This fall 2013, I completed a co-op at Infineum's Linden Business and Technology Center in Linden, NJ. Infineum produces engine oil additive packs. The group I worked in, Manufacturing Technology, researches product development and the manufacturing and distribution of products. I worked in the Antioxidant, Antiwear, and Antieverything-else (AAA) group.

I worked on three projects. The first involved investigating the company's analytical methods for gaining percent elemental readings on a recycle stream in one of their manufacturing processes. The Infineum engineers were skeptical of their analytical methods for gaining elemental readings due to the high variable of the readings. Therefore, they asked me to do elemental mass balances on their plant data and solve for the variable in question to verify the analytical methods. The second project was an optimization study on one of the manufacturing processes. The last stage of one of the manufacturing processes involves an extraction and separation to eliminate excess sulfur in their product. They increased the cycle time of the separation in the process because they were having problems with the final product. This increase in cycle time poses a significant cost for the company because it is dead time that they could be making more product. Therefore I was asked to devise experiments to decrease the cycle time of the separation.

When I first arrived at Infineum, I had to get extensive training on lab safety. Infineum is one of the most safety conscious companies in the world. While getting trained on lab safety, my boss gave me technical material to read about my projects. Once I was trained and equipped with knowledge, I began my projects. I frequently meet with my boss to discuss the results of my projects and further work to be done. As I mentioned above, I got to devise my own experiments for the separation optimization
project. Therefore, I had complete control of this project. My only requirement was to run my plans and safety precautions past my boss before carrying out my experiments.

At the end of the experience I made some of my own discoveries in the lab that Infineum is looking to apply on the plant scale. My boss asked me to make my own conclusions about the mass balance in the investigation of our analytical methods. As a cap stone to my experience, I made a 15 minute presentation of my work to the company.

Overall, my coop experience at Infineum was worthwhile. I learned practical applications of chemical engineering techniques by doing mass balances on actual plant data. I was able to work independently on the optimization project which has greatly boosted my confidence. In addition, I gained invaluable professional communication skills since I communicated with my boss on a daily basis.

Life outside of co-op was nothing less than perfect. Infineum provided me with housing in Ave, an apartment complex with hotel like accommodations, for only 15% of the rent. Since I was within an hour driving distance from my house, I went home a lot. Also, the train station to New York City is about 50 feet away from the apartment complex. Therefore, I also took the train into the city very often.

To any student thinking about co-oping at Infineum, I HIGHLY recommend it. Infineum is a technically challenging environment and an overall great place to work.