

# **ENGINEERING PSYCHIATRY**

research program

## **FACULTY MENTOR**

Matthew Herbert

## **PROJECT TITLE**

Enhancing the Effectiveness of Compassion Training

## **PROJECT DESCRIPTION**

The purpose of this project is to develop a smartphone application as an adjunct to compassion training programs, specifically Compassion Cultivation Training (CCT). CCT is an evidence-based compassion intervention and is currently being rolled out by the Sanford Institute of Compassion and Empathy (CCT) that consists of weekly sessions across 4 to 8 weeks. While participants are expected to adhere to contemplative practice and modify daily interactions, this is often not tracked. Further, as the Institute intends for CCT to be embedded into the medical school; however, busy medical students may not have time for contemplative practice and/or may forget to alter behavior in real-time, real-world settings, which is the ultimate intention of CCT.

To that end, the purpose of this project is to develop a smartphone application that participants can access in the context of CCT to maximize the impact of this training program. The application will send 2 - 3x/weekly AM notifications as a reminder to engage in aspects of compassion training (e.g., "Today, notice a compassionate action performed by someone else, either directed towards yourself or someone else. Notice the impact this has on the interaction, and how it made you feel") followed by a PM notification (e.g., "Did you notice a compassionate action?" "On a scale from 0 - 10, how much of a positive impact did this have on your mood?"). The content and timing of notifications and related measurement will be in line with the content of CCT; however, should also be able to be quickly modified to be included as an adjunct for other compassion training programs that are currently being examined at UCSD (e.g., Cognitively Based Compassion Training). After pilot testing, the intention is to submit an R21 or similar to examine CCT + app compared to CCT alone.

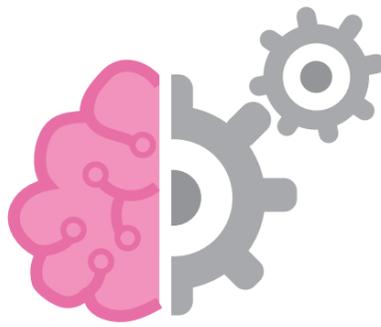
This project will be remote.

## **INTERNS NEEDED**

1 Student

## **PREREQUISITES**

- Experience in basic coding suitable for developing a smartphone application and an interest in bolstering compassion training.



# ENGINEERING PSYCHIATRY

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## FACULTY MENTOR

Matthew Herbert

## PROJECT TITLE

Tailoring Perioperative Mindfulness Training to Improve Surgical Outcomes

## PROJECT DESCRIPTION

We currently are piloting a text-based mindfulness intervention, Mindful Prehabilitation Training (MPT), to decrease preoperative anxiety and improve postoperative pain control among Veterans receiving various operations in the general surgery unit. While there has been considerable interest in MPT thus far, adherence has also been variable. Based on responses to study questionnaires (e.g., surgical anxiety questionnaires) and post-intervention interviews, variability in adherence is likely due to variability of needs. For example, some participants may have anxiety about the operation in general whereas others may become anxious only the day before the operation. Further, because this project enrolls participants receiving various types of surgeries, postoperative pain level also varies.

The purpose of this project is to either build off of the current software (<https://www.lifedatcorp.com/>) or to create a new application that integrates just-in-time algorithms to tailor the intervention to the individual. For example, a participant may be asked to what degree of worry they are currently experiencing about their upcoming operation, and based on responses be encouraged to take no action, be invited to do a mindful breathing exercise, or be presented with an exercise or metaphor to reframe worry cognitions. Similarly, during the postoperative period, notifications can be tailored based on reported pain level. If experiencing intense pain, the participant may be directed to distract by noticing non-painful parts of the body and resting attention there. If experiencing moderate pain, the participant may be asked to engage in a mindful breathing exercise and allow the pain to be as it is. If the participant is not experiencing pain, they may be encouraged to be appreciative how the body is healing or encouraged to adhere to recommended medication regimen. Interested students would work with Dr. Herbert (PI) and Dr. Byron Ferguson, anesthesiologist and co-investigator on MPT.

This project will be remote.

## INTERNS NEEDED

1 Student

## PREREQUISITES

- Interest and experience in smartphone development and general interest in the topic.