Huzefa Rupawala – Awarded May 2018
Statement of impact from MRC Flexible Supplement Fund award

"The MRC Flexible Supplement funding has been most beneficial for the me to undertake such valuable training"

The MRC Flexible supplement fund provided me with a fantastic opportunity to conduct a weeklong exceptional training placement in the Spires-Jones lab at the University of Edinburgh. This lab is at the forefront of Alzheimer's disease (AD) research, specifically synaptic dysfunction in neurodegenerative diseases that ties well into my PhD question investigating cysteine-string protein (CSP) alpha aggregation in Alzheimer's disease. Their lab uses a novel tool known as array tomography (AT) to explore the changes that occur at the level of synapses in disease. This would offer a dynamic approach at understanding CSPalpha aggregation in AD.

During this placement, I learnt the techniques to process both healthy and disease post-mortem human tissue, embedding tissues within resin and then understanding the cutting process using a diamond knife. I obtained 70nm thick tissue sections, which enable the identification of protein structures and arrangements at the synaptic level. I then conducted immunohistochemical analysis where I was able to probe these tissues with my antibodies specific for proteins of interest including CSPalpha in association with synaptophysin (presynapse marker) and 6E10 (amyloid plaque marker, a characteristic AD pathology). This experience provided access to knowledge and tools to learn how best to optimise antibodies, trouble shooting, improving my manual dexterity working with small samples and learning how to take tile scan images and analysing data appropriately.

The MRC Flexible Supplement funding has been most beneficial for the me to undertake such valuable training, Without which, I would have firstly not been able to forge such great networks, the opportunity to work in a world-class laboratory within the neurodegenerative disease field and above all learn and develop my skills that I can now incorporate within my own experiments.