

Dorothy Liu

GNBCC

With my fully packed car that was practically exploding, I was not ready to take on what Rensselaer Polytechnic Institute (RPI) had to throw at me. I was thrilled to have the opportunity to devote my whole summer to research but all I could focus on was leaving Great Neck behind-- my home, my friends and my potential experiences. Although I was already overwhelmed with getting lost in the campus, it was comforting to meet other GNBCC researchers that had the same problem. Instantly, we clicked and bonded over our fears of the common app, the surprisingly amazing food and the humid summer heat. In the time span of about 4 hours all my doubts were wiped as a way as I realized RPI would become my new home with new friends and new adventures.

At my stay at RPI I researched about using selective acetylation to alter and replace groups in the 6' and 6'' areas of lactonic sophorolipids. With much trial and error, I was able to alter mechanical and thermal properties which would give the polymers I designed the optimal abilities to be used for tissue engineering. These polymers are nontoxic, cheap and able to be large-scale manufactured enabling me to provide a more practical and efficient approach for breast reconstruction. This ultimately gets rid of the need for plastics used for breast implants.

In practically 6 weeks, I was able to conduct my research under my mentor Filbert Totsinganon. I created polymers that would be feasible for tissue engineering scaffolds. Although extremely intimidated at first by all the chemistry that I was never taught, I began to grow into the scientific setting by reading papers and practicing hands on. Chemistry became almost like a jigsaw puzzle to me. Each individual atom has a number of valence electrons that forms numerous amounts of compounds when combined together. But only specific atoms can

only fit in certain ways. So when atoms are used in chemical equations that balance, the atoms react and transform into something even more fascinating. Although most people do not realize it, chemistry is always surrounding us. Even the complex world before us is composed of a total of 118 individual elements. My experience at RPI has helped me develop a more open approach to the world around me.

I am thankful to Laura, Lisa, and the entire GNBCC for giving me the chance to not only discover better plausible approaches for biomedical problems, but also giving me the chance to meet new people, create everlasting memories, and develop a larger insight on the world around me. At RPI I was able to experience different cultures of food provided by the cafe, to watch my friends compete over pool games, and to inhale the beautiful city of Troy. This summer has shined light on the wonderful world of research and has prompted me to continue to pursue more research and more experiences in the rest of my lifetime.