

Students & Scientists Breast Cancer Environment Research Program Essays, 2022

By Myra Saeed

Great Neck South High School

Great Neck Breast Cancer Coalition

University of Massachusetts Amherst, Vandenberg Lab

This summer, I had the privilege of working with Dr. Laura Vandenberg in her lab at the University of Massachusetts Amherst for four weeks. This enriching experience started off with learning about the importance of mammary gland development and environmental factors that may disrupt its process. Specifically, Dr. Vandenberg taught us about chemicals, such as bisphenol S (BPS) and ethinyl estradiol (EE), that disrupt hormone action in the mammary gland and how that may cause abnormalities in mammary gland structure. With this information and Dr. Vandenberg's guidance, we were able to perform research on our own. This consisted of analyzing dissected mammary glands from granddaughters of BPS and EE exposed mice. We collected numerous morphometric measurements to gain insight into how the development of these mice may have been affected by these chemicals. We ultimately found that BPS and EE impacted mammary gland development by increasing the rate of pubertal growth. With the data gathered and conclusions drawn, we were able to create polished scientific posters. In our final days, we conducted further research on the effects of harmful environmental chemicals on the grandchildren of those initially exposed to create an informational animatic for our community. This video highlights how these chemicals function and, more importantly, what can be done in our community to curb this crisis. Overall, this program has provided me with invaluable knowledge and skill in not just scientific research, but also in leadership, communication, and participation.