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MedTechLabs - announcement of project funding 2024

MedTechLabs research center is a collaboration between KTH Royal Institute of Technology (KTH), Karolinska Institutet (KI), and Region Stockholm. MedTechLabs' main objective is to perform world-leading demand-driven research in medical technology, aiming fo better and more cost-effective health care. The research should lead to improved diagnostics, therapy, and patient management. Therefore, the focus is primarily on research with a potential to be applied in a clinical environment within five years. Another objective is to create conditions required for implementing and disseminating new knowledge and methods in Region Stockholm, and then nationally and internationally.

Achieving these goals involves interdisciplinary collaboration in technology and medicine in the Stockholm region. Researchers from KI and KTH will work together to develop technology and methods in a clinical environment. The center will be developed through a new program area with new constellations. For more information about the present research, please see MedTechLabs.

Call for funding

MedTechLabs announces a call for funding of research programmes in the areas of **(1) Precision health** and **(2) Data-driven healthcare research.**The research should be focused on medical technology with clear clinical applications for preventing and treating widespread diseases.

Precision health aims for increased and more equal health by using data about the individual's biology, lifestyle and environment to prevent, diagnose and treat with precision. Recent advancements in technology and knowledge mean that medicine now faces new opportunities to quickly obtain large amounts of biological data from patients. Using this information effectively will allow us to achieve molecularly precise diagnoses and thereby tailor individual treatments—i.e. precision medicine. Today, society's resources are mainly spent on diagnosis and treatment, and very little on prevention. Precision medicine will provide great and cost-effective opportunities to give more people a longer healthier life.

Data-driven healthcare research: The "data-driven" concept springs from the modern technological advances that continue to produce mountains of systematic, comprehensive, and deep data. Researchers that can use the available data can mine it and discover unexpected and unpredictable relationships and new knowledge. At the same time, computing power, machine learning, AI, and other technologies available to process the

data, have dramatically improved and present great opportunities for those who successfully link it to clinical research.

Each programme must involve one programme director from KI and one from KTH. The programmes should have the potential to deliver breakthrough developments within precision health and/or data-driven healthcare research, in areas characterized by high disease burden in society.

The research programmes should clearly describe the health challenge that will be addressed, the proposed approach, how patients will benefit from the research, and the respective contribution of the collaborating KI and KTH researchers.

MedTechLabs intends to support one to two programmes in the range of SEK 2–7 million per year and programme respectively, during four to five years. **The call opens April 4th and closes at 16:00, June 7th , 2023. Please note the change of closing date.** The estimated project start is January 1st, 2024.

Conditions for applying

- The research should be focused on medical technology with clear applications for preventing and treating widespread disease.
- The applicants must include one Programme Director from KI and one from 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 Programme Directors must have at least a docent or Associate Professor title.
- The application should describe clearly how the programme will secure careers for younger researchers.
- Patient benefit must be clearly stated.
- Patient participation in the design of studies must be included
- Research leaders regardless of whether they have previously had funding from MedTechLabs can apply. However, Program Directors, i.e. leaders of the existing program areas cannot apply again.

How to apply

Applications will be processed through Region Stockholm's portal for research applications, Researchweb, Region Stockholm | Region Stockholm (researchweb.org)

Funding application instructions

- Go to our website at Region Stockholm | Region Stockholm (researchweb.org)
- Select Create new application (*Skapa ny ansökan*).
- Select MedTechLabs Project Funding 2024
- Fill in the application form.

Register your application
The registration form in the system contains fields for registering details about yourself and information.

Please note that the applicant who is logged in ("Programme Director 1") is responsible for the application and the administrative process. That is, only one of the directors can edit the application in Researchweb.

The application form

Basic information

- Programme Director 1: The system automatically registers the person logged in
- Programme Director 2: Fill in the name of Programme Director 2
- Title of the programme: The project title must state what the project is about, and it must be comprehensible even to people who are not familiar with the subject.
- Organizational "domiciles" (hemvist): Enter details of the project's "domicile", i.e. the clinic or equivalent that will administer the project, and the hospital and department or equivalent to which the clinic belongs.
- Popular scientific description: The popular scientific description must be written in Swedish and be easy to understand, even for those who are not familiar with the subject. The description must include:
    - What you intend to do.
    - How the research is to be carried out.
    - In what way the new knowledge will be useful in the healthcare system.
- Scientific summary: Generally describe
    - What will be done
    - Why it is impotant, and
    - How the new knowledge will benefit patients and healthcare
- Requested amount: Specify the requested amounts per year

Programme Director 2
Add Programme Director 2 by inviting the director to the application. The director must have created an account before being invited. The director can also edit their own CV for the application.

Research group and competence
Presentation of the research group and description of competence. Describe the skills in the research group by stating: name, occupation, workplace and position/job. Describe the role/function of each person in the project and his/her planned research time.

The research programme (maximum 32,000 characters, including spaces)

- Purpose and aims: State the overall purpose and specific aims of the research programme.

- State-of-the-art: Summarise briefly the current research frontier within the research programme. State key references.
- Significance and scientific novelty: Describe briefly how the collaborative programme relates to previous research within the area, and its importance in the short and long term. Describe also how the programme 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 programme will be feasible. State also if no preliminary results exist.
- Research programme:
    - Theory and method: Describe the underlying theory and the methods to be applied in order to reach the programme goal.
    - Describe the involvement of patients in the designs of the studies.
    - Time plan and implementation: Describe summarily the time plan for the programme during the grant period, and how the reserach will be implemented.
    - Programme organisation: Clarify the contributions of yourself and the participating researchers to the implementation of the programme. Describe and explain the competences and roles of the participating researchers in the programme, 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 programme to what extent the programme 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 programme, it should be clear how AI is used in a new way to achieve the goals. The proposals should clearly distinguish elements of AI (eg. machine learning and/or deep learning) from that of other advanced analytics.
    - Ethical considerations
    - *Feasibility:* Please describe:
        - how the programme will access clinical data and/or patients
        - the availability of the required infrastructure
        - ethics, regulatory considerations and patient safety
    - *Gender and equality aspects:* Please describe how gender and equality aspects will be taken into account, both regarding the hypothesis/issue/purpose of the programme as well as the researchers.
    - Programme directors and added value of research collaboration: Describe the planned collaboration between KI and KTH; it should be clearly described how

each Programme Director is central to the programme'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. 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 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 programme (from you or another researcher).
- Please provide the following information also, when relevant.
    - Equipment: Describe the basic equipment you and your team have at your disposal for the programme
    - Need for infrastructure: Specify also the need for local infrastructure, if depreciation costs for this are included in the application.
- Attachments: attach the two following documents:
    - Design of clinical study (maximum two pages)
    - Data management plan (maximum one page)

CV of Programme Director 1

- Provide brief details of your qualifications in a CV as follows:

    - First-cycle degree, higher education diploma, year
    - Doctor's registration or equivalent, year
    - Specialist competence, year, field
    - PhD degree, year, university, title of dissertation, supervisor
    - Postdoc- and research appointments, year and posting
    - Associate professor (docent), year, university, subject
    - Current employment, duration of commission, percentage of research in position, any combined posts
    - Connection to Karolinska institutet and KTH
    - Supervisor roles, ongoing and previous
    - Other information relevant the application

    Please leave non-relevant fields empty.

- Other information that is of importance to the application
- Deductible time: Indicate any deductible time that have affected your qualification opportunities, such as parental leave, illness, etc.

- The ten most important and relevant original works for the project

Budget
Fill in the two templates to specify the budgets of KI and KTH respectively.

Additional required documents

- A letter from the head of a clinical unit or equivalent, indicating how the programme will be anchored in a clinical setting and that support to implement the programme will be provided.
- A signed support letter from each Programme director's Head of Department.