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Great Neck Breast Cancer Coalition Students and Scientists Research Program 2021

University of Massachusetts - Amherst, Vandenberg Lab

This past summer, I had the privilege of interning under Dr. Laura Vandenberg of the University of Massachusetts through the Great Neck Breast Cancer Coalition Students and Scientists Research program. I, and five other interns, learned a tremendous amount about the mammary gland, environmental pollutants, hormone disruptors, breast cancer advocacy and more. Even though the internship had to be held virtually, it was a phenomenal experience that I am incredibly grateful for.

The Students and Scientists Research Program was four weeks long. During the first week of the internship, Dr. Vandenberg taught all the interns about the structure of the mammary gland and about the overwhelming amount of environmental pollutants that people are exposed to daily. We learned about several significant case studies that followed the children of parents who were exposed to hormone disruptors during pregnancy. After thoroughly learning about all of these topics, I felt prepared to take a step forward and conduct my own research.

At the beginning of the internship, Dr. Vandenberg introduced her high school interns to the graduate students that she was also working with over the summer. We learned a lot from the graduate students, who taught us many skills that we needed. One of Dr. Vandenberg's graduate students taught us how to analyze mammary glands using software called ZEN. She and Dr. Vandenberg taught us how to measure the ductal area of a mammary gland, classify if a structure is a TEB and measure the ductal extension of each mammary gland. With these strategies, we were ready to delve into actual research.

Dr. Vandenberg supplied each intern with about 30 images of the mammary glands of mice, some of which were exposed to specific environmental pollutants and some were not. To eliminate any bias in the study, we analyzed the mammary glands without knowing if they were exposed to chemicals. After all our data was collected, analyzed and organized, Dr. Vandenberg revealed the status and exposures of each mammary gland. We then independently researched the chemicals that we had images of, and we tried to come to conclusions about the effect of those chemicals on the mammary gland. We constructed charts and graphs and learned a lot about how to analyze and organize scientific data.

In addition to analyzing mammary glands, we learned about breast cancer advocacy. We were given the opportunity to interview breast cancer survivors and advocates and learn about the action that they have taken to limit the number of environmental pollutants that society is exposed to. We cut clips from each of our six interviews and created two episodes of a wonderful and informative podcast.

To conclude our research and accomplishments, we presented our work to our parents, the Great Neck Breast Cancer Coalition board, New York State Assemblywoman Gina Sillitti and Nassau County Legislators. We were finally able to do what we learned so much about- spread awareness about environmental pollutants and advocate for stronger action to be taken in our communities to limit these chemicals.

Overall, I had a terrific experience interning under Dr. Vandenberg on behalf of the Great Neck Breast Cancer Coalition. I am incredibly grateful for this opportunity and all that I learned from it, as well as the connections that I made through it. Thank you to Lisa Levine and Laura Weinberg for enabling me this opportunity, and most of all, thank you to Dr. Vandenberg for guiding me through it all.