

## **A new class of chemical contaminating the environment**

BTS Vacation Scholarship 2017

*By Will Hotham*

This 8 week placement has given me a glimpse into the ever-evolving world that is research and toxicology. During my undergraduate degree at Newcastle University, I did my dissertation in Professor Wright's lab and during this time I began to realise the very real importance of research to today's world. From my dissertation I was fortunate to get this placement with the British Toxicology Society. I feel like it has given me a much more thorough experience of research from my previously scaffolded dissertation.

On my placement I worked with numerous cell lines derived from rats, mice and humans. Before, I would have deemed my organisational skills as surplus to requirement, however, to thrive on this placement I had to step up a gear. This placement has not simply enriched my scientific knowledge but also my scientific skills.

I have enhanced my previous lab skills by working routinely in tissue culture, working on up to 5 different cell lines, including ensuring all of the different culture mediums were made to the correct molarity and in an adequate volume.

From culturing the cells, I performed various different time response treatments by administering a drug in solution to the plated cells. I removed 500 $\mu$ L of the drug at the various time points. From here I analysed the components of the solution I had collected by performing High Performance Liquid Chromatography (HPLC). This was a new challenge to me; in lectures I learnt the theory of HPLC, however working with this piece of equipment has allowed me to thoroughly comprehend how the machinery can be used to aid research. These skills can only stand to benefit my future research.

After my dissertation I had already decided I wanted to further my education, hence my choice to study an MRes in Stem Cells and Regenerative Medicine. Despite knowing I wanted to further my education, I was unsure where to go after my Masters. This placement has given me the ideal insight into research that I required to make my decision.

The light-bulb moment for me was when I could not understand why the HPLC machine was giving me such strange readings. I began to look online to possible solutions; I got hints about changing gradients or possible contaminations but no clear cut answer was available. This was the point where I realised research is not about looking up the answers: it is about finding out the answers. Finding the answers to questions that nobody knows. I was eventually able to overcome the issue with HPLC with the aid of my supervisors but the drive to solve the questions that no one knows the answers to has remained with me. It is thanks to this British Toxicology Society placement that I have realised that I wish to pursue a career in science and the next step is a PhD. The only thing is deciding which to choose.