100 SystemsX.ch projects were approved, involving more than 300 research groups and more than 1'000 scientists. The initiative allows academic and private scientists in a coordinated manner to contribute to the inevitable paradigm shift in life science research towards the analysis of biological processes as integrated systems. It is expected that this transition will affect most branches and specialty fields of life science research and will provide a basis for the development of entirely new directions, including synthetic biology and personalized medicine.

The Systems Biology panel of the Swiss National Science Foundation (SNSF) reviewed the progress of SystemsX.ch in October 2010 and in October 2011. It strongly supports the continuation of SystemsX.ch at unchanged funding levels for the period of 2013 to 2016.

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**. Ultimately, however, all decisions will be subject to approval of the SystemsX.ch second phase by the Swiss National Parliament in the context of the Message on Education, Research and Innovation for 2013-2016, which will be discussed in summer 2012. More information can be found 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 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 of 6th Call for Proposals

SystemsX.ch will support interdisciplinary projects that comply with above definition of Systems Biology. This is the first call for proposals for the second phase of SystemsX.ch (2013-2016). With the present 6th Call for Proposals, SystemsX.ch invites scientists from the SystemsX.ch partner institutions to apply for Research, Technology and Development (RTD)

projects. Scientists not previously associated with SystemsX.ch, scientists focused on the development of mathematical models of biological processes and scientists bridging the private and public sector are particularly encouraged to apply.

In this 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,
- increase the collaboration with the private sector,
- focus on systems biology approaches to clinical questions

In this 6th 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 2008), are invited to submit a proposal to continue operation 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. Approximately half of the available research funding will be allocated to support new projects, provided that a sufficient number of new projects will pass peer review. Please find further details for each project type in chapter 3.

Submission **deadline** for the proposals of this 6th call is **26 August 2012**. The SNSF review panel will convene on 18-19 October 2012. Main applicants may be invited to present their proposal and discuss it with the SNSF panel.

Between April and June 2012, SystemsX.ch will organize several information and networking events at the partner institutions (see chapter 2.4) as well as online tools to help consortia to find partners.

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. A call for these project types was closed end of January 2012, the next calls for IPhDs and Transition Post-Doc Fellowships will be issued in fall 2012 and fall 2013. The next call for RTDs and Transfer Projects will be published in spring 2013.

2.4 Information Forum at the Partner Institutions

To provide further information on this call for proposals and SystemsX.ch in general, SystemsX.ch will organize information events at the SystemsX.ch partner institutions between April and June 2012. The events are 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 details including a schedule of the events 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 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 can be found on the SystemsX.ch website. However, please note that the RTDs in this second phase will be restricted to 4 years without the option for extension.

Proposals will be evaluated jointly by the SystemsX.ch Scientific Executive Board (SEB) and an international, interdisciplinary review panel of the SNSF. 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.

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 2008 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 2008, 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. Letters of intended own contributions 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 industry 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 Post-doc Fellowships, interdisciplinary PhD projects (IPhDs) and Transfer Projects. 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.

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

[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.

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 (1-2 pages)
2. International standing of all applicants in their field of research (2-3 pages in total)
3. Research plan (maximum 30 pages in total. **Note:** any pages exceeding 30 will not be considered):
   - 3.1. Overall research questions, 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.) including plans for dissemination in particular of data sharing (what standards and tools will be used, how will result data be made available at what time) (1-2 pages)
5. Bioinformatics: 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 (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 (Excel Budget forms provided)
- 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 **26 August 2012** 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 Principal Investigator (PI), must sign a letter found on the mySNF link.

Proposals will be selected by the Systems Biology 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 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 National Research Council. The final decision is expected to be announced in December 2012.

3.1.9 Selection Criteria

The Systems Biology 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; see http://www.snf.ch/SiteCollectionDocuments/systemsx_reglement_d.pdf) 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 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 or to clinical applications in hospitals. This can be catalyzed by the participation of private sector scientists in RTD projects (see chapter 3.1). Additionally, SystemsX.ch has created a new project category for the second phase. These projects, called “Transfer Projects” specifically promote public private partnerships between academia and industry 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 will not be considered. Similarly, no ‘fees for service’-like proposals will be considered. It also should be noted that that SystemsX.ch funding can legally only be only be used to support research in public institutions.

Transfer Projects are tailor-made cooperation one 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 2 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 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 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 (1 pages)
2. International standing of all applicants in their field of research (max. 1 page in total)
3. Project plan (maximum 10 pages in total. **Note:** any pages exceeding 10 will not be considered):
    3.1. Overview, framework of the whole project, goals, expected added value (max 4 pages)
    3.2. Research: state of the art, questions, methods, milestones (max 6 pages)
4. Expected impact on Systems Biology and industrial interaction in future (max 1 page)

    Justification of the systems biology approach, significance of the planned research for SystemsX.ch and future users (private industry, economy, medicine, etc.) including plans for dissemination in particular of data sharing (what standards and tools will be used, how will result data be made available at what time) (1 page).
5. Bioinformatics: SyBIT will coordinate and provide, together with the various local IT support entities (e.g. Vital-IT), support for all approved SystemsX.ch projects in terms

of bioinformatics including implementation of data sharing (please 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 (Excel Budget forms provided)
- 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 **26 August 2012** 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 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 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 National Research Council. The final decision is expected to be known in December 2012.

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; see http://www.snf.ch/SiteCollectionDocuments/systemsx_reglement_d.pdf) 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

4.2 Partner Institutions of SystemsX.ch (as of January 2012)

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