

## Students & Scientists Breast Cancer Environment Research Program Essays, 2022

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This past summer, through the Great Neck Breast Cancer Coalition, my peers and I were lucky enough to receive the opportunity to research environmental chemicals and its relationship with mammary gland development in the lab of Dr. Vandenberg at UMass Amherst. It has always been my dream to research advanced, health related topics. Although research class in school is one of my favorite courses, the types of research in a high school lab setting are limited.

Therefore, getting the rare opportunity to work in a professional lab along with scientists, such as Dr. Vandenberg and her students, is one which I will cherish forever. On top of gaining experience under a lab setting, being able to contribute new information to the field of breast cancer was the best part of the entire experience. Going into the lab with very limited knowledge on the effects of environmental chemicals, I quickly learned many shocking truths about the harmful chemicals that surround us everyday. Along with information on chemicals and cancer, I learned various important morphometric and imaging techniques. This past summer, I was not only able to gain knowledge, but also spread knowledge through making an informational animated video on the importance of EDCs and research regarding the F2 generation.

A main subject of my study this past summer was endocrine disrupting chemicals, specifically BPS and ethinyl estradiol. BPA is a chemical that is more widely known to be harmful to the human body, and since then has been removed from many of our products such as

plastics. However, there are many chemicals similar to BPA that are not receiving the same public attention. Endocrine disrupting chemicals or EDCs such as BPS disrupt the endocrine system and metabolic processes. We are exposed to these chemicals daily and often unknowingly as a result of a lack of packaging labeling. This summer, my research investigated the effects of BPS and EE2 on F2 female mice mammary gland development. I learned a lot about how our future generations are affected by the chemicals we expose ourselves to today. Research on the F2 generation is able to provide insight on the health and development of my generation, and future generations as well. These generational effects are exactly why chemical testing, and exposure limitation through banning of known harmful chemicals is crucial to our wellbeing, and to those who come after us.

I am beyond thankful to the Great Neck Breast Cancer for providing me the opportunity to be involved in this research internship. I can confidently say that this was the most meaningful and enriching summer experience yet. Not only have I gained scientific knowledge, but this residential program gave a fantastic preview of college life. The UMass Amherst campus is gorgeous and well equipped with many amazing facilities leaving me excited for college life. I also met many people who shared common interests with me and gained friends from all over the country. This internship has furthered my interest in cancer research and I hope that this program was just the first step towards a deeper understanding of chemicals' links to breast cancer.