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SWEDISH FOUNDATION *for*
STRATEGIC RESEARCH

Announcement

The Swedish Foundation for Strategic Research (SSF) announces synergy grants for research in Applied mathematics

The Swedish Foundation for Strategic Research announces a total of SEK 120 million in a national call for proposals for problem- or application-driven research projects within applied mathematics. The research should be of the highest international scientific standard, and include interdisciplinary research collaboration with a dominant mathematical component. It should furthermore be of strategic relevance for Swedish industry or society.

Selected research projects will be supported by synergy grants in the range of SEK 2 - 5 million per year (incl. overhead) to be used for salaries, supplies etc. according to the needs of the projects over a period of five years. Funding during the two last years will be dependent upon a successful mid-term evaluation.

Importance of the area

Mathematical descriptions underlie much of the technological revolution that has produced human prosperity. Over the past few decades, improved computing and communication have brought a succession of many new application domains. As a consequence, scientists from many different fields are exploring new opportunities by incorporation of mathematics.

Application areas of mathematics of interest to industry, science and society are legion and include broadly applicable fields such as simulation, programming, engineering design and optimisation, as well as more specialized topics, such as pollution control, cryptography, testing, image processing and recognition, fraud detection, robotics, quality control, data fusion, logistics, traffic flow control, and an increasing number of approaches related to the understanding of biological systems, from protein folding and DNA sequencing to wild life preservation. Prediction-oriented topics of current interest include consumer preferences, climate calculations and other geophysical assessments, actuarial and financial issues such as risk hedging, etc, and the techniques apply to many situations where precise knowledge, e.g. through actual measurement, is impractical or likely impossible. Mathematics is also central to the design of networks, materials, flows, and different types of virtual structures, e.g. for communication or the creation of visual effects.

Priorities

This call focuses on interdisciplinary projects that solve important application problems or, in other ways, are in direct contact with technological applications. This may be fulfilled in the way that the project ends up with a demonstrator which, for instance, could take the form of functioning software.

The project must include fundamental competence in both mathematics and the application area, but it should have a clear mathematical research component.

The practical definition of strategic relevance, to be used when ranking the applications, is that the research shall demonstrate a clear vision of exploitation in Sweden over a time span of 5-15 years after the project is finished. Applications judged able to make a large contribution to Sweden's future competitiveness will receive higher priority than those judged to make a smaller contribution. This could be clarified by incorporation of a vision of exploitation in the project description, covering the following aspects:

- Description and project relation to state-of-the-art within the area
- Description of the societal needs that the project addresses
- Description of how the project will improve current practices
- Description of those stake holders that need to be actively involved
- Description of how the results will be disseminated
- Description of how intellectual properties will be handled

Eligibility

The application must be submitted by a main applicant who should be an outstanding researcher associated with a Swedish university/college or research institute. If the main applicant is active at a research institute, at least one co-applicant must be working at a university. A presumptive project leader must be prepared to assume the scientific responsibility for the project during the whole period of the grant. The number of co-applicants must be in proportion to the amount applied for, preferably not exceeding three persons with relevant complementary competencies, from the same or different research groups. A maximum of 25% of the grant may be used for salary for the main applicant and/or the co-applicants (i.e. the senior scientists), but only to cover up to a maximum of 25 % of the salary of each applicant. Each applicant may be represented in no more than one application as a main applicant and no more than one application as a co-applicant.

Application

A complete application must contain, among other data specified in the portal, a full description of the research programme and details of the relevant competence. It should contain a clear account focusing on the strategic significance of the research programme.

The application is submitted via the SSF portal at: <http://apply.stratresearch.se>. To get a complete view of all data required for submission it is necessary to consult the portal. Please log on to the portal in due time before the deadline.

Evaluation

Applications will be assessed by an evaluation committee, including scientists from industry and academy. In a first selection the applications will be judged primarily on the strategic relevance and the scope (as described above). Furthermore, applications that the committee judges are too low in quality or too incomplete to be able to be assessed will not pass this first step. The selected applications will be judged by international experts regarding their scientific quality. The result of the scientific assessment and the strategic value of the applications will then be weighed together by the evaluation committee in order to produce a final proposal on which the SSF board will base its decision.

The applications will be reviewed using the following criteria:

- Conformity to the scope as outlined above
- Scientific quality; originality, strengths, weaknesses, interdisciplinarity, and feasibility of the research plan
- Qualification of the applicants, previous scientific accomplishments, international experience, and networks
- Strategic relevance to Swedish industry and/or society and importance of the proposed research

The proposal must demonstrate a vision of exploitation in Sweden within a time span of 5–15 years after completion of a project. It is also important that the application presents a clear picture of the resources available and shows that the proposed constellation of research group will be effective.

Time table

- Last date for applications: **June 17, 2013, 14.00 hrs.**
- Decision by the SSF board: February, 2014 at the latest.

No additional material submitted after the deadline will be considered.

Note that the SSF follows the principle of public access to official records. For this reason, do not send material that may not become public at present, e.g. anything that could prevent possible patenting.

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