Upon reflection, research has played a fundamental role in my educational career but was often undervalued in favour of passing examinations and gaining qualifications. The skills, knowledge and experience I gained from conducting research has played an important part in my academic development and growth. Whether it be in year 6 learning about the Romans and presenting this knowledge to the class, conducting an EPQ (Extended Project Qualification) alongside my A-levels about financial fair play in football and learning to balance studying and research, my MSc reviewing novel methodologies for conducting systematic reviews and extending statistical models for implementation into reviews of diagnostic tests and the year I spent as a research assistant developing tools incorporating complex statistical methods to aid clinicians conducting research, there is always something new to learn. These handful of examples each presented different challenges to overcome and the impact of each piece of research is crucially important from disseminating knowledge and introducing new concepts to classmates to impacting the way analysis is conducted in systematic reviews of diagnostic tests which has a real impact on clinicians and patients. All these projects were stepping stones which helped develop a passion for research that when coupled with the potential impact of research in the medical field to affect patients lives is what has motivated me to pursue a PhD.

The choice of my MSc in medical statistics was motivated by a desire to enter a career in which I could apply mathematical skills and concepts for the benefit of the medical field and patients. My current position working as a Biostatistician at the Cancer Research Clinical Trials Unit at the University of Birmingham involves designing, analysing and reporting early-phase clinical trials. One of the key highlights thus far was implementing a novel statistical design into a trial being funded by AstraZeneca. Not only does it present unique challenges in terms of the methodology but also logistical and ethical issues which need to be factored into designs of clinical trials. The process involved complex programming and statistical work and ignited a desire to pursue more of this type of work. This job provides me with a platform to develop and implement my proposed PhD topics, novel approaches and clinical trial designs which will have direct impact on patients in trials.

This PhD presents another challenge as I will have to complete it whilst maintain a full-time position at the University however, I believe I have the relevant skills and experience to succeed. My previous experiences with research and job as a research assistant provided me with skills such as time management and organisation to perform task efficiently whilst also providing me with a platform to develop technical skills such as programming. I also gained experience communicating research by presenting at conferences and meetings and writing papers. Throughout this PhD I hope to improve these skills as well as develop new ones such as learning new programming languages and techniques to effectively implement statistical methodology that is developed. Most of these skills will also be beneficial for work I undertake further on in my career and research post finishing the PhD.

As the medical field continues to innovate and develop new ways to care for patients the way in which trials are conducted must also follow a similar trajectory. The design and methodology used in trials must be able to handle these medical innovations. As such, research into methodology and early-phase trial designs is essential. Similarly, certain trial designs developed over two decades ago are only starting to see use in practice. It is important to try to minimise this lag as new designs are often superior in the way in which they make use of data. These will be two main focuses of my PhD and areas of research I wish to pursue and engage with throughout my career.