SUMMER RESEARCH ASSISTANTSHIP IN BIOMEDICAL SCIENCES (SRA)

FACULTY SPONSOR LIST — FOR SUMMER 2015

Listed on the following pages are those members of the Brown University faculty who have expressed interest in sponsoring a PLME student to work under their supervision on a biomedical science research project during the summer of 2015. Please note that you may choose to identify OTHER Brown faculty members to serve as your sponsor (i.e. you are not limited to this list).

We urge you to begin your search for a faculty sponsor in the fall semester prior to the winter break period. Once you decide on a faculty sponsor and a research topic, please carefully follow the guidelines (http://www.brown.edu/academics/medical/plme/current-students/enrichment-activities/research-opportunities/summer-research-assistantship-biomedic) in proposing your project.

Your proposal should involve a relatively self-contained study that allows for independent work, i.e., the proposal should not represent a research technician’s position.

The application must be submitted ELECTRONICALLY to Hilary_Sweigart@Brown.edu by FEBRUARY 2, 2015.
1. James Padbury, MD  
Dept of Pediatrics  
Women & Infants Hospital  
401 274-1122, x7405 or x7407  
JPadbury@wihri.org

Project  
A Novel Bioinformatics and Genomics Approach to Perinatal Diseases

Requirements/Restrictions

Mentoring Plan
2. Barbara Stonestreet, MD  
Dept of Pediatrics  
Women & Infants Hospital  
401-274-1122 x47429  
bstonestreet@wihri.org

Project  
*Brain ischemia and inflammation in the fetal and neonatal brain*

Requirements/Restrictions  
Some biology courses; some neuroscience courses

Mentoring Plan
3. Qian Chen, PhD
Dept of Orthopedics
1 Hoppin Street, Suite 402A
401-444-5676
Qian_Chen@Brown.edu

Project
Cellular delivery of RNA using nanomaterial for diagnosis and therapy of joint diseases

Requirements/Restrictions
Prior research experience in cell and molecular biology or bioengineering is desired

Mentoring Plan
One-on-one and group mentoring, weekly lab meeting and journal club, oral and poster presentation in internal and external meetings
4. Vivian Sung, MD, MPH  
Division of Urogynecology and Reconstructive Pelvic Surgery  
Department of Obstetrics and Gynecology  
695 Eddy Street, Lower Level  
Phone: 401-274-1122 x 48740  
vsung@wihri.org

Project  
*Help seeking and outcomes research in female pelvic floor disorders*

Requirements/Restrictions  
Experience in literature searches and background research helpful. Depending on study design, good patient rapport will be needed since patient interaction is likely.

Mentoring Plan  
1. Protocol development: Under mentorship student will develop a study from concept to protocol. This can be a primary study, or an ancillary study from a current protocol with ongoing recruitment. Other options can include use of existing databases or chart review in the Division. Protocol development will be divided into sections spaced over the time period prior to the summer of 2015. Thus student will have first-hand experience in protocol development  
2. IRB submission: Student will learn how to navigate Women and Infants’ IRB electronic submission system. Under guidance student will submit her/his IRB for review. Once IRB is reviewed, the student will learn how to respond to any IRB queries or comments. IRB submission is expected to occur in Spring (May) of 2015 to allow time to respond to IRB concerns to allow project implementation in June 2015 if study is anticipated to be completed within the 10 week-period. Depending on the design of the study, this research may be extended as an independent study project. This will depend on the nature and design of the specific study.  
3. Protocol pre-implementation phase: Student will work with database developer and statistician to develop database and forms as needed for the study.  
4. Protocol implementation phase: Student will implement protocol under guidance. This will vary depending on the design and requirements of the study but could range from subject recruitment, data entry, study organization.  
5. Data analysis: Student will work with mentor and statistician.  
6. Dissemination: Student may submit work as abstract to national meeting. Expectation will be for student to write up final manuscript under mentorship as author.
5. Ali Amin, MD
Pathologist
The Miriam Hospital
Tel: 793-7813
Fax: 274-5154
Pager: 350-9781
aamin@lifespan.org

Project
The Differences Between What is Said and What is Heard: Phrases of Uncertainty in Surgical Pathology Reports. In this project, we intend to search for the reason(s) for miscommunication in the context of different medical specialties. The target audience is the clinicians in various specialty groups in Brown’s medical school; they will be asked to interpret several phrases commonly used in pathology reports, and interpret them. The first step is to customize and distribute specialty specific electronic questionnaires. The responses will be collected and analyzed, and then the results will be presented to the same specialty groups to educate the potential sources of miscommunication.

Requirements/Restrictions

Mentoring Plan
There will be (at least once a week) meetings between the mentor and the student(s). The student(s) will be educated about standard interpretation of the terminology by the mentor. They are expected to follow the questionnaires and collect the data in a timely basis. Proper interpersonal relationship with medical colleagues is a requirement. The students will be selected by interview. There is a potential for longer term commitment.
6. Jun Feng, MD, PhD
Assistant Professor of Surgery
Manager of Cardiothoracic Surg Lab
CVRC, Rhode Island Hospital
Coro West 5th Floor, Room 5.235
1 Hoppin Street,
Tel: 401-793-8065
Fax: 401-793-8224
jfeng@lifespan.org

Project
Role of Kca channels in regulation of vascular function

Requirements/Restrictions
Biology or bio-medical science

Mentoring Plan
The student will first learn to search scientific articles, read and understand the scientific findings and. I will supervise the summer student to design and conduct the experimental project (short project) during the 10 weeks summer training. After 10 weeks summer training, the student will be also able to skillfully perform one or two experimental methods of bio-medical research (bench-work), present their understandings and findings at a seminar.
7. Qing Lu, DVM, PhD
Associate Professor of Medicine (research)
Vascular Research lab, Providence VA Medical Center
830 Chalkstone Avenue
401-273-7100, Ext 3865
Qing_Lu@brown.edu

Project
i) The role of protein acetylation in cigarette smoke-induced lung endothelial injury and lung disease
or,
ii) Mitochondrial dysfunction in cigarette smoke and adenosine-induced lung endothelial injury and lung disease

Requirements/Restrictions
Previous research experience is a surplus but not required. The student should be self-motivated and is interested in biomed research and is ready to learn new things

Mentoring Plan
I have mentored many SRA and UTRA students in the past ten years and I am happy to participate in this program again in 2015.
8. Willoughby Britton, PhD
Department of Psychiatry
Director, Clinical and Affective Neuroscience Laboratory
BMC, Room 232, 171 Meeting St
Lab phone: 401-863-9738
Willoughby_britton@brown.edu

Project
*Neurobiological mechanisms of cognitive remediation training*

Requirements/Restrictions

**Mentoring Plan**
The student will assist in an ongoing NIH-funded clinical trial that investigates the neurobiological mechanisms of cognitive remediation training for unipolar depression. Training includes psychophysiological recordings: electroencephalography (EEG); electromyography (EMG) and electrocardiography (EKG) and clinical interviews and attendance at treatment sessions.

Students also have access to a range of completed datasets from cognitive remediation training, including EEG, EKG, endocrine function (cortisol, alpha amylase), neuropsychological performance, and information processing paradigms. Students may choose to analyze the data of their choice for a poster, conference presentation or peer-reviewed journal article. Students will have support in all stages, including theory generation, analysis, writing, journal choice and submission.

The student and I will meet once a week from 6-7 pm in Biomed 217
9. Beth Brainerd, PhD  
Department of Ecology & Evolutionary Biology  
brainerd@brown.edu

Project I  
*X-ray Reconstruction of Moving Morphology (XROMM) analysis of skeletal motion in living animals*-- potential for work on fish, amphibians, lizards, alligators, turtles, birds or mammals, depending on the SRA student's interests and the state of ongoing projects. See xromm.org for more information.

Requirements/Restrictions Project I  
Some coursework or other experience with anatomy and/or physiology, including human anatomy/physiology

- OR –

Project II  
*Development of bioinformatic tools for XROMM, in collaboration with the Center for Computation and Visualization (CCV)*

Requirements/Restrictions Project II  
Some coursework or other experience with programming and software development and an interest in applying such tools to biological problems

Mentoring Plan  
Weekly meetings with me and the grad student/postdoc/CCV staff programmer for any specific project  
Daily mentoring from the grad student/postdoc leader/staff programmer  
Weekly meeting with a larger research group or/and the XROMM development group
Project

*Evaluation of an electronic sexual health risk intervention for adolescents*

Requirements/Restrictions

Interest in adolescent reproductive health, comfort talking to adolescents and parents, eagerness to work on clinical research study, fluency in Spanish a plus but not required.

Mentoring Plan

The student and I will meet weekly to discuss study design and recruitment, implementation of research in clinical setting, and initial process of data analysis. We will also discuss the background literature of adolescent sexual health risks and behavior change interventions (and other adolescent health risk behaviors, determined by interest of the student). We will check in biweekly (or more if indicated) to assess progress, questions, or necessary adjustments to the project.
11. Craig T. Lefort, PhD
Department of Surgery
Division of Surgical Research
Rhode Island Hospital
593 Eddy St., Middle House 203
401-444-2353
craig_lefort@brown.edu

Project
Engineered Neutrophils as a Potential Cancer Therapeutic

Requirements/Restrictions
Previous laboratory research experience is a plus, but not required. Classwork in cell/molecular biology and/or immunology is a plus.

Mentoring Plan
I take a very active role in mentoring students and trainees in my lab at all levels. In formulating a project for the SRA, I will meet with interested students to discuss the background and goals of the project. We will work together to identify resources that will aid the student in designing a study within the scope of the SRA, and I will mentor the student as they craft the proposal. During the SRA, I will meet with students one-on-one each week to discuss completed experiments, to design future experiments, and to interpret results in the context of the bigger picture. This also provides an opportunity for career mentoring. In addition, we have a weekly meeting as a whole lab where students will have to opportunity to formally present their work once every 4-6 weeks. I'm still active at the bench so technical mentoring will come from myself as well as from graduate students in the lab.