

Aaron Abizadeh
North Shore Hebrew Academy High School
Great Neck Breast Cancer Coalition Student Research Internship
Rensselaer Polytechnic Institute, Polymer Center

This summer, I was given the opportunity to spend four weeks of July at Rensselaer Polytechnic Institute. This summer experience would not only give me the chance to work side by side with a college graduate student to find a nontoxic process to polymerize polylysine, but it would also give me a taste of college life on RPI's beautiful campus of 296 acres. In addition to this, I was introduced to a great social life jam packed with activities, meeting multiple friends in and out of the program, and creating lasting friendships and memories for years to come. While these components of my internship are quite impressive, they would be nothing compared to the invaluable time I spent working in RPI's lab.

My lab partner, Isabelle and I were partnered up with Robert, a college graduate student who would mentor us through our research. To this day I am so appreciative of Robert's kindness while working with us, as he took the time to make sure we knew every aspect of our research and its importance towards green chemistry. Whenever Isabelle or I had a question, we had the comfort to know that Robert was there, ready to provide the perfect answer with much patience and understanding. Every day, Isabelle and I would walk to the Polymer Center at Cogswell Labs, where we would go to Dr. Gross' lab to work with Rob to find the optimal time duration and temperature for our polymerization of polylysine to occur. Ultimately, what separates our polymerization of polylysine from the others is that we simply used ethanol and water for our process, while the original process used toxic chemicals, which when exposed in our environment could potentially lead to multiple cancers. Every Friday, we would meet with Dr. Gross and present to him our progress for the week. I believe that these meetings were essential to our success in the lab, as Dr. Gross provided the feedback and guidance we needed in order to improve for the week ahead. These meetings taught me that mistakes are just a part of the process, and acknowledging them are a key component for future success.

The work that I did in the lab was simply amazing. One instrument which I was given the opportunity to work with was the Nuclear Magnetic Resonance Spectroscopy, or the NMR. I, along with Robert, would use this device in order to check the structure of our polylysine products over the variations in time and temperature in order to find the one optimal for industrial use. Using lab equipment as sophisticated and as fascinating as this was truly humbling, and I enjoyed every second of it.

All in all, my summer research experience at RPI was one that will last with me forever. The fact that I contributed to breast cancer prevention in any way shape or form leaves me with a warm feeling in my heart, knowing that I was part of making a change for the better. I would like to thank Laura Weinberg, Lisa Levine, and all of the Great Neck Breast Cancer Coalition, for providing me with such an unbelievable research opportunity along with invaluable support and direction throughout this entire process. It was truly a once in a lifetime experience, and for that I am grateful.