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Personal Report

Being part of this summer's internship proved to be a memorable experience. I learned to apply my knowledge of statistics on a real experiment that a group of us were actually conducting. Real life application tested me upon my knowledge and in that, also found shortcuts to my method of learning. I learned easier and less tedious ways of conducting hypothesis testing without having to tediously calculate each value for every single value by hand and then having to add them all up together in the end. I've also learned to be more familiar with the mathCAD program which proved to be really useful. It helped me calculate equations through the program created in the file making it easier to find numbers for certain values. It certainly helped me play around the numbers; "if I changed this value, what happens to the other values".

When I joined the program, I was under the strong impression that I was going to be in charge of the statistical analysis part of the project. Little did I know, it was a little more difficult than I thought. Most of what I learned in AP statistics in my senior year of high school, I was most familiar with normal distributions the random. Conducting sufficient testing skills of random data proved to be more difficult. Comparing the observed versus expected seem the more logical way of testing the muon count data. I did think of doing a t-test against the data because the standard deviation of the population was unknown, but as I conducted my first few days of research, it proved to be hardly worth it because other experiments said it was ineffective. For the first few weeks I immersed myself in research and books on random sets and statistics to help me on my project. I looked through all the salvaged files from the previous summer's interns and practically found nothing on statistical analysis of muon lifetime other than a power point on the basics of probability. What helped me the most were talks with Mr. Klierer and him helping me understand the programs from last year and others that he created himself this summer.

What I was most afraid of doing this summer were the presentations. It's difficult for me to explain something clearly to other people who don't know anything about statistics. There's a series of terms that needed explanation and I hadn't entirely anticipated that. I was somewhat able to go through basics, but was still unsure if people were actually able to understand what I was talking about. Slowly, I got a little better week after week as we continued with presentations. I still have a tendency to stutter or get my tongue stuck, but it's mildly progressing.

Other than the hardships in the lab, living in the dorms wasn't a bad experience for me. Staying in the dorms on my own with other house mates gave me a taste of the college life I would be leading in the coming few months except the fact that I'll be having a roommate and multiple floors in the building that I'd be living in. I missed a few of my friends and a few days of the fair... but other than that I felt pretty content in the dorms. What I think I miss most is home cooked food.... I never thought I'd actually miss it that much, but after constantly eating at Joe's and a cup of noodles everyday, trust me, you'll miss it and be glad when you go home when you do.

This internship was a great endeavor for me to take upon myself and I'm glad I did. I learned so much of what I knew so little about. From the randomness of statistics to the future of the entire universe and beyond, my mind had been filled with more knowledge in 5 weeks than I've ever had during a summer school class. I'm happy to say that I learned a great deal from this internship and has helped me confirm my decision upon my future career. I thank the entire SCIPP staff for allowing me to have this opportunity and the privilege to work on this summer's balloon deployment detector project.