

In collaboration with a faculty advisor, I am currently conducting a prospective study entitled “Warfarin Pharmacogenomics in the Elderly”. Warfarin is an anticoagulant that can have variable clinical efficacy depending on a person’s genes. The objective of this study is to determine the clinical and genetic factors associated with warfarin dose requirements in the elderly. Initially, I was tasked with synthesizing an idea for a research project, and at the time I was unsure of where to start. I began by doing a literature search in PubMed by author name. I searched for publications by my advisor to get an idea of where her interests and expertise lay. Pharmacogenomics and anticoagulation were the two fields that appeared most often. I began work on this project with very little knowledge about anticoagulation and even less about the field of pharmacogenomics. I endeavored to begin educating myself by starting with the basics. I went to Swilley Library and read several physiology texts on reserve to familiarize myself with coagulation and the metabolism of drugs. Then I used Access Pharmacy and Lexicomp online to learn about relevant anticoagulant and antiplatelet drugs. I also used genetic references available online such as PharmGKB, OMIM, and dbSNP. The goal, and ultimate utility, of any new research is to add knowledge to a respective field. With this in mind, I performed a follow up literature search using primary literature databases like PubMed, IDIS, GAIN, and EBSCO for “anticoagulation AND pharmacogenomics” to get an idea of what was known about the relationship between the two.

I wanted to conduct a project that was feasible. Therefore, I wanted a hypothesis that had evidence to support it in a broad, theoretical sense, which I could then narrow the focus of to create a research project that would still add knowledge to the field. This was actually the most difficult part of the process, as it required coming up with something completely unique and novel. However, the reality is that even the vanguard of scientific knowledge is based upon that which came before and that all research is good research if it increases the level of human understanding. This was a very important lesson that I thankfully learned early on in the process, as clinical research can be a very time and labor-intensive process. This revelation has been integral in my ongoing maturation towards an independent researcher. This project has forced me to become much more comfortable performing literature searches, and it has really reinforced the need to be thorough and exhaustive in that exercise. In addition, I have learned to take a systematic approach and to critically evaluate the available literature. The research skills that I have learned while working on this project are invaluable. I continue to use the online journal databases and lexicomp on an almost daily basis and it has empowered me to feel confident that I am getting the most current evidence, and that I have the tools to evaluate and use it.