

**Note: please do not use this PDF as an application, it is only provided as a reference.**

### **Global Surgical Training Challenge Finalist Awards**

Welcome,

You have reached the Intuitive Foundation's grant application portal to create and submit an application for the Global Surgical Training Challenge Finalist Awards.

The purpose of these awards is to support teams to further develop their original surgical training module and create an additional 2 to 3 modules per team during the Finalist Award phase which will run from January 2022 to November 2022. During this period an external evaluation of the original prototype will be conducted and innovators will be expected to iterate on the design of their original prototype to maximise impact. The 3-5 chosen teams will receive a Finalist Award of up to USD \$500,000.

**Completed applications must be submitted by 12pm Pacific Standard Time (San Francisco, USA) 12 November 2021 in order to be considered.**

Before you complete the following application, please ensure you have read and can comply with the Challenge's [eligibility criteria](#) and [Terms and Conditions](#).

### **Preliminary Information**

#### **Institution**

Team Name:

Team Countries:

**Team Lead** (must belong to an organisation in a low-to-middle income country)

First Name, Middle Name, Last Name

## Part One - Assessing your prototype surgical training module

### Criteria 1. Innovation and Impact

#### Innovation and Impact

We are looking for innovative simulation training modules which will enable surgical practitioners and trainees to learn and assess the progress of gaining surgical psychomotor skills without requiring the presence of a teacher. Applicants are required to explain the need for the surgical skill they wish to train and detail the self-assessment framework they have developed. Applicants will outline the procedure (or its key steps) that was turned into a simulation-based training module and how it delivered on the objectives of the self-assessment framework.

All materials relating to the build, use and self-assessment of this prototype surgical training module should be held on the corresponding Appropedia page(s). **Applicants are required to link to the specific sections of their Appropedia pages that address the below judging criteria.** Applicants must ensure their Appropedia pages are easy to navigate and complete, as no additional information will be provided to the Judging Panel to allow assessment of these prototype modules.

#### 1.1 Problem

Your module should cover:

- The clinical training problem your surgical training module addresses, posed in the format: "Allow [target practitioner(s)] to become confident and competent in performing [identified psychomotor skill(s)] as part of [surgical procedure(s)] performed in [target environment]."
- An explanation on why you chose this problem and what the impact of using your surgical training module will be in your region and globally.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

***(Page description - 150 word limit)***

#### 1.2 Simulation

Your module should cover:

- How the identified psychomotor skill(s) will be acquired by the user of your prototype surgical training module. Please address both why you chose the particular technology/ies and how you addressed the shortcoming of that type of simulation in teaching the performance of a physical skill. Please also address how the user's learnings will directly translate into clinical performance

of that skill.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

***(Page description - 150 word limit)***

### 1.3 Procedure

Your module should cover:

- How the physical simulator(s) has been integrated into the complete surgical training module, including how the elements that do not require teaching through physical simulation (for example, anatomical knowledge, clinical decision making, pre- and post-operative management) have been integrated.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

***(Page description - 150 word limit)***

### 1.4 Self-Assessment

Your module should cover:

- A description of the methods you used to create your module's self-assessment framework. Self-assessment of the quality of the skill acquisition must include some mechanism for the user to self-generate targeted feedback which enables the user to: ensure they are practicing the appropriate skills; modify their performance to improve competence; and determine when they have practiced to a sufficient level of mastery to perform the procedure in a patient.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

***(Page description - 150 word limit)***

### 1.5 Innovation

Your module should cover:

- How your module(s) is innovative i.e. better than or more effective than traditional approaches available in [target environment] for your [target practitioner(s)].

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the

information can be found. **Insert URL(s)**

*(Page description - 150 word limit)*

## 1.6 Evaluation

Your module should include:

- A description of how you developed and iterated your original prototype design following user testing throughout the development of your prototype.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

*(Page description - 150 word limit)*

## Criteria 2. Adoption in resource-constrained settings

### Adoption in resource-constrained settings

We are looking for modules which have the potential to reach and support as many practitioners and trainees in LMICs as possible. Judges will be looking to understand how cost-effective and reproducible the surgical modules are in their chosen setting to increase likelihood of uptake post-Challenge. Applicants are required to demonstrate their understanding of their users' needs and how they ensured their modules are reproducible locally.

### 2.1 Users

What can you tell us about your intended users and how have you tailored the design of your surgical training module prototype to ensure their needs are met? Describe how you have considered adoption in low resource settings in the design of your surgical training module.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

*(Page description - 150 word limit)*

### 2.2 Reproducibility

All modules designed need to be fully reproducible in their intended place of use. In your Appropedia page you should include a description of:

- How you ensured reproducibility of your module in its intended place of use.
- The design choices for your module undertaken to ensure replicability.
- The detailed risks associated with the reproducibility of your surgical training module.
- The anticipated costs, materials, tools and expertise required by the end user to build, install, operate and maintain the module within the intended place of use.
- How this module will offer value for money in comparison to existing approaches.
- How your target users will obtain the materials required to build your module and how you will ensure the materials are readily available and/or can be made locally with locally produced or imported materials.

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

*(Page description - 150 word limit)*

### **2.3 Accessibility**

Explain how you have ensured that surgical practitioners from anywhere in the world will be able to engage with the content without barriers or gatekeeping?

**Please provide a link(s) to the appropriate Appropedia page(s) that demonstrates this criteria** with a short description of where on the page the information can be found. **Insert URL(s)**

*(Page description - 150 word limit)*

## **Part Two - Assessing additional modules development proposals.**

### **Criteria 3. Team's Capability**

Teams applying to the Finalist Awards should be able to demonstrate the skills, commitment and capacity needed to deliver 2 to 3 additional surgical training modules per team and to undertake an evaluation on their current prototype. Teams will need to clearly articulate their planned delivery and associated budget for this work. Plans should be ambitious yet achievable within the timeframes given.

#### **3.1 Your Team**

Please tell us about your team, highlighting your educational, clinical and technological leads and any changes to team composition since your original application (if applicable). You must continue to have three leads in each area, with your project lead based in a LMIC. **(500 word limit)**

### **3.2 Evaluation Protocol**

The Finalist delivery phase includes both internal and external evaluation of your current prototype. Please upload an evaluation protocol that your team and the external validators can use to evaluate your current prototype.

NB. The external validation process will be paid for by GSTC and carried out by an external institution of their choosing. You will be informed of the results throughout the process and be given an opportunity to adapt your prototype based on results from the evaluation process before submission to the Grand Prize.

**Please upload your Evaluation Protocol**

### **3.3 Iteration of current prototype**

Please describe any additional development work currently planned for your current prototype presented in this application (we appreciate further development work will likely be undertaken following the results of the evaluation studies). **(500 word limit)**

### **3.4 Delivery Plan & Budget**

Please lay out your overall development plan and budget for the iteration of your original surgical training module and the development of all your additional modules. Please provide detail of all major milestones you are anticipating during the active grant period between February 2022 to the end of October 2022.

**Instructions:**

- Please enter budget information using US dollars.
- Applicants may apply for grant funding up to USD \$500,000 per project (US dollars, total costs).

**Please upload your Delivery Plan & Budget**

### **3.5 Additional module development**

For all additional modules, teams are required to submit a shortened version of the proposal submitted in the Discovery Award application form, covering Criteria 1 & 2 only.

#### **Additional Module 1: Innovation and Impact**

##### **3.5.1 Problem**

State the clinical training problem you are trying to solve, posed in the format: "Allow *[target practitioner(s)]* to become confident and competent in performing *[identified psychomotor skill(s)]* as part of *[surgical procedure(s)]* performed in *[target environment]*".

Explain why you chose this problem and what the impact would be in your region and globally if you succeed in solving this problem. **(250 word limit)**

### **3.5.2 Simulation**

Explain how the *[identified psychomotor skill(s)]* will be acquired by the user using the proposed simulation technology/ies.

Please address both why you chose the particular technology/ies and how you are addressing the shortcomings of that type of simulation in teaching the performance of a physical skill. Please also address how the user's learnings will directly translate into clinical performance of that skill. **(250 word limit)**

### **3.5.3 Procedure**

For the aspects of the *[surgical procedure(s)]* surrounding the skills that you are teaching that do not need to be taught through physical simulation (*for example, things like anatomical knowledge, clinical decision making, pre- and post-operative management*), explain how you would address providing this content to the user and how the physical simulators would be integrated into the complete *[surgical procedure(s)]* module. **(250 word limit)**

### **3.5.4 Self-Assessment**

Self-assessment of the quality of the skill acquisition must include some mechanism for targeted feedback which enables the user to: ensure they are practicing the appropriate skills; modify their performance to improve competence; and determine when they have practiced to a sufficient level of mastery to perform the procedure in a patient. Describe the methods you propose to use for self-assessment in this framework. **(250 word limit)**

### **3.5.5 Clinical Validity**

Describe the methods you will use to test that the simulator(s) and assessment tool(s) you develop will translate into clinically valid skills. **(250 word limit)**

### **3.5.6 Innovation**

Explain how these modules will be innovative. I.e. better than or more effective than traditional approaches available in that *[target environment]* to your *[target practitioner(s)]* **(250 word limit)**

## **Additional Module 1: Adoption in resource-constrained settings**

### 3.5.7 Users

- a) What can you tell us about your potential users? What are the needs? **(100 word limit)**
- b) What do you consider crucial to help you drive adoption in resource-constrained settings? **(100 word limit)**

### 3.5.8 Reproducibility

- a) How will you ensure that your module is reproducible in its intended place of use? What kind of design choices and handover documentation do you envision to ensure replicability? **(250 word limit)**
- b) Considering your proposed technology, please detail risks associated with the reproducibility of your training module. **(100 word limit)**

## Additional Module 2: Innovation and Impact

### 3.5.9 Problem

State the clinical training problem you are trying to solve, posed in the format: "Allow *[target practitioner(s)]* to become confident and competent in performing *[identified psychomotor skill(s)]* as part of *[surgical procedure(s)]* performed in *[target environment]*".

Explain why you chose this problem and what the impact would be in your region and globally if you succeed in solving this problem. **(250 word limit)**

### 3.5.10 Simulation

Explain how the *[identified psychomotor skill(s)]* will be acquired by the user using the proposed simulation technology/ies.

Please address both why you chose the particular technology/ies and how you are addressing the shortcomings of that type of simulation in teaching the performance of a physical skill. Please also address how the user's learnings will directly translate into clinical performance of that skill. **(250 word limit)**

### 3.5.11 Procedure

For the aspects of the *[surgical procedure(s)]* surrounding the skills that you are teaching that do not need to be taught through physical simulation (*for example, things like anatomical knowledge, clinical decision making, pre and post operative management*), explain how you would address providing this content to the user and how the physical simulators would be integrated into the complete *[surgical procedure(s)]* module. **(250 word limit)**

### 3.5.12 Self-Assessment

Self- assessment of the quality of the skill acquisition must include some mechanism for targeted feedback which enables the user to : ensure they are practicing the appropriate skills; modify their performance to improve competence; and determine when they have practiced to a sufficient level of mastery to perform the procedure in a patient. Describe the methods you propose to use for self-assessment in this framework. **(250 word limit)**

### **3.5.13 Clinical Validity**

Describe the methods you will use to test that the simulator(s) and assessment tool(s) you develop will translate into clinically valid skills. **(250 word limit)**

### **3.5.14 Innovation**

Explain how these modules will be innovative. i.e. better than or more effective than traditional approaches available in that *[target environment]* to your *[target practitioner(s)]* **(250 word limit)**

## **Additional Module 2: Adoption in resource-constrained settings**

### **3.5.15 Users**

- c) What can you tell us about your potential users? What are the needs? **(100 word limit)**
- d) What do you consider crucial to help you drive adoption in resource-constrained settings? **(100 word limit)**

### **3.5.16 Reproducibility**

- c) How will you ensure that your module is reproducible in its intended place of use? What kind of design choices and handover documentation do you envision to ensure replicability? **(250 word limit)**
- d) Considering your proposed technology, please detail risks associated with the reproducibility of your training module. **(100 word limit)**
- e) Please provide the anticipated costs, materials, tools and expertise required by the end user to build, install, operate and maintain the module within the intended place of use. **(250 word limit)**
- f) Please tell us how this module will offer value for money in comparison to existing approaches? **(100 word limit)**
- g) Please describe how your target users will obtain the materials required to build your module and how you will ensure the materials are readily available and/or can be made locally with locally produced or imported materials. **(250 word limit)**

## **Additional Module 3 (if applicable): Innovation and Impact**

### **3.5.17 Problem**

State the clinical training problem you are trying to solve, posed in the format: "Allow *[target practitioner(s)]* to become confident and competent in performing *[identified psychomotor skill(s)]* as part of *[surgical procedure(s)]* performed in *[target environment]*".

Explain why you chose this problem and what the impact would be in your region and globally if you succeed in solving this problem. **(250 word limit)**

### **3.5.18 Simulation**

Explain how the *[identified psychomotor skill(s)]* will be acquired by the user using the proposed simulation technology/ies.

Please address both why you chose the particular technology/ies and how you are addressing the shortcomings of that type of simulation in teaching the performance of a physical skill. Please also address how the user's learnings will directly translate into clinical performance of that skill. **(250 word limit)**

### **3.5.19 Procedure**

For the aspects of the *[surgical procedure(s)]* surrounding the skills that you are teaching that do not need to be taught through physical simulation (*for example, things like anatomical knowledge, clinical decision making, pre- and post-operative management*), explain how you would address providing this content to the user and how the physical simulators would be integrated into the complete *[surgical procedure(s)]* module. **(250 word limit)**

### **3.5.20 Self-Assessment**

Self-assessment of the quality of the skill acquisition must include some mechanism for targeted feedback which enables the user to: ensure they are practicing the appropriate skills; modify their performance to improve competence; and determine when they have practiced to a sufficient level of mastery to perform the procedure in a patient. Describe the methods you propose to use for self-assessment in this framework. **(250 word limit)**

### **3.5.21 Clinical Validity**

Describe the methods you will use to test that the simulator(s) and assessment tool(s) you develop will translate into clinically valid skills. **(250 word limit)**

### **3.5.22 Innovation**

Explain how these modules will be innovative. i.e. better than or more effective than traditional approaches available in that *[target environment]* to your *[target practitioner(s)]* **(250 word limit)**

### **Additional Module 3 (if applicable): Adoption in resource-constrained settings**

#### **3.5.23 Users**

- e) What can you tell us about your potential users? What are the needs? **(100 word limit)**
- f) What do you consider crucial to help you drive adoption in resource-constrained settings? **(100 word limit)**

#### **3.5.24 Reproducibility**

- h) How will you ensure that your module is reproducible in its intended place of use? What kind of design choices and handover documentation do you envision to ensure replicability? **(250 word limit)**
- i) Considering your proposed technology, please detail risks associated with the reproducibility of your training module. **(100 word limit)**
- j) Please provide the anticipated costs, materials, tools and expertise required by the end user to build, install, operate and maintain the module within the intended place of use. **(250 word limit)**
- k) Please tell us how this module will offer value for money in comparison to existing approaches? **(100 word limit)**
- l) Please describe how your target users will obtain the materials required to build your module and how you will ensure the materials are readily available and/or can be made locally with locally produced or imported materials. **(250 word limit)**