

Just Keep Swimming

HOW did I get here? I asked myself that question many times as I stood beside my poster in the Carl Ichan Laboratory at Princeton University. I was the only high school student in a crowd of PhD's and graduate students discussing the rows of poster on display. How on earth had I ended up here, a bright orange Princeton lanyard dangling from my neck, a small card stating clearly, *Renee Symonds, Center for Genome Dynamics at the Jackson Laboratory*? If my life was like a Sherlock Holmes novel, you would expect the habitual telegram or oppressed client to arrive and provide background to answer that question. However, my story didn't start with a telegram, but with the ring of a phone one quiet August evening, 2007.

On the phone was Mrs. McGann, a teacher from The Maine School of Science and Mathematics, the high school where I had recently completed my sophomore year. I was surprised by her call, but I was even more surprised by her proposition. She had called to offer me the chance to participate in a relatively new course, Computational Biology. The course was to focus on the basics of reading, writing, and reporting on scientific research documents. Once a week, PhD's from the Jackson Laboratory (JAX) would give lectures on relevant topics, culminating in a written grant proposal in the first semester. The second semester would then be devoted to conducting the proposed research. As an aspiring research neuroscientist, the course miraculous and though, I had never taken a formal biology course, my teachers thought I was up for the challenge. I was determined to prove them right.

From the moment I entered the classroom, I was inundated with a flood of information. I learned about genes and DNA, how to structure and read a scientific document, the advantages of the mouse as a genetic model, and how to use and analyze Quantitative Trait Loci (QTL), among other things. There was so much to take in that most nights I found myself sitting in my

room with my notes, googling the various words and methods that had been introduced that day. Gary Churchill, PhD, one of our primary teachers from JAX, remarked during his first lecture that he planned to throw my classmates and me into the intellectual deep-end of the pool and then teach us how to swim. On reflection, I find that to be the best description of the course. In Computational Biology, was far different from any of my other classes, I learned to think, work, and learn for myself and for my group more as a research assistant than a high school student. It was my job to get the answers to any questions I had, and to keep my notebook and independent research on schedule. I had to swim for myself and was rewarded at the end of the course, knowing I had accomplished something important.

Given my previous experience, I should have been prepared when I received another phone call from Mrs. McGann this past summer (2008): the game was afoot again. Nonetheless, I found myself listening in stunned silence to her latest proposal. The Jackson Laboratory would be participating in the meeting of the National Centers for Systems Biology in Princeton, New Jersey, and they wanted me to attend. It was the most exciting and terrifying phone call of my life. But the same determination that had prompted me to accept the invitation to join the Computational Biology course also made my choice a simple one; I accepted the invitation. I would attend the conference and represent the Jackson Laboratory's high school outreach program. As part of that representation, I was asked to create a poster describing my research and experience with the Computational Biology course. I worked endlessly on the poster and learned both the joys of well-documented data tables, and the trials of peer editing.

In a month, my bags were packed and my poster was sent. I was ready, and scared out of my mind. I knew the experience was sure to be a once-in-a-lifetime opportunity, I knew I would enjoy myself, but still my mind churned with worst case scenarios and my stomach knotted in

anticipation. Anti-climactically, the plane trip and ride to the hotel were uneventful, and I spent the majority of my time trying to comprehend half of the conversations taking place around me. Being surrounded by scientists, *real* scientists, was a surreal experience. I wasn't watching popularized NOVA programs, but experiencing the real, raw, data and analysis. It was mind-boggling, humbling, and exhilarating all in one.

It is hard to find the words to describe my experience at the conference. As comfortable as I felt with the teachers I had worked with for the past year, I felt like a out of place. It brought a whole new meaning to what Gary had jokingly referred to as "the deep end", but I was determined to keep swimming. Attending over sixteen hours of lectures and presentations was a grueling experience and I did my best to keep up, taking notes and inventing short-hand abbreviations at top speed. Despite my best efforts, a lot of information simply went over my head and before taking Computational Biology, I think that would have bothered me more than it did. Somewhere throughout the course, I had learned one of the most valuable lessons that any aspiring scientist can learn, and that is *how* to learn. After my journey into the world of scientific research, I sat in the back of my mother's car on the way home, just processing all the information I had taken in; my brain so busy I was barely able to form coherent sentences. I realized then, that it wasn't so much about how much information I had missed, but what I had learned and what I would take with me to further my own academic interests. I brought nervousness and excitement with me to Princeton, and came back with confidence, twice as much excitement, and most importantly, the will to *just keep swimming*.