



Charlotte Blacka– ACCE DTP

2022-23 cohort

I completed my placement with the Centre of Excellence in Mass Spectrometry, based in the Department of Chemistry at the University of York. My work focused on analysis of small molecules using various mass spectrometers. The main components of this placement included:

- A series of experiments to determine extents of between run contamination on the mass spectrometers, followed by experiments to set up a quantification method for various standards
- Development of laboratory preparation methods for molecules in unconventional matrices (e.g. edible matrices)

Through this placement I gained experience in small molecule mass spectrometry (as opposed to the protein mass spectrometry I usually conduct for my PhD research). Experience with small molecule mass spectrometry meant that I learned how to use different mass spectrometry data analysis software's, how to tweak mass spectrometry data acquisition methods to optimise small molecule analyses, and some new lab preparation techniques. I also was trained in how to calibrate various mass spectrometers and how to approach problem solving and fixing small problems that commonly arise when using a liquid chromatography-mass spectrometer.

This placement gave me the opportunity to problem solve, too: there were some slight hiccups in using various mass spectrometers, leading to insufficient data for the types of analysis we were hoping to conduct. To overcome these obstacles, a combination of training and time investments into method development were employed. Regular meetings with three different members of staff were extremely useful in identifying a sensible direction to move forward in.

Carrying out this placement has broadened my horizons in analytical chemistry, and I have developed an understanding and appreciation for small molecule mass spectrometry. I believe this now makes me more employable as an analytical chemist, since I have a broader range of experience. Moreover, I thoroughly enjoyed my time during the placement, and it has made me realise that I would enjoy working in that field and conducting similar research and analyses.