

Café Scientifique Headingley

Monday 9th September 2019 at 7:30pm

A Journey to the Centre of the Cell: How electron microscopes are used in research

by Rebecca Thompson



Outline: Each cell in your body is a crowded chaotic environment, home to millions of individual proteins. Light microscopes have been used for hundreds of years to begin to understand the cells organisation into different compartments, but the individual protein machines that drive all the processes necessary for life cannot be seen using this type of microscope. The invention of electron microscopes in the 1930's opened up new avenues for imaging these tiny structures, but only recently has the technology enabled us to probe the structure of macromolecular machines in close to atomic detail. In this talk we will explore how electron microscopes work, how we turn the images into 3D models of our proteins of interest, and the ways in which this data is transforming our understanding of different areas of biology.

Rebecca Thompson works at the University of Leeds, managing the Asbury Biostructure Laboratory Electron Microscopy Facility, which houses state-of-the-art electron microscopes for studying life in molecular detail. Rebecca developed her interest in microscopy at a young age, when she enjoyed using her hand-held light microscope to inspect the dirt on her hair and bedroom carpet (much to her Mums delight!). This interest was developed in a professional sense during her PhD work at the University of Leeds, in the laboratories of Prof. Neil Ranson, Prof. Sheena Radford and Dr Eric Hewitt, where she explored the use of electron microscopy to study the interactions of misfolded proteins and viruses with the membranes of cells. Rebecca's research now focuses on developing ways to use electron microscopes to tackle a range of research questions, and the potential of combining different types of microscopy data.

Venue: The New Headingley Club, 56 St Michael's Rd., Leeds LS6 3BG

Time: Club opens at 7:00pm for drinks & the room at 7:30; talk begins promptly at 7:45pm

Entry: Donation please for room hire and expenses: **£3 at the door**



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