Ashleigh Fletcher

Academic in a Chemical Engineering Department

Ashleigh has battled a degenerative inherited condition whilst studying in a male gender orientated degree and is now the Deputy Head of Department for Teaching and Learning

Why did you decide on a career in science?

I was always a very inquisitive child, and my dad helped with this, showing me how to fix washing machines, teaching me to solder and teaching me how to investigate a problem and record the associated information – for example drawing out circuit diagrams for home appliances that we fixed together. I was inspired into studying chemistry, as a specific subject, by my secondary school teacher (Mr Dulling), who made the subject come alive and made me want to understand why things happened. I wasn't entirely certain what I wanted to do in the field of science, but I knew that this was a subject that truly interested me and working in a related role would allow me to extend my understanding of the field – hence, my choice to study chemistry at degree level.

What qualifications and experience do you have?

I obtained GCSEs in all three science subjects (chemistry, physics and biology), and took chemistry and physics forward to A-level, this allowed me to study a BSc Honours degree in Chemistry, before moving onto a PhD in Chemistry. Since I took on my current role, I have also returned to study for an MSc in Advanced Academic Studies, to support my teaching role, and then undertook a second PhD in Chemical Engineering pedagogy. In addition to this I have sought Fellowship of the Royal Society of Chemistry, Chartered Chemist and Chartered Scientist status, as well as achieving Senior Fellow recognition from AdvanceHE.

What does your typical day involve?

As I am sure most people who work in the science field will tell you, there is very rarely a 'typical' day. As my career has progressed I have moved from spending 100% of my time conducting research directly in the laboratory, to having oversight of a group of graduate students and PDRAs, in addition to forming collaborations with other academics and people in industry, so I spend quite a lot of time writing funding proposals to support that research. When I am not teaching undergraduates, there can be a lot of meetings, both within and outwith the department; for example, I sit on the University's Senate, which helps determine how the University is run, and I am an external examiner for a chemical engineering programme at a different university so I help them maintain their teaching and assessment standards.

Do you work mostly on your own or as part of team?

I work within a medium sized department (about 24 academics), and collaborate with many of my colleagues in the different parts of my job, including teaching and research. I also lead a research group focussed on a particular research theme (adsorption) and there are 7 members of my team, including me. The rest of my team are postgraduate research students (so they have a first degree in science or

engineering and are studying for a higher degree, a PhD) and one post-doc (who has already graduated from a PhD). We work together on the research that they perform and how we can communicate that to others.

What is it like socially where you work?

When we work in the office, the environment is incredibly sociable and my colleagues are a supportive group who support each other when needed. There is a dedicated staffroom where we often meet for coffee or lunch, discussing work and external interests – this space is also open to our researchers and postgraduate research students, which helps integrate people into the department and reduce any barriers that new staff might face. We have events where we meet up outwith work, for example barbecues, laser-tag, escape rooms, and these are great at strengthening our teamwork and helping us know each other as individuals.

What challenges have you faced to get to where you are now?

I think it would be fair to say that I have suffered from gender bias during my career progression, particularly prior to my current position where opportunities and support offered to male colleagues were not provided to me. For example, in a previous position, when starting at the same time as male colleagues, I had to fight to be allocated an office and PC (automatically given to other colleagues) – I even had a challenge to get some furniture to put in the office! When starting my current position, I was overlooked for support to develop my research group, while male colleagues beginning at the same time were given preferential access to funding. As a woman, I was also initially given all of the 'touchy-feely' roles in the department.

There may also have been unconscious bias against my disability, which were viewed as the reason for a gap in my publication record when starting my current role, when the fact of the matter was that I was using this time to develop a truly independent research portfolio (this was incredibly important to me to ensure that I was judged on my own merit).

What are you most proud of in your career?

My research has varied over the past 25 years but has always been focussed in the same area of adsorption systems. Within this field, several of the papers that I have published have been the first examples of new behaviour in adsorption systems, which has been influential on other researchers and impacted on the development of the field. It's particularly exciting to see other researchers extend this and use the knowledge that I have created to do even bigger and better things – being part of that ever-continuing expansion of the field is one of the most rewarding parts of my job.

What do you think are the most important skills for someone in your role to have?

The skills I use on an almost daily basis include those in the areas of communication, presentation, time and project management, critical thinking and analytical working.

What one piece of advice would you give to someone seeking a career in chemistry?

Study maths and physics to support your learning in the discipline, and be open minded about where the subject might take you.