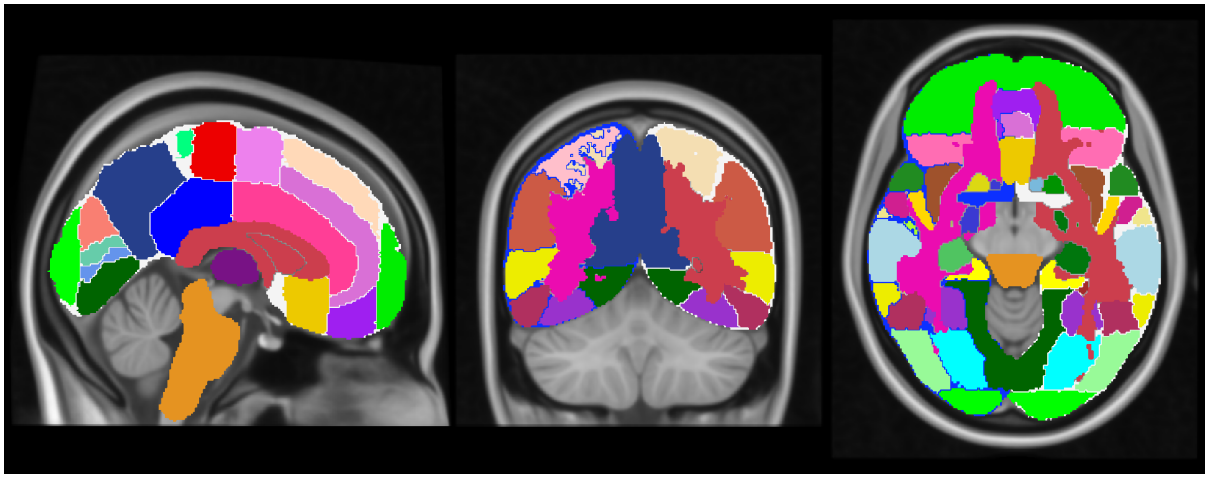
Visiting the Breathe Oxford Lab – A report by Rosanna Russell



On the 26th October, I was very lucky to spend the day with Dr Pattinson and his team at the Nuffield Department of Clinical Neurosciences where they are currently researching the link between our brains and our breathing.

Initially, I asked Dr Pattinson if I could visit his workplace because I was interested in what his job as a scientific researcher involved. However, after being sent a link to the Breathe Oxford website, I was also very excited to visit just because the area of research sounded so interesting and I was intrigued to learn more about neuroscience.

Within the first few hours of the day, I had experienced my first bike ride in about 5 years and a walk up a really long flight of stairs which was a very appropriate way to begin a morning with a team researching breathlessness. The building was massive and very impressive. I was amazed by the wide variety of different jobs that people had within it. It was satisfying to begin to understand how the different aspects of what these people were doing in their jobs were linked.

I began to realise this after being given the opportunity to attend a lecture on the structure of the neurone with one of the researchers, Lucy. Learning knowledge like this builds the foundations for researchers like Dr Pattinson and his team to develop understanding further into more specific areas of neuroscience. The progress that they make in the field will then evidently have clinical implications that may ultimately be used by doctors in hospitals, like the hospital below Breathe Oxford's office.

Something else that I learnt was the fact that the way that researchers try to decipher what is happening in the brain is by comparing it to an 'average brain'- scans of many brains, combined to produce an image of what an 'average brain' would look like. Sarah, who is another researcher for the project showed me some software that allows you to explore a model of the 'average brain'. Previously, I had never considered:

1- that we all have variation in our internal organs and
2- 2- how researchers attempt to find out which parts of the brain correspond with particular functions of the body.

It was interesting to see how scientific knowledge is applied in real life, instead of looking at text books where every organ is drawn in a uniform, idealistic way, when in reality, everybody is different.

Obviously, when I first heard about scientific research, I assumed there would be a lot of experimentation involved. Although I have been assured that the majority of time, scientific research involves sorting data and applying for grants, I was very lucky to witness Lucy conduct an experiment. A man was asked to breathe through equipment and to indicate when he thought there was a filter on the equipment (which would make his breathing harder) and when there was no filter on the equipment. The researcher had let me have a go earlier and the man who was experimented on was much better than I was at being aware of changes in his breathing!

In the afternoon, we attended a virtual reality conference, discussing the implications of VR in scientific research. This demonstrated to me how the ways scientific research can be conducted are constantly changing and updating.

I am very grateful that I was able to spend the day with Dr Pattinson and his team of researchers. I had lots of fun and it helped me to realise that you always have to be sceptical about scientific theories because otherwise they will never get closer to the truth, which is what research is all about.

Are you a Year 12 student and would like to know more about work experience at the NDCN? Contact Jacqueline Pumphrey at
communications@ndcn.ox.ac.uk