Reflecting on my MSc in Molecular Pathology (2019 - 2020)

By Amber Matkowski, Y5 Medical Student, University of Manchester

I have just taken a year out of my medical studies to intercalate a master’s degree in molecular pathology at the University of Manchester. This would not have been possible without a generous grant from the Pathological Society, for which I am deeply grateful. I would also like to thank Dr Richard Byers, for organising, maintaining and teaching the molecular pathology programme, and to all of the fantastic lecturers who made this year such a worthwhile endeavour.

I have aspired to be a histopathologist for a long time, however the field of molecular pathology was quite unfamiliar to me before undertaking this degree. Attending the Pathological Society Winter Meeting in 2019 was my first introduction to the molecular realm: I was inspired and intrigued by the innovative research presented at the meeting, which motivated me to explore molecular pathology further.

The significance of digital pathology was highlighted at the winter and summer meetings I attended in 2019, although I could not yet fully appreciate the practicalities and necessities of transitioning to digital workflow. Studying this over the past year has prepared me for my future career as a pathologist, and also brought my attention to a domain of pathology that I thoroughly enjoy and would like to pursue further.

I built upon this knowledge and extended it further during my dissertation, where I applied unsupervised machine learning methods of single cell phenotyping to uncover prognostic biomarkers in follicular lymphoma. This led me down a path of learning essential programming languages and improved my understanding of statistics and visual presentation of data. These crucial skills have prepared me for complex research projects going forward and provided me with a great deal of confidence in pursuing such avenues. I thoroughly enjoyed working with my supervisors, Dr Richard Byers and Dr Martin Fergie, and was well supported throughout this unusual year. I really cannot thank them enough.

A great deal of multidisciplinary working is necessary in molecular pathology, and this was reflected in a curriculum that covered many technical, academic and clinical aspects of pathology. A better understanding of diagnostic medicine is an essential tool for clinicians: knowledge of test efficacy, limitations, and pathobiology can improve diagnostic accuracy and subsequent patient management. As personalised medicine advances, the importance of risk stratification is increasingly evident, and this I am sure the information gained from this course will prove indispensable in the clinical years ahead.

Malignant and non-malignant disease modules were also clinically focused, and often covered topics that are important to understand in clinical medicine but are not covered in enough depth at medical school, such as asthma, joint diseases and haematological malignancies.

It was intimidating at first, to choose to study something that was unfamiliar and, honestly, thought I would find very difficult. I am so glad I made that choice. It was certainly a challenging year, but I would do it all again if I could. It was thoroughly enjoyable and opened my eyes to aspects of medicine and science that are deeply inspiring. I feel privileged to have the knowledge I do now, and I am sure this experience will shape my career substantially in the years ahead.

I look forward to attending future conferences as I am better equipped to understand the powerful research being undertaken, and the wider implications of it. I am excited to see how the future will unfold and what discoveries will be made as technological advancements continue.

I highly recommend intercalating during medical school, particularly in the discipline of molecular pathology. It is an excellent opportunity to gain confidence in your abilities and widen your perspective of pathology, and of scientific research more generally. Thank you again to the Pathological Society of Great Britain and Ireland for making this possible.