Summer Internship Projects for 2016

**Drs. Michael Chiang, Michelle Hribar and Thomas Yackel:** Modeling & optimization of ambulatory clinic workflow at an academic medical center: Physicians are pressured to see more patients in less time, which results in complex office workflow involving use of multiple staff members (such as nurses and technicians) and examination rooms. The goal of this project is to develop and use computer-based simulation models to optimize these clinical workflows. The intern could be involved in projects regarding analysis of electronic health record (EHR) data, implementation & analysis of data from indoor positioning systems, and computer simulations. Useful skills: computer programming (particularly for mobile devices), statistical analysis.

**Stephen Wu, PhD, and Bill Hersh, MD.** We’re exploring how best to search EHR data (especially text documents) to find groups of patients that fit a criteria. Work with massive amounts of real EHR data, processing the text with open-source clinical Natural Language Processing (NLP) packages. Interface with Elasticsearch, a modern and scalable search system. Explore first-hand the practical tradeoffs between structured and unstructured data. Skills: Some programming/software engineering coursework or experience.

**Mark Helfand, MD and Erika Cottrell, PhD.** Building an Accessible Database of Patient Experience for the U.S. The faculty are co-founders of www.healthexperiencesusa.org, the new, US branch of DIPEX International. Currently, the model for our work is http://healthtalk.org/, developed by Oxford University. Forty percent of the visits to http://healthtalk.org/ are from the U.S., demonstrating the need for such a site here. We are looking for someone who will work with us to adapt the back end Drupal framework of http://healthtalk.org and redesign its user interface when we begin hosting original content from our first US qualitative studies—one concerning young adults with depression, and the other concerning veterans with traumatic brain injury who are trying to reintegrate into society. You should have programming/software engineering coursework or experience.

**David Dorr, MD** - TOPMED – The Transforming Outcomes for Patient-centered Medical home Evaluation and reDesign trial is in its evaluation stage. The trial is studying how primary health care reform can be enhanced with more focused use of incentives, HIT, and practice facilitation. Final data cleaning, analysis, and synthesis will be completed. Specific subprojects for interns under this project are the effect of achievement of High Value Elements on cost, patient satisfaction, and quality; use of information to improve outcomes for patients; and clinic HIT use and team performance on sustainability. Some familiarity with interpreting data is helpful.

**Vishnu Mohan MD** - Assist teams of clinicians to provide better care for patients! There used to be a time when healthcare delivery was simple – a patient received comprehensive longitudinal care from one physician throughout their hospital stay. Today, clinicians collaborate with each other and form interdisciplinary teams that provide care for their patients. And apart from the patient, the one other thing that all the members of an interdisciplinary team have in common is that they all use the electronic health record (EHR). We have received funding to study how inter-professional teams of clinicians (physicians, nurses, pharmacists, etc.) interact with the EHR, identify important and relevant clinical information, and then communicate with each other in way that optimizes patient care. The intern for this project will help us in building clinical cases for simulation, and may participate in data
The intern should have an interest in clinical health care, EHR simulations and a desire to make health care safer for patients.