

**Transnational call for research projects
within the ERA-NET ERASysBio:**

**“The consolidation of systems biology research –
stimulating the widespread adoption of systems approaches in
biomedicine, biotechnology and agri-food”**

This document announces the transnational joint call for research projects on System Biology within the framework of the ERA-NET ERASysBio. The main purpose of the call is to generate transnational collaboration for research and development on systems biology in Europe. The call focuses on *“stimulating the widespread adoption of systems approaches in biomedicine, biotechnology and agri-food”*, and it is open to joint transnational research proposals, with a maximum of 7 participants from a minimum of 2 ERASysBio partner countries (AT, DE, ES, FI, FR, IL, LU, NL, SI, UK). Regardless of its size, each collaborative consortium should have the optimal critical mass to achieve ambitious scientific goals and should clearly show the specific contribution of each research group and the added value from working together.

Proposals may be submitted by research groups working in universities (or other higher education institutions), non-university public research institutes, hospitals and private companies. Small and medium-size enterprises (SMEs) are encouraged to participate. Applicants are advised to check for eligibility with their own funding organisation before applying. The submission and assessment of proposals will be performed in two steps and their evaluation carried out by an international peer review panel of experts. Applicants are advised to read and comply with their national thematic areas and specific regulations as described in Table 1 and in the National Annexes. The deadline for submitting pre-proposals is January 5th, 2009. Selected pre-proposals will be invited to submit full proposals by May 4th 2009. Projects are expected to start in autumn 2009.

1. Motivation

Systems biology is an emerging research field, which aims at understanding the dynamic interactions between components of a living system, between living systems

and their interaction with the environment. Systems biology is an approach by which biological questions are addressed through integrating experiments in iterative cycles with computational modelling, simulation and theory. Modelling is not the final goal, but is a tool to increase understanding of the system, to develop more directed experiments and finally allow predictions (*Systems Biology in the European Research Area*, p.9, www.erasysbio.net.)

In other words, existing and/or newly generated datasets are used to develop mathematical models of biological processes. Simulations issued from these models provide input for experiments in the wet lab, leading to new and better datasets. By repetition of this cycle our knowledge of biological processes will rapidly increase. Systems biology makes use of an interdisciplinary approach, integrating the fields of biology, mathematics, chemistry, physics, informatics, engineering and other disciplines to enhance understanding of biological processes. To understand the complexity of these processes, new tools need to be developed that integrate the iterative use of data input, computational modelling, simulation and experiments.

ERASysBio contributes to the consolidation of European research in systems biology through supporting the convergence of national research programmes in systems and computational biology, mathematics, information technology, engineering and other systems biology-related fields. This transnational call intends to stimulate interdisciplinary research throughout Europe in this growing field.

The following ERASysBio partner funding organisations have agreed to participate in the call (hereinafter referred to as the PARTNERS):

- Forschungszentrum Juelich GmbH (Project Management Juelich), Germany
Federal Ministry of Education and Research (BMBF), Germany
- Federal Ministry for Science and Research (BWF), Austria
- Academy of Finland (AKA), Finland
- Agence Nationale de la Recherche (ANR), France
- Israel Science Foundation (ISF), Israel
- Netherlands Organisation for Health Research and Development (ZonMw),
Netherlands
- Ministry of Higher Education, Science and Technology (MHEST), Slovenia
- Ministry of Science and Innovation (MICINN), Spain

- Biotechnology and Biological Sciences Research Council (BBSRC), United Kingdom
- Fonds National de la Recherche Luxembourg (FNR), Luxembourg

The PARTNERS are opening the call simultaneously in their respective countries. The admission of proposals will be centrally managed by the Joint Call Secretariat, representing the PARTNERS. The guidance for preparing and submitting proposals is given in the main call text and applies to all countries participating in the call. Applicants must refer and adhere to their own specific national regulations as detailed in the National Annexes.

Table 1. Date of national publications and links to relevant documents

PARTNERS		Publication date	Documents, national annexes and contacts
Austria	BMWF	TBA	Please click here
Germany	BMBF	08.10.2008	Please click here
Finland	AKA	TBA	Please click here
France	ANR	TBA	Please click here
Israel	ISF	TBA	Please click here
Luxembourg	FNR	TBA	Please click here
Netherlands	ZonMw	15.10.2008	Please click here
Slovenia	MHEST	17.10.2008	Please click here
Spain	MICINN	TBA	Please click here
United Kingdom	BBSRC	15.10.2008	Please click here

2. Aim of the call

The aim of the call is to enable transnational, collaborative research projects in systems biology research involving the quantitative and integrative understanding of dynamic biological processes. Proposals must involve interdisciplinary studies that will combine applied mathematics and/or statistics with experimental data to create and validate appropriate models. All aspects of biotechnology, biomedicine and agri-food from molecular systems, to cells, organs, up to whole organisms are considered in this call. Biotechnology is the application of scientific and engineering principles to the

processing of materials by biological agents to provide goods and services; biomedicine concerns health and biology from fundamental to clinical research, including multi-factorial diseases research; agri-food involves research on sustainable agricultural systems, food quality, diet and health. Research focused on microorganisms should be clearly distinctive from research fields funded under the SysMO initiative¹.

Table 2. Thematic areas to be funded by each PARTNER.

PARTNER		Biomedicine	Biotechnology	Agri-food
AT	BMWF	Yes	No with exceptions	No with exceptions
DE	BMBF	Yes	No with exceptions	No with exceptions
FI	AKA	Yes	Yes	Yes
FR	ANR	Yes	Yes	Yes
IL	ISF	Yes	Yes	Yes
LU	FNR	Yes	Yes	Yes
NL	ZonMw	Yes	No with an exception for medical & health goods & services	No with exceptions for food, diet, and health
SI	MHEST	Yes	Yes	Yes
ES	MICINN	Yes	Yes with exceptions	Yes with exceptions
UK	BBSRC	Yes with exceptions	Yes	Yes

IMPORTANT: Applicants are strongly advised to refer and adhere to their National Annexes (Table 1) for a more detailed description of the remit of this call and the specific areas to be funded by each ERASysBio PARTNER organisation.

¹ SysMO is the 1st ERASysBio transnational funding and research initiative on "Systems Biology of Microorganisms" aiming at a comprehensive understanding of dynamic molecular processes in unicellular microorganisms through computerized mathematical models. SysMO is funded by 6 ERASysBio PARTNERS and was launched in 2006. Details on SysMO activities and projects can be found at www.sysmo.net.

3. Management boards

Two boards, the Call Steering Committee (CSC) and the Scientific Advisory Board (SAB), will manage the evaluation process of the call with support of the Joint Call Secretariat. The process includes the evaluation procedure of pre- and full-proposals and the final selection and award of research projects:

i) **The Call Steering Committee (CSC)** is composed of one member from each PARTNER. The CSC is entitled to nominate SAB members. The CSC will supervise the progress of the call and the evaluation of proposals. Following the evaluation and ranking of proposals by the SAB, the CSC will ultimately make funding recommendations to the national funding organisations of the proposals to be funded. Each PARTNER will appoint a national programme manager to be responsible for local matters. All decisions concerning the call procedures will be taken by the CSC.

ii) **The Scientific Advisory Board (SAB)** is a panel of international scientific experts responsible for the evaluation of submitted proposals, and for the monitoring and evaluation of funded projects. SAB members are nominated by the CSC. Members appointed to the SAB will not submit or participate in proposals within this call. SAB members will be required to declare during the course of their appointment personal or business interests which may conflict with their responsibilities as an SAB member.

4. Eligibility, financial modalities and funding prerequisites

4.1. Eligibility

Joint proposals may be submitted by scientists from higher education institutions, non-university public research establishments (including hospitals and clinics), private non-profit research institutions and private companies (including SMEs). The eligibility of the afore-mentioned institutions as well as details of eligible costs, i.e. personnel, material, consumables, travel expenses, are subject to the individual administrative requirements of each PARTNER and may therefore vary.

Joint collaborative proposals submitted to this call must involve at least 2 ERASysBio PARTNER countries with a maximum of 7 participants. Each consortium must nominate a project coordinator to represent the entire consortium and to be responsible for its internal management.

Participants from non-PARTNER countries may be involved in projects if they secure their own funding and if their expertise is indispensable for reaching the project objectives. However, the maximum number of seven participants may not be exceeded.

Pre-proposals or full proposals exceeding the established limit or including additional documents will not be considered.

For full details and national contacts see National Annexes (Table 1).

4.2 Financial and legal modalities

All project participants of funded projects are expected to sign a Consortium Agreement (CA) no later than 6 months from the start date of the projects. The Joint Call Secretariat must be informed when the CA is formally completed and signed. Funding is available for projects of up to three years. Eligible costs vary and are subject to the specific regulations of national funding organisations. Each participant in the call is subject to the rules and regulations of its own national funding organisation. PARTNERS reserve the right to make the final decision concerning the funding of research projects in their own countries.

5. Submission of proposals

This transnational call for proposals will involve a two-step procedure, i.e. pre-proposal and full proposal, with the following timetable:

15/10/2008	Launch of the call
05/01/2009	Deadline for pre-proposal submission
02/03/2009	Communication of the results of the assessment of pre-proposals
04/05/2009	Deadline for full proposal submission
01/08/2009	Communication of the funding decision

01/11/2009	Projects to start
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5.1 Pre-proposals

Joint pre-proposals must be submitted **electronically with the submission tool on the ERASysBio webpage** by 5th January 2009, at 12:00 am CET. The submission tool will be available on www.erasysbio.net from the 15th of November onwards. Pre-proposals must be written in English and not exceed a maximum of five pages (Arial, 10 pt, single space). Pre-proposal application forms are available on the ERASysBio website on the [Call Secretariat](#) page.

Pre-proposals should not exceed 5 pages and should include:

1. Pre-proposal application ([Form P1](#): Pre-proposal basic data) with:

- Call thematic area of the proposal (biomedicine/ biotechnology/ agri-food)
- In two A4 pages: names, positions and full affiliations of the project leaders of each group member of the consortium. The consortium must nominate a project coordinator. A total of five selected publications by members of the consortium and relevant to the proposal.

- In two A4 pages: summary and project aims, expected results and their exploitation. Applicants must include a statement that describes how the proposal fits the definition of systems biology.

2. Pre-proposal financial plan:

- In one A4 page ([Form P2](#): Pre-proposal financial plan). Applicants are strongly advised to adhere to their specific national financial regulations.

The information given in the pre-proposal is binding. Thus, any fundamental changes between the pre- and full proposals, e.g. composition of the consortia, objectives of the project, must be communicated to the Joint Call Secretariat with detailed justification and will only be allowed by the CSC under exceptional circumstances.

The Joint Call Secretariat, assisted by the team of national programme managers, will first check pre-proposals for formal requirements and eligibility of the applicants and institutions. Following SAB recommendations on appropriateness and relevance of proposals to the aims of the call, the CSC will decide upon the list of pre-selected

projects, and applicants will be informed on 2nd March 2009 whether they are invited to submit full proposals. Limited feedback comments will be given to unsuccessful applicants.

5.2 Full proposals

Full proposals must be submitted **electronically with the submission tool on the ERASysBio webpage**, by 4th May 2009 12:00 pm CET, by means of the full application forms available on the ERASysBio homepage). The submission tool will be available on www.erasysbio.net from the 15th of November onwards. Full proposals must be written in English (Arial, 10 pt, single space) and must not exceed the indicated page limits (see below). Full proposal application forms are available at the ERASysBio website on the [Call Secretariat](#) page.

Full proposals must include:

1. Description of participants and the project ([Form 1](#): Full proposal basic data and [Form 2](#): Full proposal detailed information) including:
 - Summary: to include workplan, aims and expected results (max. 1 page)
 - Background, state-of-the-art (max. 2 pages)
 - Work plan: to include a description of workpackages, milestones and deliverables and the involvement of each participant in each of them, together with the overall management of the project (max. 2 pages plus 2 additional pages per participant)
 - Added value of the proposed international collaboration, specific integration of participants in the transnational consortium structure (max. 1 page)
 - Data standards, data management, data sharing: applicants must define a set of data standards and best practice to be adopted by the consortium and present a clear structure for the management and sharing of data and models within the consortium (max. 1 page)
 - Related projects: description of ongoing projects of each participant related to the present topic, indicating funding sources and amounts, and potential overlap with the current proposal (max. ½ page per participant)
 - Curriculum Vitae: Brief CVs of the project leaders, including a list of up to five recent publications (max. 1 page per partner).
 - Facilities and large equipment: description of significant facilities and large equipment available to the consortium (max. 1 page)

- Justification of requested resources: human resources, equipment, subcontracting, travel and other additional costs (max. 1 page)
 - Training opportunities: description of any training/exchange activities foreseen within the project, if applicable (max. ½ page)
 - Dissemination and/or exploitation of results and management of intellectual property at the international level (max. ½ page)
 - Societal and ethical aspects: contribution to societal issues, e.g. ethics, environment, and/or intellectual and cultural development, indicating any aspects of the proposal that could possibly raise societal concerns or ethical issues (max. ½ page)
 - For companies: short description of the company, financial status quo (max. 1/2 page per company)
2. Full proposal financial plan:
- to be completed on the provided form ([Form 3: Full proposal financial plan](#)). Please refer to national annexes for national specific requirements (Table 1).

5.3 Evaluation of full proposals

Full proposals will be assigned to at least two reviewers. Anonymised peer-reviewers' comments will be submitted to the project coordinator. The project coordinator will have the chance to respond, on behalf of all project partners, to the reviewers' comments and potential questions within two weeks. The response is strictly limited to 3 A4 pages (Arial, 10 pt, single space). Attachments or appendices are not permitted. All exceeding pages will be deleted regardless of the content. The SAB will evaluate the full proposals based on the reviewers' assessments, the response of the project coordinators to reviewers' comments, and the discussions held by all SAB members at the panel meeting. Scoring and ranking of proposals will be performed through consensus by the SAB, using the following criteria and a scoring system A-E:

- Scientific and/or technological excellence – quality, innovation and international competitiveness of the transnational project
 - Sound concept and quality of objectives
 - Progress beyond state-of-the-art
 - Quality and effectiveness of the scientific and technological methodology and associated workplan
 - Appropriateness and relevance to the concept of systems biology

- Quality and efficiency of the implementation and management
 - Appropriateness of the management structure and procedures, its organisation and coordination, including the management and sharing of data and models.
 - Quality and relevant experience of individual participants, including interdisciplinarity
 - Quality of the consortium as a whole, including complementarity and balance
 - Added value of the international collaboration
 - Timeliness, suitability of work schedule, requested resources, and feasibility

- Potential impact
 - Contribution to the advancement, implementation and consolidation of systems biology
 - Appropriateness of measures for the dissemination and/or exploitation of transnational projects' results, and management of intellectual property

5.4 Decision

The CSC will make funding recommendations following the ranking list provided by the SAB. Final funding decisions will be made at the national level. Projects are expected to start in autumn 2009.

The **Joint Call Secretariat** will communicate to all project coordinators the final decisions together with the commentaries (feed back) from the SAB.

6. Contacts

The only official communication line of the proposal is between the **Joint Call Secretariat** and the project coordinator. The project coordinator will be the person contacted by the **Joint Call Secretariat** during the application procedure, so he/she must forward this information to the other participants. The national contact of each PARTNER may be approached for information about the specific national requirements (see Table 3).

Table 3. National contacts

Country	Contact person	E-Mail
Austria	Nicole Firnberg	nicole.firnberg@ffg.at
Finland	Dr. Merja Kärkkäinen	merja.karkkainen@aka.fi
France	Dr. Véronique Briquet-Laugier	veronique.briquet-laugier@agencerecherche.fr
Germany; Joint Call Secretariat	Dr. Veronika Simons	v.simons@fz-juelich.de
Luxembourg	Dr. Frank Glod	frank.glod@fnr.lu
Israel	Dr. Rina Guy	rina@isf.org.il
Netherlands	Dr. Meg van Bogaert	bogaert@zonmw.nl
Slovenia	MSc. Marta Šabec Paradiž	marta.sabec@gov.si
Spain	Dr. Julio Barbas	julio.barbas@mec.es
United Kingdom	Dr. Gabriela Pastori	gabriela.pastori@bbsrc.ac.uk

7. Post-award requirements

7.1. Reporting and dissemination

The coordinators of all the funded projects must submit a mid-term and final scientific project reports (in English) to **the Joint Call Secretariat** together with summary reports from each partner. In addition, in accordance with specific national regulations, each partner should submit periodical financial and scientific reports and a final report to its national funding agency. It will be a condition that all funded consortia set up a public website. Full details will be provided at a later stage.

The coordinators will present the progress of their projects at mid-term and final dissemination events. Any publications resulting from the funded projects must acknowledge the respective national funding organisations and the ERA-NET ERASysBio; one copy must be sent to **the Joint Call Secretariat**. Full details will be provided at a later stage.

7.2. Data management and intellectual property rights

It is expected that Data Management will extend beyond the boundaries of each consortium, and that a common strategy will be agreed and adopted by all funded projects, for communication, data storage, data/model exchange and data/model sharing. Applicants may wish to consult the SysMO website (www.sysmo.net) as one approach to this subject.

Guidance will be provided to all funded project coordinators to assist their consortia in drafting their collaboration agreements. Any specific requirements will be discussed with funding organisations through the Joint Call Secretariat on a case by case basis. Applicants may wish to consult the European Research and Project Office guidelines for drafting collaboration agreements. For information, please visit the [IPR Helpdesk website](#).”