

Summer 2012 Undergraduate Internship Project Descriptions

Below you will find the projects available for Summer 2012. In the online application, you will be asked to rank the top four projects you are most interested in and have the required skill set.

David Dorr, MD. Integrated Care Coordination Information System. Work with the team to interpret results and write papers and abstracts about a cluster randomized controlled trial of different IT goals for patient with complex needs. Skills: Either writing or analytic skills.

David Dorr, MD. TOPMED. Work with the team to design and implement a cluster randomized controlled trial to test variations of the Medical Home model. Components could include designing quick cycle improvements, improving information displays, or programming dashboards. Skills: None specific, although CS or design experience may help with parts.

Karen Eden, PhD. **Seeking interested future graduate student in informatics. Refine and evaluate qualitative feedback from PhD and Post-doc program directors in informatics. Set up follow-up interviews with the program directors and potentially current graduate students. Provide support for manuscript development and develop good familiarity with informatics education websites. Skills: qualitative analysis, social science, good communicative and writing skills.**

Jayashree Kalpathy-Cramer, PhD, and Michael F. Chiang, MD. Computer-based image analysis for diagnosis of ophthalmic disease. Clinical ophthalmology diagnosis is often subjective, and quantitative image analysis can improve the accuracy and reproducibility of clinical diagnosis. The investigators have developed computer-based algorithms for diagnosis of ophthalmic disease. This project would involve integrating these algorithms into an image reading center, and evaluating the diagnostic performance compared to that of human experts. Skills: knowledge of computer programming, database architecture, and networks.

Judy Logan, MD. "Meaningful use" certification is important for electronic health records (EHRs). Some EHRs are not intended for general use, however, but for specialty services. Modular certification of these EHRs is possible, but the rules are confusing. I would like to have a student evaluate the possibility of modular certification for the endoscopic reporting software CORI (www.cori.org). The student would need some technical background and would be working with CORI developers and staff to understand the regulations and create a plan for certification.

Judy Logan, MD. The CORI v4 Endoscopic Reporting Software is a specialty EHR for documenting gastroenterology endoscopy procedures. Developed here at OHSU as part of a research project, this software needs a tool that allows its users to customize reports. Work with the CORI development team to develop an application for this purpose. C# programming required. An excellent opportunity to learn about the functional requirements of healthcare applications.

Shannon McWeeney, PhD High-Throughput Genomic Characterization. Based on skill set, this student would assist in implementation and/or testing of extensions to our workflows for use in the analysis of high throughput sequencing data. A key aspect of this project is the detection, annotation and integration of patient-specific genomic differences. All work will be performed under supervision with emphasis to be placed on best practices.

Kemal Sonmez, PhD. Development of systems biology modeling and visualization interfaces on the Cytoscape platform. The investigator is involved several projects that involve building and evaluation of biological networks as well as developing models based on genomics datasets and richly annotated genomics databases. Cytoscape is a platform that allows the development of functional interfaces based on genomics data and models. The goal is to develop several plug-ins for Cytoscape that illuminate certain aspects of the data and the associated models. A good opportunity to learn about biological datasets and their representation as well as visual interface programming. Skills: knowledge of computer programming and database management.

Thomas R. Yackel, MD, and Michael F. Chiang, MD. Evaluation of electronic health record (EHR) system implementation at an academic medical center. There are major institutional and federal initiatives promoting EHR adoption, but less is known about effectiveness of these systems in the real world. OHSU has had a fully-operational EHR system since 2006, and there are many opportunities to study the impact of this system. This project would involve analysis of outcome measures such as speed, efficiency, cost-effectiveness, and user satisfaction from the EHR implementation at OHSU. Skills: statistical analysis.