MedTechLabs

The recently established MedTechLabs research center is a collaboration between KTH Royal Institute of Technology (KTH), Karolinska Institutet (KI) and Region Stockholm. The center aims to create world-leading demand-driven research in medical technology, aim for better healthcare as well as cost-effective solutions for care. This includes providing more efficient and patient-related diagnostics, therapy and management. The focus is therefore primarily on research that has a potential to be applicable in a clinical environment within the next five years. The center should also create conditions for implementing new knowledge, facilitating dissemination of new clinical methods nationally and internationally.

Achieving these goals involves a commitment to process-oriented healthcare through interdisciplinary collaboration in technology and medicine in the Stockholm region. Principal investigators (PIs) from KI and KTH will work together to develop technology and methods in a clinical environment. For more information, please see www.medtechlabs.se.

In the next five years, MedTechLabs will expand with several new focus areas.

Call for projects

MedTechLabs hereby announces a call for funding of research projects in the fields of bioelectronics and / or AI within healthcare, and thereby form a new focus area. Each project shall involve researchers from KI and KTH. The projects should have the potential to deliver breakthrough developments in the use of bioelectronics and/or AI in healthcare, preferably in areas characterized by high disease burden in society; such as chronic or degenerative diseases.

Project proposals should clearly describe the health challenge being addressed, which approach is proposed, and how collaborating researchers from KI and KTH contribute, respectively.

MedTechLabs intends to support one to three projects in the range of SEK 2 - 7 million per year and project, respectively, during four to five years. The call closes May 30, 2019. The estimated project start is January 1, 2020.

Who can apply
The applicants must include one principal investigator (PI) and one co-PI, from KI and KTH. Both applicants must have a level of activity in the project of no less than 20% of a full-time equivalent and must be employed at least 20% by the respective administrating organisations throughout the grant period. Both PIs must have at least a docent or Associate Professor title.

<u>The application:</u>
The project research plan should be a maximum of 10 pages in Ariel font size 12, line-spaced 1.15, and should include:

- Purpose and goals: State the overall purpose and specific goals of the research environment.
- State-of-the-art: Summarise briefly the current research frontier within the field/area of the collaborative project. State key references.
- Significance and scientific novelty: Describe briefly how the collaborative project relates to previous research within the area, and its importance in the short and long term. Describe also how the project moves forward or innovates the current research frontier.
- Preliminary and previous results: Describe briefly your own and participating researchers' previous research and pilot studies within the research area that make it probable that the collaborative project will be feasible. State also if no preliminary results exist.
- Project description: Describe the collaborative project design, including the following items:
    - Theory and method: Describe the underlying theory and the methods to be applied in order to reach the project goal.
    - Time plan and implementation: Describe summarily the time plan for the project during the grant period, and how the project will be implemented.
    - Project organisation: Clarify the contributions of yourself and the participating researchers to the implementation of the project. Describe and explain the competences and roles of the participating researchers in the project, and also any other researchers or corresponding who are important for the implementation of the project.
    - Potential impact: The content and scientific relevance of the project, to what extent the project's results could contribute to better health, and in which patient groups.
    - Novelty: Describe The extent to which the proposed research exceeds the state-of-the-art in the field, as well as its innovation potential.
    - If there is an element of AI in the proposed project, it should be clear how AI is used in a new way to achieve the project goals. The proposals should clearly

distinguish elements of AI (eg. machine learning and/or deep learning) from that of other advanced analytics.

- o Ethical considerations
- o *Feasibility:* Please describe:
    - how the project will access clinical data and/or patients
    - the availability of the required infrastructure
    - ethics, regulatory considerations and patient safety
- o *Gender and equality aspects:* Please describe how gender and equality aspects will be taken into account, both regarding the hypothesis/issue/purpose of the project as well as the researchers.

- PIs and added value of research collaboration: Describe the planned collaboration between KI and KTH; it should be clearly described how each PI is central to the project's implementation. Describe the excellence of the research groups. Describe how the planned research collaboration will enable the researcher to engage in research tasks that are more comprehensive and challenging than would be possible if the researchers worked individually. State the central scientific questions of the research collaboration, how the collaboration will be built up and/or developed, and how it significantly improves the career opportunities for junior researchers, postdocs and doctoral students working in the environment.
  - o Your application may include several more participating researchers with a doctoral degree, whose scientific competence will be crucial for the implementation of the proposed research. The participating researchers should be listed in the application, as well as how each will contribute. Account for any participation in or association with international collaboration in your research.
- Other applications or grants: Describe the relationship with other applications to or grants from other funding bodies for the same project idea (from you or another researcher).
- Please provide the following information also, when relevant.
  - o Equipment: Describe the basic equipment you and your team have at your disposal for the project.
  - o Need for infrastructure: Specify also the need for local infrastructure, if depreciation costs for this are included in the application.

Additional required documents:
- 2 page CV for each PI
- The 10 most relevant publications for each PI
- Budget. List personnel costs, other costs and any other funding for the project. The model of SUHF for overhead costs for the respective administrative organization should be applied in the budget calculations. Please use the provided budget template and adjust for the indirect costs at your department (the budget template will be provided soon).

- A letter from the head of a clinical unit or equivalent, indicating how the project is anchored in a clinical setting and that support to implement the project will be provided.
- A signed letter from each PI's Head of Department guaranteeing that the project can be carried out as described

The proposals will be evaluated based on the following criteria:
Scientific excellence
- Of the research project
- Of the collaborating research group

Novelty
- The extent to which the proposed research extends the state-of-the-art in the field, as well as its innovation potential.
- The interdisciplinary approach and involvement of appropriate stakeholders.
- To what extent the proposed project will contribute to faculty renewal and development.

Impact
- To what extent the project's results could contribute to better health.
- The likelihood that the results may be applicable in a clinical setting within the following five years.
- The ability to attract a critical mass of relevant researchers, technology experts and industrial partners to accelerate bench to clinical practice.

Efficiency in implementation
- The project plan's quality and efficiency, including the relevant resources, in relation to the project's goals and results.
- Complementarity between the participants from KI and KTH and how they as a whole gather the necessary skills.

Feasibility

Gender and equality aspects

How to apply

The applications will be processed through Region Stockholm's portal for research applications. The link will be provided soon.