

I had never heard of a RET program before my department chair forwarded an email to me advertising the one at BU. I've always loved science, and it looked like a fun and useful way to spend a summer that would otherwise be filled with TV watching and video games.

I wasn't sure what to expect from the RET experience. The two things that I expected to take away were a lot of lab experience and some tips and tricks that I could use in my classroom at school. I'm happy to say that I got both, but not in the quantities that I was hoping for. I have an excellent science background, having been exposed to an astounding diversity of equipment and techniques in my undergraduate education, and so when I first arrived at the lab I was immediately comfortable in the environment. However, the amount of time that we actually spent in the lab performing experiments and doing research was far less than I had hoped. One day a week was spent out of the lab learning about new teaching techniques, and I'm happy to say that many of those were both interesting and applicable. However, if you teach at a school with a rigidly defined curriculum then you will not have the opportunity to implement very much.

You really get thrown into the deep end in the first days of the program. The labs will get in touch with you and send you copies of papers that they've had published in leading journals, and you are expected to read and understand them in order to get an adequate background. For many RET participants this was challenging due to the technical jargon, and many people spent hours doing further research just to be able to understand their primary topics. My lab, for example, was refining an instrument that used light interference to measure nanometer thicknesses on slides with microarrays of proteins. Once we understood how the machine worked, we were given our project: determine a way to attach gold nanospheres to the microarray using antibodies. This required independent research on our part to find a system of chemicals and treatments that would first functionalize the gold nanoparticles, then attach an antigen to them, and finally allow them to bind to the antibodies on the microarray. We received help from the lab on this, but the majority of the research was our own. I felt comfortable throughout this process, but those who had less of a science background found the research more difficult.

The part of the research process that most surprised me was just how slowly it progressed. I expected to complete our project in under two weeks of research and experiments, but instead we barely managed to finish up in six. In those six weeks, we spent the first two doing research and planning out our experiments, the next three weeks conducting the experiment (and getting thwarted at each step by chemistry), and then the final week going through the entire experiment from start to finish one last time (and thank goodness it worked) before shifting gears entirely, getting out of the lab and changing focus to presenting our findings to the entire RET group.

In terms of the effects of this program on my teaching, I'd have to say that the most valuable thing I've taken from the program is online teaching resources. We are exposed to a lot of websites that host free teaching tools and science simulations. I have already used many of those tools in my classroom to great success.

Prospective RET participants: you will have a blast. If you are passionate about science, you will find returning to a lab setting a breath of fresh air, and networking with passionate science educators will allow you to work together to find solutions to common problems in the classroom. I thoroughly enjoyed the program and I hope you will to.