



## **SHP Student Interns for Research and Scholarly Activities Project Proposal Form**

### **Instructions:**

**Please fill each box to the right of the required fields, obtain the required signature and return via email to Michele Sisco ([mcoral@shp.rutgers.edu](mailto:mcoral@shp.rutgers.edu)) by **March 24, 2025**.**

If you are sending attachments, please ensure your contact information is added to all your forms.

### **Faculty Contact Information:**

Date submitted: March 24, 2025

Faculty Name: Lorena Carlo, PhD, Shankar Srinivasan, PhD

Department/Program: Health Informatics

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### **Project Detail:**

Project Title: (56 characters max)

Analysis of Safety Events in Mental Health Medical Devices.

Hypothesis:

- Issues regarding computing technology are closely linked to a significant number of mental health medical device failures reported to the FDA. The current classification codes in the MAUDE database do not adequately capture these underlying technological problems, potentially underestimating their impact on patient safety and device effectiveness.

Description:  
(Include design, methodology, data collection, techniques, data analysis to be employed, evaluation and interpretation methodology for research component)

- Data Collection: Data will be collected from the FDA's MAUDE (Manufacturer and User Facility Device Experience) database, focusing specifically on mental health medical device failures.
- Design: Natural Language Processing (NLP) models will be designed and developed to automatically identify and classify computing technology-related failures within the narrative descriptions of device failures.
- Evaluation: The performance of the NLP models will be evaluated using standard metrics such as accuracy, precision, recall, and F1 score.

Specific Student Responsibilities:

The student will conduct the listed methodology steps under the supervision of professors.

Start / end date of project:

May 15 to August 15, 2025

WHAT OTHER  
EDUCATIONAL  
OPPORTUNITIES ARE  
AVAILABLE TO STUDENTS?

(e.g., journal club, seminars,  
clinic, rounds)

WHERE DO YOU PLAN TO  
PRESENT OR PUBLISH THE  
FINDINGS WITH THE  
STUDENT?

(e.g., national or state meetings,  
newsletter or journal, SHP poster  
day)

The selected student will have the opportunity to learn and apply novel NLP methods while contributing to the publication of a research article.

We plan to publish this article in a peer-review journal such as Cureus.

**CHECK ALL APPROPRIATE BOXES BELOW AND PROVIDE REQUESTED INFORMATION.**

This project is: ☐ clinical ☐ laboratory ☐ behavioral ☐ survey ☐ educational

X Other: please specify Exploratory

☐ This project involves the use of human subjects (including chart review, retrospective studies and questionnaires).

Pending ☐ Approved ☐ IRB Protocol Number \_\_\_\_\_

**IRB approval must be obtained by June 2025**



Signature of Department Chair

03/24/2025

Date