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When professor Kowalczyk handed me a list of recommended research topics, I was utterly bewildered. Here lay ten bullet points that served as a reminder of my lack of knowledge and experience despite almost four years of undergrad study. Never having heard of such sophisticated and lofty fields, and after some brief research, I settled upon a topic that sounded interesting and less alien: computational screening of materials for organic photovoltaics. This paper has been a personal journal unlike any I’ve experienced here at Western. To begin as a novice in a foreign field, and through the immersion into literature become an erudite is a stark transition. The resources made available to me by the library were absolutely essential in the creation of my paper, and form the basis of my understanding of a field where I hope to hold a career.

With Kowalczyk’s guidance, I began my endeavor into a perspective journal at the ACS which was made available by Western’s online subscription. Despite the journal’s alleged accessibility, I quickly found myself scrambling to understand terms and concepts. Subsequent articles found on Scifinder from 10 or so different journals served as the foundation of the contextual knowledge I needed to decode articles relevant to my topic. Additionally, two physical books on computational chemistry, found in the library, helped me understand the finer nuance of computational chemistry calculations. After developing an understanding of the basics of organic photovoltaics, I realized I needed a thesis connecting computation and organic photovoltaics aside from how they worked. I began moving through citations of a few relevant articles to expand the scope of my research. Many of the articles I discovered were not accessible through the libraries collection, at which point I took advantage of the InterLibrary Loan (ILLIiad) system. I used the ILLIad to request 8 essential articles relating to computational chemistry and photovoltaics spanning from theory to industrial pragmatics that served as the bulk of my discussion. Through practice, I learned how to read these journals quickly and effectively to find information relevant to my research, while minimizing energy expenditure on concepts and ideas I deemed irrelevant.

My use of online resources reflects the transition from physical to in silico libraries. Furthermore, novel fields like computational chemistry have records that are primarily online. Physical books are usually older as evidenced by the books I used, both of which were from the early 90’s. As I discovered, I could find more pertinent information in seconds online, compared to meandering about obscure hallways searching for an old book for half an hour. Coincidentally, my research focuses on the use of in silico chemistry and its extreme efficiency in finding optimal candidate materials for organic photovoltaics. My research topic parallels my use of online library resources and I think the argument I make in my paper is one that extends to the use of library materials.