

Final Reflection on My Summer 2024 Enrichment Experience at the University of Michigan

By Francis Bu

Class:

Our class took place from Monday to Friday from 9 am to 4:30 pm with a 1.5-hour lunch break in between morning and afternoon sessions. Our morning session typically consisted of a 1 to 2-hour lecture followed by another 1-2 hours in a computer lab for research. Our class consisted of 15 people from very diverse backgrounds. We had people all the way from California to South Korea, and everywhere in between. Class lectures were typically given by our professor, Dr. Chen. However, sometimes the TAs would give short, 30-minute lectures as well.

During the first week, we delved into the basics of chemistry, eventually transitioning into specific lab techniques and their applications with reference to surface chemistry. We focused on the interactions of molecules at the interface level and how various surfaces interact. Then, during the second week, we studied MOFs (Metal Organic Frameworks), microscopy, spectroscopy, chromatography, titration, catalysis, nanotechnology, SAMs (Self-Assembled Monolayers), and biomaterials. With additional guidance from Dr. Chen and his TA's, we also had the opportunity to take a look at real research done by his team in their labs. I found MOFs and the various forms of spectroscopy to be the most interesting. I was amazed with the new developments in chemistry that I had no clue about. Another important aspect of the contents we covered in class were their real-world application. Surface chemistry plays a critical role in almost everything around us.

In addition to the class lectures, we also had the opportunity to apply our knowledge in a real lab setting, forcing us to think critically to perform our experiments and analyze our results. I had performed labs in the past, however, the labs we performed at the University of Michigan exposed me to the "complete" experience. At times, experimental errors or unexpected contaminants affected our results, forcing us to think outside the box to analyze our results in a meaningful way. We performed polymerization, titration, chromatography, organic synthesis, and IR (infrared) spectroscopy labs over the course of the two weeks. I found the IR spectroscopy lab to be the most interesting. We studied the absorption of various wavelengths of infrared light (energy) by various bonds in compounds to identify the presence of various molecules and bonds, collecting and analyzing our results using a transmittance graph. It was truly fascinating to see how far technology has come over the past hundred years.

Aside from the academic aspect of the program, I realized that the social aspect is a big part of what makes it so special. It's not just about learning new things or diving into my interests; it's also about meeting new people and making friends. Working with my peers and mentors has truly been a rewarding experience. We've shared experiences, worked on projects together, and had a lot of fun along the way. The connections I made along the way made me feel like I was part of a community, and it made the camp experience even more memorable and rewarding.

Outside of Class:

Aside from the lectures and class work, I also had the opportunity to explore the university campus and experience what it was like to live in a dorm. This is the first time I've had to live in a dorm and I absolutely loved it. Within the first couple days, I formed a routine which included things like walking to the dining hall in the morning, heading to class, or going for a run, and I really enjoyed sticking to it. The beautiful campus, paired with the great weather, made the experience even more enjoyable.

Although I loved my chemistry lectures, my favorite part of my program was exploring the campus and spending time interacting with new people I met along the way. Living alone and having a routine instilled a strong sense of independence and self-reliance in me, both of which are incredibly important to me. During my time at MMSS, I had the opportunity to explore the Ann Arbor Summer Art Fair, take a trip to Cedar Point, and grab food downtown. The tacos were so good that I went back three times... I also got an amazing caricature done at the art fair!

In a bittersweet mix of emotions, I am proud to say that I have completed my Surface Chemistry program at the University of Michigan. From the late-night conversations to teaching my roommate how to do push-ups and the long lectures in East Hall, the memories I made along the way will stick with me forever.

Final Remarks:

Attending a summer program at the University of Michigan was a transformative experience that opened my eyes to new academic and personal possibilities. Immersed in a dynamic learning environment, I had the opportunity to engage with my professor, TAs, and motivated peers from diverse backgrounds. The program's coursework challenged me to think critically and expand my understanding of chemistry, while the exciting campus life showed me what the future has to offer. This experience was not only academically engaging, but also helped me gain a deeper appreciation for the social aspects of life. Overall, it was an invaluable opportunity that inspired me to pursue my goals with a new perspective on education.

This was my first time being sponsored by the Garwin Family Foundation, and no words can truly express my gratitude for the organization and its staff. The GFF staff are dedicated to providing an enriching experience for exemplary students all across Southern Illinois, for which I am extremely grateful. This summer has been instrumental to both my academic and social development, and I am honored to be a member of the GFF "family". I will continue my studies throughout the school year, and I am extremely excited for what the upcoming summers have in store!