Of mice and manuscripts

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SS Molecular Medicine

The subtle touch of a finger? Forgetting to change the pipette tip? Maybe the machine's broken? Besides, it's 8 o'clock after all…..in an empty laboratory….on a summer's day….in Massachusetts, USA … on my virgin trip Stateside. I should probably just go home! Why did I ever consider research?

What had started out as quiet day changed course in dramatic fashion. I volunteered to perform a 'mega-PCR' in the misguided hope of helping the lab manager. Five life-draining hours later, the fruits of my labor had turned rotten – there was contamination in the control lane. Unfortunately, control contamination means experiment invalidation.

The significance of a reliable control was one of many life (well, research-related) lessons learned in UMass Memorial Medical School – a university connected to Trinity's Prof. Andrew Bowie. Over the course of 12-weeks, I became acquainted with the delicate art of handling mice, performing wet-lab techniques *ad nauseam*, critically analyzing scientific manuscripts and most importantly, understanding the value of patience in research.

Dr. Joanne O'Donnell provided supervision for these 12 weeks as I assisted her investigation into characterizing the roles of RIPK1 and RIPK3 in mice (representing a human model). RIPK1/3 are aptly abbreviated – these proteins have been shown to mediate the boundary of cellular life and death. In other words, depending on the signal received by the cell and RIPK1/3, cell death or cell survival (in the form of inflammatory gene expression) can result.

Initially, I was trained in basic wet-lab techniques including PCR, Western Blot, FACS, cell culture and handling mice. Once deemed competent, these techniques were used to assist Jo in her work. As well as this, I was afforded the platform by the lab group to discuss scientific reports pertaining to her research interest and to present my work at the end of the three months. In contrast to the nadir in paragraph one, the presentation proved the highlight. Presenting and discussing a topic to a crowd of experts (in that field) was daunting, but nonetheless reassuring.

Acting as a research intern provided insight at a critical juncture in my undergraduate degree. The most enlightening aspect of the internship was to show that lectures and lab practicals, whilst certainly captivating and informative, do not represent the often tough realities of research. Nor do they give a true indication of life beyond the all-encompassing, unifying cartoon models that scientific journals love. Moreover, the internship demonstrated that the requirements to become a scientific researcher are not uniquely academic; but rather necessitate a resilient, patient and determined mindset as well.

Ultimately, doing an internship has lent more focus for my final year and beyond. Without it, I would've been tempted to leap blindly into applying for any available PhD – and most likely, this would've been borne out of the attached prestige. Instead I'm keeping my options open - to graduate medicine, industry, a masters or possibly a gap year.