Biomedical Informatics
Summer 2022 Internship Projects
Oregon Health & Science University

Electronic Care Planning for Patients with Multiple Chronic Conditions
Faculty: Dr. David Dorr
Collaborating on plans of care for patients with multiple chronic conditions can be challenging. Aligning patients' values, goals, and preferences with medical evidence and many care teams' input requires substantial work. A new application using Fast Healthcare Interoperable Resources that has both patient- and care team-facing components is being implemented at OHSU, and a student is sought to help design, implement, and evaluate usability and usefulness testing.

High Blood Pressure patient-facing clinical decision support
Faculty: Dr. David Dorr
High blood pressure is one of the most common chronic conditions in adults older than 50, and the most common contributing factor for heart attacks and strokes. Significant evidence exists about both pharmacologic and non-pharmacologic methods to lower blood pressure, but they require substantial shared decision making and patient motivation. The intern will help us with our patient-facing HBP application; depending on their skill set, help programming, testing, or evaluating the tool with patients and care teams.

Secondary use of electronic health record data
Faculty: Dr. Michelle Hribar
My group focuses on the reuse of data in the electronic health record (EHR) for research in ophthalmology. Ongoing projects include analysis of data quality, building predictive models, and integration of models into the EHR. Skills: statistical analysis (e.g. R), computer programming.

Understanding the Role of the Microbiome in Bladder Health
Faculty: Dr. Lisa Karstens
The overall goal of this research is to understand how the microbial communities of the gut, vagina, and bladder contribute to bladder health and overactive bladder symptoms. Intern projects include developing, testing, and improving the pipelines for handling the clinical data associated with these projects (using REDCap), and bioinformatic pipelines for handling 16S rRNA gene sequencing data as well as NMR metabolomics data (primarily in R). The projects will provide experience of analysis and biological interpretation of so-called 'big data' that arises from the rich and complex datasets generated by high throughput techniques used in basic research. Excellent record-keeping skills and self-motivation are essential. Some familiarity with programming and statistical analysis are preferred but not essential.