

# BDIAP Intercalated Degree Bursary Report

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Medical School: Queen's University Belfast

Year bursary awarded: 2019/20

Degree: MSc Molecular Pathology of Cancer

Research Department: Queen's University Belfast Precision Medicine Centre (Patrick G Johnston Centre for Cancer Research)

I would like to express my sincere gratitude to the BDIAP for the intercalated degree bursary I received last year. This year would not have been possible without this generous funding. Despite it being a somewhat disrupted year, I found the experience incredibly enjoyable and useful.

After enjoying formal pathology teaching earlier in my undergraduate studies, two student selected components in pathology further cemented my interest in the area. This year not only gave me the opportunity to explore this fascinating specialty further, but also to better understand some of the current advances which will continue to shape the field for years to come. It has given me knowledge and skills I can use to stay abreast of developments.

Our course was divided into two semesters of taught modules and one semester over the summer devoted to a research project. Delightfully, the taught modules took me far outside of my comfort zone as a medical student. The cancer biology, immunology and genetics module set the scene for modules in translational research and molecular diagnostics. All of these honed my critical thinking skills, informed my understanding of evidence-based medicine, and reinvigorated a passion for medicine that was perhaps being blunted by undergraduate studies where there is seldom opportunity to think for one's self. A module in biostatistical informatics again took me out of my comfort zone, but also helped prove to myself that I am capable and adaptable. I particularly enjoyed a module in digital pathology.

Unfortunately, due in part to disruption caused by the COVID-19 pandemic, not one but two plans fell through this year for the research component of my degree. However, the project I did complete was still in an area of interest. I spent the summer working remotely on a project using multiplex immunohistochemistry and digital pathology to evaluate the tumour immune microenvironment in non-small cell lung cancer. I studied PD-L1 expression on different tumour and immune cells in a chemotherapy treated cohort with the aims of determining any potential clinicopathological correlations and also demonstrating the utility of multiplex methodology for quantitatively describing the tumour immune context. I found the area of immuno-oncology to be hugely complex, but immensely interesting and the project challenged me to put into practice much of what I had learnt throughout the year. Skills I have developed this year, such as the ability

to review and critically analyse literature, use digital pathology tools and conduct statistical analyses, will no doubt serve me well in future. Our dissertation was written up in the style of a journal ready manuscript which enabled me to develop this style of writing.

The challenges and opportunities that this year presented me with have rekindled a passion for medicine. An insight into the advances in academic and clinical pathology has inspired me to strongly consider it as a career I would like to pursue in future. Meeting many pathologists this year who do clinical work but also balance this with research, education, leadership and many other roles, has confirmed my belief that this is exactly the kind of varied and interesting career I would like to work in. I recognise that another factor in my interest is the welcoming and approachable nature of the pathologists I met so far. So, I would like to say thank you for this as well as the generous bursary.

Jonathan Callaghan