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Since this was the first time the Great Neck Breast Cancer Coalition sent a student to Silent Spring Institute, I had to rely on bits and pieces of information about the place I was told instead of the numerous essays and previous experiences the former students had at Tufts. I came to the conclusion that Silent Spring Institute was a lab and I was going to go into the community asking strangers about breast cancer. I had a very different experience that was valuable in a different way.

On the first day I met my research partner from Huntington named Aliyah. We complimented each other; while she was mountain biking and rock climbing, I was sitting on the couch watching TV. We were given cubicles and a list of important topics we needed to learn about before we started our project. We learned about the history of Silent Spring Institute, as well as its goals, and the background to our own project. The Massachusetts Breast Cancer Coalition founded Silent Spring Institute after elevated rates of breast cancer were found on Cape Cod. Named to honor Rachel Carson who sparked the environmental movement through her book *Silent Spring* about what humans are doing to the environment and what it is in turn doing to us. She died of breast cancer. Our own project is part of the Intervention Study.

Researchers from the Silent Spring Institute will go into homes and test the air and dust for chemicals believed to be either mammary gland carcinogens or endocrine disrupters. Then they will switch the cleaning and body products to those without these carcinogens and test the air and dust again. Aliyah and I were looking through ingredients of products in an alternative grocery store and a conventional one with the research question: "Is it possible for the average consumer to find cleaning and body products that meet the Silent Spring criteria?"

The Silent Spring criteria refer to different chemicals that are suspected to cause breast cancer because they are either endocrine disrupters or mammary gland carcinogens. The first cause irregular hormones leading to cancers affected by hormones: breast, ovarian, cervical, prostate and testicular. The latter cause gene mutations contributing to tumors.

Here are the different chemicals: fragrance, phthalates, parabens, ethanolamines, antimicrobial, AP-based Surfactants, Dichlorobenzene, lavender or tea tree, estrogen placental, and stain resistant. Fragrances: there are many different kinds and some of them are endocrine disrupters. Phthalates can be found in plastics and fragrance. Parabens are preservatives in cosmetics. Ethanolamines are found in detergents seen as MEA, DEA or TEA. Antimicrobials kill bacteria. We look for this because sometimes they kill good bacteria and also they leave the strong bacteria to survive and grow stronger so it takes more to kill it. These are found on labels as triclosan, ticlocarbon, Microban (R) or it could say antibacterial. AP-based Surfactants make bubbles in cleaning agents. Dichlorobenzene is

a disinfectant for toilets, garbage cans and mothballs and is a mammary gland carcinogen. A small study was conducted where young boys had lavender and tea tree lotion rubbed on them and they grew breasts and when the application of the lotion was stopped the breasts went away. There needs to be more research done for this piece of the criteria. Estrogen/Placental is a hormone that the body naturally produces but can effect the body negatively because it will damage the body's hormonal balance. It is usually listed in hair products marketed to African American women. Stain resistant are coatings on pots, pans and clothes found as perfloro or at Teflon (R) or Scotch-guard (R).

Aliyah and I split up the work. She wrote down the eco-claims which might have said "natural" or "fragrance free" or "no testing on animals" while I wrote down what ingredients in the criteria were in it or not. Often there was part of the criteria that was unknown because if something is less than .1% of the product it does not have to legally be stated. Together Aliyah and I repeated this for over 200 products in two and a half weeks.

We analyzed the data we collected through graphs. In the criteria we answered yes if the product did contain the criteria item, no if the product said it did not contain this chemical or if it said "all ingredients are disclosed" and the chemical was not on the ingredients list, and question marks if there was nothing about the chemical on the label. With these graphs we compared the number of identified items that were found in the products to each store. We found that there were more definite "no" in the alternative store than the conventional because the alternative manufacturers were more aware of the chemicals in the criteria and wanted to appeal to consumers who are more educated about these harmful chemicals. Then we compared the different categories of products against the amount of "yes" "no" and "?" in the criteria. We did the same with the different criteria and how many yes, no, and not sure for each. Lastly we compared the prices between each store and mostly the alternative store was more expensive but not by much, especially with the cleaning products there was not that great a difference.

Each Monday we had a staff meeting where everyone gives updates and their agenda for that week. In this non-profit organization there are scientists and fund raisers. Hearing about what everyone is doing gave both Aliyah and me more knowledge about how a non-profit organization works. On Tuesdays there is a meeting for all the researchers which Aliyah and I also attended. We learned about how they bounce ideas off each other and help one another in their different areas of expertise. On the first Friday we tested water for detergents. Detergents are in water because when people wash their cars the soapy water washes off into the sewers and then into goes into the ground water.

Although sifting through ingredients lists is a very tedious job, by the end after we presented our PowerPoint to the Silent Spring Institute staff and said our goodbyes, I was actually proud of the work that I did and felt like I did something good for the research community.