### Abstract
The UCLA CTSI Research Associates Program (CTSI-RAP) aims to provide UCLA undergraduate students with the opportunity to gain exposure to hospital-based medicine as well as clinical research. The program is designed to strengthen interest in biomedical research initiatives by allowing first-hand interaction between UCLA faculty physicians and investigators with undergraduate students. Research associates play a key role in the implementation of research protocols when they are given the opportunity to assist primary investigators with various aspects of their project including, but not limited to, consenting patients, collecting secured data, and co-authoring abstracts, posters, and papers. In addition, students are given the opportunity to make rounds with the medical team, observe common procedures, and experience didactic teaching sessions during the course of their involvement in the program. Outside of direct research experience, the CTSI-RAP students are exposed to situations meant to educate and prepare them for a career in healthcare. As a result, research associates become comfortable with the inner-workings of a hospital and gain skills in professionalism, patient communication, and research methodology. The unique blend of first-hand clinical experience and scientific research will give CTSI-RAP alumni an all-encompassing perspective on tackling health care challenges and conducting clinical research.

### CTSI-RAP Advisor:
Dr. Laurie Ann Shaker-Irwin, Ph.D., M.S.

### Physician Advisor:
Noah Carvajal Federman, M.D.

### CTSI-RAP Students 2016-2017
Buckanavage, Jack ▪ Cao, Quang ▪ Dey, Ipsita ▪ Dickson, Crystal ▪ Dionson, Andrew ▪ Ford, Victoria ▪ Guan, Michelle ▪ Habib, Omar ▪ Ho, David ▪ Jiang, Kelsey ▪ Jones, Adrian ▪ Lam, Harrison ▪ Liu, Franklin ▪ Jar-Yee, Liu ▪ Lu, Mimi ▪ McLaughlin, Ryan ▪ Ng, Cassandra ▪ Nguyen, Kevin ▪ Ong, Stephanie ▪ Onggo, Stevynndis ▪ Ringgenberg, Sienna ▪ Sara, Afrida ▪ So, Josh ▪ Tran, Elizabeth ▪ Wong, Shirley ▪ Yao, Douglas ▪ Yusuf, Hamzah

### Additional Ongoing Projects
- **BrainSPORT**, Copper Touch Rounds, CTRC Rounds, Depression Study, Methamphetamine Study, Brain-Gut Interactions in Obesity Study, and Systemic Lupus Erythematosus/Atherosclerosis Study

## Abstract

### Cord Umbilical Blood (CUB) Study
**PI: Dr. Kara Calkins**

**Background:**
The CUB research study looks for biomarkers in cord blood that may be indicators for hepatic issues such as Nonalcoholic Fatty Liver Disease (NAFLD). 33% of children in the U.S. are classified as obese, and 38% of those children develop NAFLD, the leading cause for liver transplants in the US. Classifying babies at different gestational ages may help evaluate risks of developing NAFLD. By analyzing the micro-RNA in the cord blood and studying the metabolomics of the individual, this study aims to see if these items are linked to higher susceptibility to liver disease.

**CTSI - RAP Involvement:**
CTSI-RAP students contribute by screening pregnant mothers for a LGA (Large Gestational Age), SGA (Small Gestational Age), IUGR (Intrauterine Growth Restriction), Obese, Overweight and/or Gestational Diabetes label. When the patient qualifies for the study, the RAP students proceed to the Labor and Delivery Unit of Ronald Reagan Hospital to consent the mothers before the baby is born. RAP students also participate in cord blood collection, immediate blood processing, and maintaining patient databases.

### Polycystic Ovary Syndrome (PCOS) Study
**PI: Dr. Daniel Dumesic**

**Background:**
Polycystic Ovary Syndrome (PCOS) is an endocrine disorder that leads to the development of fluid-filled ovarian cysts, resulting in abnormally high quantities of male sex hormones. This imbalance leads to irregular menstrual cycles, pelvic pain, infertility, and insulin resistance, with associated long-term complications including Type II diabetes, heart disease, and endometrial cancer. The purpose of this study is to utilize diagnostic information to further characterize the effects of PCOS and compare them to the results of unaffected women.

**CTSI - RAP Involvement:**
CTSI-RAP students function as clinical coordinator assistants within the research study. Students conduct patient screenings to determine study eligibility for prospective participants, audit and maintain patient files, optimize and conduct study participant recruitment strategies, and observe and scribe for PCOS medical procedures.

### Inherited Cardiovascular Disease Registry (ICDR)
**PI: Dr. Jessica Wang**

**Background:**
The ICDR aims to understand different factors influencing heart-related disease progression within affected families. Segregation analysis and the search for biomarkers within blood and tissue samples provide a detailed picture of participants' lifestyles before and during participation in the ICDR. Resulting data will be statistically analyzed to better understand how genetic and environmental factors influence disease manifestation. Collected samples may also be used to advance the understanding of disease mechanisms within families or disease conditions to uncover treatment options in the future.

**CTSI - RAP Involvement:**
RAP students screen medical records and recruit patients suitable for participation in the study. Thereafter, they gather consent for participation from the UCLA Adult Congenital Cardiology Clinic as well as the Cardiac Care Unit (CCU) at Ronald Reagan Medical Center. Students also assist patients to the pathology lab for blood collection and transport the samples for immediate processing. Furthermore, they work alongside Dr. Wang and a team of research specialists and genetics counselors to design and construct a comprehensive virtual database for the ICDR.

### Shock Study
**PI: Dr. Igor Barjaktarevic**

**Background:**
Shock is a common life-threatening condition that occurs in the ICU and early detection of shock is essential for decreasing mortality. The inadequate blood perfusion to vital organs associated with shock can lead to organ dysfunction and eventually cardiac arrest if not properly managed, which is usually with intravenous fluid (IV) administration or vasopressor medication. The purpose of this study is to determine whether systematic inclusion of a bedside ultrasound protocol to evaluate fluid-responsiveness and identify the etiology of shock earlier in the hospital course significantly impacts clinical outcomes for patients staying in the Intensive Care Unit (ICU).

**CTSI - RAP Involvement:**
On the medical and transplant ICU floors of Ronald Reagan Medical Center, CTSI-RAP students are trained to identify and screen for prospective patients who are eligible to participate in the study. Students communicate with eligible patients to obtain their consent for participating in the study and answer any potential questions the patient might have. After enrolling a patient in the study, students notify the principal investigator of the study.

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