# SUMMER RESEARCH ASSISTANTSHIP IN EMERGENCY MEDICINE (SRA-EM)

## LIST OF PROJECTS — FOR SUMMER 2017

The following research projects have been developed by Brown Emergency Medicine faculty members. All work will be conducted on the Rhode Island Hospital / Hasbro Children Hospital campus in Providence, RI; either in the adult or pediatric emergency departments, centers, or labs affiliated with the Brown Department of Emergency Medicine. Specific information regarding each project is detailed on the following pages.

Before selecting a project, please review the “SRA-EM Program Overview and Instructions” (located on the SRA-EM webpage). If you are ready to commit to this program and are interested in one of the projects listed below, please contact the faculty mentor as soon as possible. The faculty mentor must agree to sponsor you before you complete the SRA-EM application (due February 1, 2017).

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Faculty Mentor

**Dina Burstein, MD, MPH**  
Assistant Professor of Emergency Medicine (Research)  
dina.burstein@lifespan.org

**Project Title**

**Evaluation of a Pharmacy-based Naloxone Distribution Program**

**Project Description**

This project is an ideal summer research opportunity for a student interested in learning about, and helping to address, the opioid overdose crisis. The student will assist in collecting and analyzing data from participants on their experience in obtaining naloxone from community based dispensing pharmacies. Additionally, the student may have the opportunity to play a role in preparing a manuscript for submission for publication.

**Requirements/Restrictions**

Applicants should be interested in this topic and be competent in using excel and willing to learn to use a statistical data analysis program. Applicants should also be comfortable recruiting and interviewing study participants, and also speaking with pharmacists about naloxone distribution.

**Mentoring Plan**

Dr. Burstein will oversee all aspects of the student’s activities and meet with the student a minimum of two times per week.

**Research Location**

Department of Emergency Administrative Offices  
55 Claverick Street, 2nd Floor  
Providence, RI 02903
Faculty Mentor

Susan Duffy, MD, MPH
Associate Professor of Emergency Medicine and Pediatrics
Medical Director of the Hasbro Children's Hospital Emergency Department
sduffy@lifespan.org

Project Title

Develop and Trial an Interactive Health Education Website for Pediatric Emergency Department Patients

Project Description

The goal of this project is to assess the access of a web-based platform for patient education. The student will explore and develop the educational needs of pediatric emergency department patients and how to access resources for a web-based platform. The student will aid in developing innovative web-based materials for patient education. The student will also shadow a Pediatric Emergency Medicine physician once per week during the summer.

Requirements/Restrictions

Applicants should have an interest in medicine or education, especially pediatric and adolescent patient education and advocacy. Applicants should enjoy working with children and families in a pediatric emergency department setting. Applicants should have experience with web design and development or be willing to explore. Applicants must be willing to work evening hours as needed.

Mentoring Plan

Dr. Duffy will meet with the student 2 times per week to review progress. Dr. Duffy will introduce the student to various health education and community advocates who will help educate them about the needs of patients and resources available to them. Dr. Duffy will arrange mentoring in the ED when they are trailing the educational resources with patients.

Research Location

Hasbro Children's Hospital Emergency Department
593 Eddy Street
Providence, RI, 02903

Department of Emergency Administrative Offices
55 Claverick Street, 2nd Floor
Providence, RI 02903
Faculty Mentor

**Gregory Jay, MD, PhD**  
Professor of Emergency Medicine and Engineering  
Vice Chair for Emergency Medicine Research  
gjay@lifespan.org

**Project Title**

**The Anti-Inflammatory Properties of PRG4 in the Context of Sepsis**

**Project Description**

This project addresses the unknowns that exist surrounding PRG4 and its role as an anti-inflammatory agent. There is much potential for novel therapies using PRG4 as an anti-inflammatory in sepsis and other diseases. This study will take a novel approach of exposing cells that have already been exposed to pro-septic conditions to PRG4. The student will be responsible for conducting experiments, assisting in the interpretation of results, and understanding the clinical ramifications of the research questions.

**Requirements/Restrictions**

Applicants should have prior lab-based research experience, or at least completion of introductory biology and chemistry.

**Mentoring Plan**

Dr. Jay will engage with the student in the lab at least once per week.

**Research Location**

Dr. Jay’s Musculoskeletal Trauma Lab  
One Hoppin Street, Coro West Suite 4.303  
Providence, RI 02903
Faculty Mentor

Leo Kobayashi, MD
Associate Professor of Emergency Medicine
Co-Director, of the Lifespan Medical Simulation Center
lkobayashi@lifespan.org

Lisa Merck, MD, MPH (Co-Faculty Mentor)
Assistant Professor of Emergency Medicine and Diagnostic Imaging
Director of the Division of Emergency Neurosciences
lisa_merck@brown.edu

Project Title

Exploration of Augmented Reality in Emergency and Surgical Care, Clinical Education, and Research Settings for Visual Communication of Medical Information between Providers, Patients and Caregivers

Project Description

This project involves the application of off-the-shelf augmented reality holographic headset systems (HoloLens devices) to explore their potential in facilitating and improving the communication of diagnostic findings, therapeutic intervention options, and other complex data between providers and patients/families, clinical experts, researchers, and learners. The student will assist with the clinical use-case exploration of augmented reality technologies in acute care settings.

Requirements/Restrictions

Applicants should have experience with software development (Unity). Applicants should have experience in clinical environments and an interest in biomedical imaging and/or bioengineering.

Mentoring Plan

The student will meet with the faculty co-sponsors once per week. The student will have the opportunity to attend the HoloLens development team meetings once or twice per week.

Research Location

Lifespan Medical Simulation Center
One Hoppin St, Coro West Suite 106
Providence, RI 02903

Rhode Island Hospital Emergency Department
593 Eddy Street
Providence, RI 02903
Faculty Mentor

**Tracy Madsen, MD, ScM**  
Assistant Professor of Emergency Medicine  
Tracy_Madsen@brown.edu

Project Title

**Sex and Gender Differences in Thrombectomy Among Acute Ischemic Stroke Patients**

Project Description

The student will be responsible for helping with multiple phases of an observational, retrospective cohort study. This will include literature review, study design, data collection, data cleaning, and database maintenance. Depending on the student's qualifications, they may be able to help with data analysis and interpretation as well.

Requirements/Restrictions

It is preferred that applicants have some clinical research experience, some basic knowledge of MS Excel and/or Redcap, and some experience with reviewing charts.

Mentoring Plan

Dr. Madsen will meet with student 2-3 times per week to discuss progress. During these meetings, Dr. Madsen will also mentor the student in literature review, methods in clinical research, observational cohort studies, treatment disparities in medicine, sex and gender based medicine, and treatment of stroke patients.

Research Location

Rhode Island Hospital Emergency Department  
593 Eddy Street  
Providence, RI 02903

Department of Emergency Administrative Offices  
55 Claverick Street, 2nd Floor  
Providence, RI 02903
Faculty Mentor

**Megan Ranney**  
Assistant Professor of Emergency Medicine  
Director of the Division Emergency Digital Health Innovation  
megan_ranney@brown.edu

Project Title

**iPACT: Text-Message-Based Cyberbullying Prevention for High-Risk Youth**

Project Description

The student will join my research team working on a larger study developing and testing a text-messaging program to prevent cyberbullying and related negative consequences among high-risk adolescents. The student will have the opportunity to screen patients in the clinic, interview patients, and contribute to intervention development.

Requirements/Restrictions

Applicants should be interested and/or have prior experience with mental health, high-risk adolescents, or digital health. Applicants must be highly organized, self-motivated, ethical, able to think on feet, able to multi-task, and have outstanding attention to detail. Applicants must have strong interpersonal skills in order to interact well with patients in a clinical setting and quickly develop rapport. Applicants should be comfortable discussing sensitive topics, including histories of violence and mental health. Prior experience with qualitative methodology is strongly preferred. Coursework in public health and psychology is preferred. Familiarity with citation software (e.g., EndNote), statistical software (e.g., Stata), and NVivo is also preferred. Applicants must be willing to work weekend/evening hours as needed.

Mentoring Plan

The student will be part of a larger research team and as such will benefit from extensive mentorship from graduate-level students and research assistants. Dr. Ranney will meet with the student in person on at least a weekly basis (more frequently at the start of the summer) to discuss questions and progress with the project. Dr. Ranney will provide the student with tailored readings to enhance his or her own academic development. Dr. Ranney will review weekly reflection papers and offer the student the opportunity to complete an independent sub-project as well.

Research Location

Rhode Island Hospital & Hasbro Children’s Hospital Emergency Departments  
593 Eddy Street  
Providence, RI 02903

Department of Emergency Administrative Offices  
55 Claverick Street, 2nd Floor  
Providence, RI 02903
Faculty Mentor

**Neha Raukar, MD, MS**
Assistant Professor of Emergency Medicine  
Director of the Division of Sports Medicine  
nraukar@lifespan.org

Project Title

**Influence of an Educational Module on Patient Satisfaction with Medical Care for Low Back Pain**

Project Description

The student will take an already developed module regarding the management of low back pain in the emergency department, create a survey to assess satisfaction of the patients regarding the physician/health care provider knowledge and explanation. The survey will be used for 4 weeks with no intervention and then after the intervention is implemented, the survey will be used again for four weeks.

Requirements/Restrictions

Applicants should be interested in medical education and patient care. Applicants must be organized, timely, and self-motivated. Applicants must have excellent attention to detail, good writing skills, and be able to explain complex topics in simple terms.

Mentoring Plan

The research project will be broken down into a manageable schedule and the student will be provided with a weekly, structured, research program. The student will be trained on the strategies to improve accuracy and minimize inconsistency in prospective study recruitment, as well as how to identify the requisite information. Dr. Raukar will set up explicit protocols to help identify which patients will be recruited and subject to analysis. Each variable will be explicitly defined and all questions will be answered to minimize misunderstanding the data variables. The first week of the project will be spent understanding the data collection form and the appropriate responses to each variable. Dr. Raukar will meet with the student weekly to review the data sheets and resolve disputes. Additionally, the student will have the opportunity to collaborate with other team members and members of the education division through weekly team meetings.

Research Location

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593 Eddy Street  
Providence, RI 02903

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55 Claverick Street, 2nd Floor  
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