Duke MEDx-BME Medical Device Design
Request for Applications

I. Objective

Duke MEDx is soliciting innovative medical device ideas from Duke University Medical Center Clinicians (physicians, nurses, or others working in a clinical setting). If selected, a team of four Duke engineering undergraduate students will work to design the project for their senior Capstone design experience. Particularly promising projects will continue into the summer program and receive dedicated attention for 10 weeks from 2 summer fellows.

II. Project Eligibility

Projects may propose an electronic or mechanical medical device, a mobile app, or a web service. Out-of-scope projects would be those that require expensive constitutive components, biochemical assays, or wet lab facilities for development. In past years, these projects have led to functional prototypes for testing in the human simulation lab, the generation of intellectual property that has been licensed, and the development of diagnostic/therapeutic platforms that have entered clinical feasibility testing in Institutional Review Board-approved protocols.

III. Award Information

Four-person teams will work on selected projects for at least 2 semesters beginning in either Fall 2021 or Spring 2022. A subset of projects will be chosen for further design and prototyping during the eligible Summer semester. MEDx and BME will partner to support a design budget of up to $4000 for supplies and prototyping, summer stipends for two design fellows to work on each project for 10 weeks, and 1 week of summer design team advising support by Dr. Mark Palmeri, a Faculty Advisor for the Duke BME Design Fellows Program. In order to maximize the number of projects that receive continued development, **every applicant is highly encouraged to seek matching funds for student stipends.**

IV. Application Submission

Applications will be accepted on a rolling basis and project 'sponsors' will be notified that their ideas have been accepted at least two weeks before the start of either the Fall or Spring semester.

Applications will be submitted through a Qualtrics form. The application asks for the following information:

- **Contact information**
- **Problem Statement & User Needs**: Details of the clinical problem your team is addressing
- **Existing Solutions**: Details and shortcomings/barriers of existing products or technologies that strive to solve the problem that you have described
- **Desired Outcome**: Describe what your ideal outcome would be for this project (e.g. functional prototype; licensing deal etc.)
- **Intellectual Property (IP)**: Describe the status of the current IP and IP rights
- **Clinical Sponsor Engagement Agreement**: Details of your student engagement plan

If you have design drawings, photographs of prototypes, preliminary data etc., the Qualtrics form allows you to upload them as a single combined document in PDF format. For this document, use at least 0.5-inch margins, and 11-point font or larger. Please name the file in the following format: *Clinician Last Name_Supplementary_Project Title.pdf*.

To apply, click here or paste the following link into your browser's address bar: https://tinyurl.com/MEDxRFA

V. Application Review Information

A panel composed of Duke Pratt School of Engineering Faculty and MEDx personnel will evaluate proposals based on the following criteria:

- Novelty / impact of clinical problem
- Feasibility of problem to be solved by a capstone design team, considering student and supervising faculty skill and experience, time and budget
- Availability and excitement of clinical Faculty to engage with the student design team

VI. Reporting

Students will provide formal design reports to the clinical sponsors several times each semester, culminating in a final design report, presentation of the project at the BME Design Symposium, and transfer of design prototypes to clinical sponsors.

VII. Contact Information

Please contact Tarun Saxena at dukemedx@duke.edu if you have any questions related to this program.