

UROP: Undergraduate Research Opportunities Programme

A Personal Perspective by Anna Humphreys

Anna had just completed the second year of her undergraduate degree in medicine, and embarked on an UROP research experience in the summer of 2014 under the supervision of **Dr Harvinder Chahal and Dr Alexander Miras** (Department of Medicine).

Placement Title: the long term effects of bariatric surgery on the microvascular complications of diabetes

At the end of my third year of my medical training I was undecided as to whether I wanted to be more of a clinical scientist or a practicing clinician. Up to this stage, in my career I had never truly experienced what it was like to be involved in research. I decided to thus embark on a research project in my final “long” summer as a medical student to give me a small taster of what an academic career could be like. Endocrinology was always an area that I had found fascinating – the complex feedback cycles that influence so many systems of our body. I did not know particularly where to start searching for a project so I contacted the head of endocrinology for the 1st and 2nd year medical course (Dr Niamh Martin) who then kindly passed my CV onwards to Dr Chahal and Dr Miras, two practicing endocrinologists. After a brief meeting they agreed to take me on as a summer student.

My UROP experience was spent in the field of bariatric surgery and the cross-over with endocrinology. Many studies have shown that after bariatric surgery (gastric bypasses, bands, sleeves), many patients’ diabetes have improved. My research was looking at whether some of the complications associated with diabetes – retinopathy (eyes) and nephropathy (kidneys) had also improved during this time for a cohort of about 80 patients who had bariatric surgery between 2006-2009. There is little information currently on the microvascular complications of diabetes following bariatric surgery and thus it was very exciting to be given to opportunity to get involved! I followed these patients before their surgery and five years afterwards. This was using the same patient database as a previous student who had looked purely at their diabetes, sugar levels and macrovascular complications. This would mean that we would truly be able to see what happens to these patients in all aspects of their diabetes.

The patients are now all managed on a day to day basis by their GPs in the community who monitor all of the aforementioned parameters. My job was to contact the GPs to collect this data, which proved to be quite challenging as some of the data was from a long time ago and slightly obscure. Sometimes I would find that the data simply did not exist which could be frustrating. I was however often able to overcome this challenges as I was given the opportunity to contact the patients directly and try and get them to come in and provide a urine sample. By far the majority of patients were very kind and highly willing to take part – I even managed to catch a patient who lives in Somerset on a day that she happened to be in London!

The project also gave me the opportunity to sit in on lectures by imminent endocrinology researchers, which further developed my interest in the field. This lead to a greater understanding of what the current areas of interest are, and how the treatments of medical conditions, are constantly improving.

The UROP experience gave me skills in data collection and analysis that can be hopefully be transferable to any field I decide to work in. I felt that I truly developed my inter-personnel skills, both in explaining to GPs and to patients the data I was collecting. These communication skills will be invaluable as a future practicing clinician. It has also given me a first hand experience of what it is like to run a study and how much of it relies on the human aspect, ie the patients themselves. I now have many more ideas on how to design a study, for example ideally making it a prospective study rather than retrospective. Other knowledge I gained was how the NHS itself is run, with all these patients being overall managed to such a degree by their GPs and how information is transferred between different parties.

Overall I would definitely recommend the UROP scheme for any student to get an idea of how medical research that we use every day (for example in NICE guideline formation) is undertaken and get have the opportunity to get involved themselves!