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**Health & Medical Technology**

**Horizontal Technology Programme Office**

**LETTER OF INTENT (LOI)**

**Biomedical Engineering Programme (BEP)**

**Run 2 (FY2021)**

**< To fill proposal title here>**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Technical PI:*** | *<Name>* | *<Email>* | *<Contact>* |
| ***Clinical PI:*** | *<Name>* | *<Email>* | *<Contact>* |
| ***LOI Number\*:*** |  |  |  |
| ***Submission Date\* :*** | *<DD-MMM-YY>* |  |  |
| ***Have you submitted a similar project in previous BEPs?*** | | | ***YES/NO***  ***(Please delete where appropriate)*** |

***\* To be completed by Health & Medical Technology Horizontal Technology Programme Office.***

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# Introduction

The **Biomedical Engineering Programme (BEP),** administered by A\*STAR’s Health & Medical Technology Horizontal Technology Programme Office (HMT HTPO), is a competitive, multi-disciplinary Seed Fund aimed at supporting early **clinically-driven** MedTech innovations with promising **commercialization potential**. The BEP’s objective is to seed early MedTech innovations, which can potentially contribute to a vibrant start-up ecosystem, and encourage value capture for the local innovation landscape.

Projects will have to be **driven by a validated clinical need,** matched to a **potential technological solution** against the **current state-of-the-art / standard-of-care** used. This user-centric approach to product development validates the end-users’ desirability, the technological feasibility and ultimately the business viability, which is required for the technological solution to be clinically adopted.

**The BEP aims to support projects toward achieving at least a Proof-of-Concept (POC) by the end of the period**. Deliverables to be achieved include:

1. Concept generation
   1. Identify and validate end-user requirements.
   2. Identify regulatory and market requirements.
   3. Develop design inputs and specifications.
2. Prototyping (may be a physical device, an IT system, algorithm etc)
   1. Obtaining clinical feedback regarding prototype design with end-users.
   2. Identify and manage risks.
   3. Prototype testing to prove product feasibility.
3. Estimated duration: 12 – 18 months
4. Estimated funding amount: up to SGD $500k

Under BEP, the Singapore Biodesign (SB) will be offering a **MedTech Training Workshop** specially catered to shortlisted teams based on the LOIs. The goal of the workshop is to provide a guided hands-on and interactive session for project teams to spend dedicated time to go through the Biodesign methodology, deliberate and de-risk the ‘identify’, ‘invent’ and ‘implement’ components of their project, leading to the write-up of the full proposal.

Applications for this Call for Proposal are **not restricted** to a particular clinical area. Most importantly, proposals must show strong collaboration between the clinical and technical partners to solve a specific clinical need. **Submissions will be reviewed in 2 stages;**

1. **LOI Shortlist**

From the LOI submissions received, up to 12 teams are expected to be shortlisted. LOIs will be reviewed by up to 3 LOI reviewers representing the technical, clinical and business domains.

1. **Final Review (for shortlisted applicants only)**

Teams are expected to present at the Final Review to a panel of reviewers from various backgrounds such as academic, clinical and industry. Final decision will be made after the Final Review.

# LOI Submission Details

Applicants are required to submit thier LOI via the iGrants portal (<https://app.a-star.edu.sg/igrants/>) :

1. On the Dashboard page of the iGrants portal, under the Create tab, click “Proposal”.
2. iGrants will display a list of Grant Calls that are currently open. From the list of Grant Calls, click on the “Apply” link for the “**BEP Run 2 – Call for Proposals**”.
3. A pop-up window should appear with a brief overview. Please only enter the required information into mandatory sections. For all other sections, it will suffice to attach the LOI Application Form (in pdf format).
4. Scroll down to access hyperlinks to download the “**LOI Template**” . Complete the form, and upload as an attachment.
5. Click on the “Submit” button to submit the LOI. Please note that once submitted, the application will go directly to the secretariat. This application will not be routed for endorsement through iGrants.
6. If any mandatory fields have not been filled, the system will reject the proposal and alert the user to errors and/or missing information. Once these errors have been rectified, the user should be able to submit the proposal.
7. Once a proposal has been submitted successfully, the system will return the Submitter to his/her dashboard.
8. For more detailed instructions on how to submit an application, please refer to the user guide “iGrants Grant Application User Guide (External) Ver3.1” by clicking on the “User Guides” link on the iGrants landing page.

The deadline for iGrants submission will be on **30 July 2021, Friday, 11.59pm, Singapore Standard Time.**Please direct iGrants-related queries to [A-STAR\_OGA@hq.a-star.edu.sg](http://A-STAR_OGA@hq.a-star.edu.sg)

# LOI Application Overview

**In Section A;**

Please do not exceed the maximum word count for each section.

The originators of the LOI are encouraged to articulate their responses **under the headers provided for each section in Arial, font size 11** in a manner that may be understood by any educated, but non-medically trained individual.

**In Sections B – D;**

There is no word count limit in these sections. Please fill out these sections accordingly where applicable.

**IMPORTANT:** Every section and field must be completed. Please indicate ‘NA’ where a particular section or field is not applicable. Incomplete applications will be rejected.

|  |  |
| --- | --- |
| **Section** | **Description** |
| A.1. | Project Title |
| A.2. | Team |
| A.3. | Clinical need |
| A.4. | Potential technological solution & Intended Use |
| A.5. | Current State-of-art/Standard of Care |
| A.6. | Addressable Market |
| A.7. | Proposed Project Plan & Indicative Budget |
| B. | Grant Declaration |
| C. | Declaration |
| D. | Attachments |

# Section A - Project Details

## A.1. Project Title

(30 Words)

***xxxxxx***

## A.2. Team

|  |  |  |
| --- | --- | --- |
| **No.** | **Role** | **Full Name, Affiliation, Department and Designation** |
| 1 | Technical Principal Investigator: |  |
| 2 | Clinical Principal Investigator: |  |
| 3 | Co-Investigator (Co-I): |  |
| 4 | Collaborator: |  |

\*Please fill in your Full Name, Affiliation, Department and Designation. You may add/delete rows for Co-Is and Collaborators as necessary.

Please attach, at the end of this document (*in Section D*), the Curriculum Vitae of the Technical PI, Cinical PI and Co- Investigator(s). Limit each CV to 1-page in length.

**Details to include:**

* Name
* Current position and past employment history (Please provide full details, eg, joint appointments, percentage of time spent in Singapore every year, if applicable)
* Academic qualifications (indicate institution’s name and year degree awarded)
* Select publications (within the last 5 years)
* Patents held (related or unrelated to proposed study)
* Recent awards (Scientific awards)

## A.3. Clinical need

(150 Words)

* ***Background of Problem****: What is the problem observed? Why is this a problem that warrants significant attention?*
* ***Define unmet need:*** *What is needed to address the problem and/or treatment gap identified above?*

***xxxxxxx***

## A.4. Potential Tech Solution & Intended use

(150 words)

* ***Solution Overview:*** *Provide an overview of the proposed solution and how it addresses the clinical need*
* ***Technology:*** *Provide a summary of the core technology and how it works. Include necessary references.*
* ***Clinical Workflow:*** *Describe what is the current clinical workflow related to the targeted clinical area/disease and how your technology fits in or alters the current workflow.*
* *You may include figures to aid your description.*

***xxxxxxx***

## A.5. Current State-of-art/Standard of Care

(150 words)

* ***Treatment Options****: What are the current treatment options? What are the shortcomings of the current treatment options?*
* ***Competitive Analysis:*** *How is the proposed solution better than existing/emerging competing technologies? Is there an IP filed or potential for IP generation?*
* *You may include a comparison table to aid your description.*

***xxxxxxx***

## A.6. Addressable Market

(150 words)

* ***Market Size:*** *Who is/are the target users/patients? What is the incidence and/or prevalence? What is the total amount spent per year to address the problem faced by these target users/patients?*
* ***Value Proposition:*** *How does the proposed solution benefit various stakeholders (end-users, patients, physicians, clinics, hospitals)? Consider both clinical and economic perspectives.*

***xxxxxxx***

## A.7. Proposed Project Plan & Indicative Budget

(300 words)

* ***Aims of Project:*** *List briefly the key objectives/deliverables of the proposed project plan. Provide an overview of the methods that will be employed.*
* ***Indicative Budget:*** *Provide an indicative budget categorized into Expenses on Manpower, Equipment and Other Operating Expenses.*

***xxxxxxx***

# Section B - Grant Declaration

Provide the details for all currently held or applied grants by the Lead-PI, Clinical PI and Co-Is. These include those supported by / applied to A\*STAR, NMRC, NRF, Universities, Clusters and other public funding agencies.

**< *Insert Name of Technical PI* >**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Title of Research** | **Funding Agency** | **Amount of Fund** | | **Support Period (Year)** | **Expiry Date of the Grant** |
| **Amt approved / received ($)** | **Balance Available ($)** |
|  |  |  |  |  |  |

**< *Insert Name of Clinical PI* >**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Title of Research** | **Funding Agency** | **Amount of Fund** | | **Support Period (Year)** | **Expiry Date of the Grant** |
| **Amt approved / received ($)** | **Balance Available ($)** |
|  |  |  |  |  |  |

**< *Name of Co-Investigator No. 1* >**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Title of Research** | **Funding Agency** | **Amount of Fund** | | **Support Period (Year)** | **Expiry Date of the Grant** |
| **Amt approved / received ($)** | **Balance Available ($)** |
|  |  |  |  |  |  |

<Insert additional boxes if necessary>

# Section C - Declaration

Please complete the following declaration. Both wet and electronic signatures will be accepted.

**By signing in the table below, we declare that:**

* The facts stated in this application and the accompanying information are true and that this is an original and latest version of the proposal.
* No other versions of this proposal (or parts thereof) with similar objectives, scope, deliverables or outcomes have been or will be submitted to any other funding bodies.
* The requested equipment/resources are not funded by another agency or research proposal.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Appointment** | **Name** | **Designation** | **Signature** | **Date** |
| A\*STAR | | | | |
| **Technical PI Declaration** |  |  |  | <*DD/MMM/YY*> |
| **Hospital/ Specialist Centre/ Medical School** | | | | |
| **Clinical PI Declaration** |  |  |  | <*DD/MMM/YY*> |
| **Co-Is and Collaborators** | | | | |
| **Co-Investigators** |  |  |  | <*DD/MMM/YY*> |
| **Collaborators** |  |  |  | <*DD/MMM/YY*> |

**<Endorse only if required by the internal process of your institution>**

# Section D – Attachments