



SWEDISH FOUNDATION *for*  
STRATEGIC RESEARCH

**SSF Call for Proposals:**

**Framework Grants for Strategic Research on  
MED-X;  
*Medicine meets IT, electronics, and materials research***

The Swedish Foundation for Strategic Research announces SEK 200 million in a national Call for problem-, challenge or application-driven research projects that meet the highest international scientific standards. The Call aims to stimulate collaborative multidisciplinary research within the area of “MED-X”; Medicine in convergence with IT, electronics, or materials research, of relevance to present or future Swedish-based industry and the wider society.

Selected projects will be supported by grants of SEK 4-7 million per year for a period of 5 years (incl. overheads) to be used for salaries (senior researchers, postdocs, PhD-students, etc.), expensive equipment and other research infrastructure, research tools, and running costs per the needs of the project. Funding for the last two years will be contingent upon a successful midterm evaluation.

**Background**

Science-driven innovation in the medical technology area is key to future health care and related markets. There are about one million medical technology products registered in the world. Sweden’s export and import of such products is today on par with ~ SEK 20 billion, with potential for retaining export surplus. Furthermore, Sweden is one of the top three patent filing countries within the Med-tech/bioengineering area.

Progress in medical research depends on, and can be accelerated by, developments in cross-cutting edge technologies in electronics, material sciences, and information technology. Integration of front-line knowledge into multidisciplinary settings in scientific environments of high international recognition can deliver novel and substantially improved solutions to clinical problems, with a high prospective user value with improved health care, and economic growth.

**Scope**

The aim of this Call is to promote novel convergence research projects that address strategic topics that connect medical and engineering sciences for enabling the next generation of strategic clinical applications, both human and veterinary.

This Call is primarily directed towards the engineering fields for actual use in clinical practice and the projects must be based on a qualified clinical problem or need.

Application areas for use in clinical practice are prevention, diagnosis, monitoring and/or treatment of diseases, restoration or modification of body functions or body parts, and improvement of the quality of life for people or animals suffering from disabilities and in various healthcare services. The projects must aim to provide measurable improvements to such need in application by using various kinds of technological approaches. The engineering and/or information technology research questions should be significant and correspondingly challenging. The project team should thus be both innovative and have proficiency in medicine and physics, chemistry, mathematics, computer science or other relevant discipline.

Tentative research topics based on a qualified clinical problem or need are:

Bioelectronics, Biomechanics, Biooptics, Biophotonics, Biomicroelectromechanics (Bio-MEMS), Biomaterials, Bionanosystems, Biomanufacturing, Biosoftware and Biorobotics.

Other important adjacent topics may be considered, if motivated by excellent research and strategic impact in clinical application outside academia. Projects relevant to more than one research topic are encouraged and enabling technologies might cut across the above topics.

### **Strategic relevance**

The proposed research shall aim to provide enabling technologies for future applications, products or services, or solutions to important application problems. This could be strengthened by a light version of a Health economic analysis in the application and/or other utility and impact analysis in support of added value.

The criterion of strategic relevance means that the proposal shall demonstrate a clear vision of utilisation/exploitation of the research results in Sweden in the medium to long term. A central part of the relevance is graduate student education and the attractiveness of the corresponding PhD:s in industry and society. This includes providing effective measures for translation and innovation. It is recommended that the PI:s involve partners that can continuously support utilisation/exploitation efforts of research results. One way to do this is to involve a university innovation office and/or holding company, already at the formulation stage of the application.

Three percent of the grant will be reserved by SSF for such directed exploitation activities during the course of the project, as proposed by the applicants (see SSF-terms here: <https://strategiska.se/utlysningar/vilkor-regler-och-policy/>).

### **Eligibility**

All projects should be based on a credible collaboration between, preferably, two to four PI:s (senior applicants) with different kinds of relevant complementary scientific expertise. All PI:s should take active part in the project and their activities should be at least partly financed by the project budget. The applicants must be employed by a Swedish university, university college, or by a public or private non-profit research institute. Furthermore:

- At least one of the PI:s is affiliated with and operates at a faculty of Medicine, Veterinary Medicine or Health,
- At least one of the PI:s is affiliated with and operates at a faculty of Natural Sciences or Engineering,
- Both female and male PI's are included in the project team.

One of the PI:s above is the main applicant and one of the others (from the second faculty) is the deputy main applicant. These two applicants should have the capacity to assume responsibility for the project during the entire grant period, and constitute the default succession if the main applicant leaves the project. Team collaboration, including previous experience, for maximizing synergy of the various competences should be convincingly formulated in the project proposal. The application (and the mid-term report) will be evaluated on, among other criteria, the collaboration between the N/T and M faculty PI's, joint PhD and postdoc projects ("twinning"), plans for cross faculty publications, meetings, and lab-share. Exclusively "subcontractor" relations between N/T and M faculty researchers will not be considered for funding.

Project participation from industry, public authorities or other relevant organisations (e.g. hospitals) is required. Such participants cannot be funded by the SSF grant, but participate on their own budget. SSF requires a letter of intent from each participating university and non-university party expressing commitment. For the non-university parties a total co-funding of a minimum of 5% cash and 5% in-kind, in relation to the SSF grant, is required. Although SSF grants may not be transferred to universities outside Sweden, they may be used for, e.g., visits by foreign-based scientists to applicants working in Sweden.

The proposal budget should be in the interval of SEK 4 to 7 million per year for five years. A maximum of 25% of the grant may be used for salary for the main applicant and/or the co-applicants, but only to cover up to a maximum of 25% of the salary of each applicant. Junior participants (PhD students, postdocs or other junior researchers) may be funded by 100% of the salary. A maximum of 10% of the grant may be used for covering cost of expensive equipment and other research infrastructure.

Please note:

- each applicant is allowed to be represented in only one application as a main applicant.
- each applicant is allowed to be represented in only one application as a co-applicant.
- any one person is allowed to have maximum two SSF-framework grants simultaneously (with an overlap in time of up to three years) as a main applicant.

Applications not conforming to these conditions will not be considered. It is the responsibility of the main applicant to inform all the co-applicants and to check the proposal for compliance with the rules before submission.

### **Proposal and submission**

A complete application must contain, among other data specified in the Portal:

- A clear purpose statement and outline how the proposed constellation of research groups will be effective in view of its objectives,
- Full description of the research plan,
- Details of the relevant expertise and mode of collaboration between the participating groups,
- Clear account of the strategic significance of the research in the medium to long term, including a plan for utilisation/exploitation efforts that should commence in parallel with the research activities, already from day one in the project. This plan should cover SSF's 3% allowance and any corresponding collaborating industry's contribution,
- State-of-the-art description within the area(s) addressed,
- Inventory of the resources available to the project.

The proposal must be written in English and submitted via the SSF Portal at: <http://apply.strategiska.se>.

Note that in order to get a complete view of all data required for submission it is necessary to consult the Portal. Please log on to the Portal well in advance of the deadline. Please also submit the application in due time before the deadline. When the application is submitted, the system will reject it if some data field is missing. As long as this is done before the application deadline it is possible to submit and re-submit as many times as necessary.

All applications must be submitted by **14:00 hours (2:00 pm CET) on November 20 2018**. No additional material will be considered after this deadline.

## Evaluation

Applications will be assessed by an evaluation committee consisting of generalists and specialists from industry, academia, and research institutes. In a first selection the applications will be judged primarily with regards to scope, relevance and potential impact. Furthermore, applications that are judged unable to compete in the final step of the evaluation, or that are considered too incomplete to be meaningfully assessed, will not pass this first step. The selected applications will be sent on international peer review. The results of this expert review will be taken into account by the evaluation committee in order to produce a recommendation on which SSF will base its decision.

The applications will be reviewed using the following criteria:

- Conformity to the scope and eligibility as outlined above,
- Scientific quality; originality, strengths, weaknesses, degree of multidisciplinary and feasibility of the research plan,
- Strategic relevance, with clear purpose and potential impact of the proposed research to Swedish industry and/or society, including explicitly formulated utilization/exploitation plans, with participation of industry or other branches of society in the project,
- Qualifications of the applicants and composition of the research team with degree of synergy, previous achievements (science, innovation, and entrepreneurship), international experience and networks, and leadership/management of research teams.

The quantity and distribution of grants between topics will, depending on the quality and originality of the proposals, be made to achieve a strategic project portfolio, within the scope of the Call.

SSF intends to grant similar number of projects with female respectively male main applicants (project leaders).

## Timetable

- Announcement: June 13, 2018
- Application portal open: End of June 2018
- Last date for applications: November 20, 2018, 14:00 CET at the latest
- Decision by the SSF Board: August 30, 2019
- Project start: September 2019

No additional material submitted after deadline will be considered.

Please note that the Foundation is subject to the Principle of Public Access to Official Records (*Offentlighetsprincipen*). Thus, applicants should avoid submitting material that they do not wish to be made public, e.g., information that could prevent patenting.

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