U3A Science and Technology Group
Meeting 13 February 2023
Women in Science

This meeting was based on an idea that Karen Tranter, the co-convenor of the S&T Group, had for a talk in 2023. Sadly, she died before she could fully develop her idea. However, Ian Reid picked up the challenge and brought together four speakers talking about four very different Women in Science.

Ian Reid started the session with a talk about Henrietta Lacks. She was not a scientist herself but unwittingly has had a large impact on medical science. This was due to samples of cancerous cells taken from her cervix in 1951, the year she died. They proved to be unusual in that they could be easily cultured and be kept alive far longer than cells normally could be. The cell line was named HeLa by George Gey (who took the cells) and started culturing them. Cells from these early cultures were distributed to researchers world-wide and formed the basis of medical research since. The HeLa cell line was one of the first "immortal" cell lines and it is still in regular use. In 1951 there was no requirement to obtain patient permission to take, keep, or use tissue samples, and it was not until 1975 that the Lack's family became aware of the HeLa cells. Since then the questions of ethics and informed consent have become much debated leading to strict requirements in many countries. Henrietta Lacks has been recognised posthumously through honours, statues, memorials, books and films.

Dorothy Hodgkin was the subject of Joy Roscoe. Hodgkin was born in 1910 in Cairo, but she lived with her grandparents in England from an early age – her parents working abroad for several months at a time. As a teenager, she was encouraged to develop her scientific interests and in 1928 entered Somerville College to study chemistry. She moved to Cambridge to research for a Ph. D. with John Bernal, a noted x-ray crystallographer. Her subsequent career was very much about the structure of biological molecules: pepsin, penicillin, vitamin B12 (for which she received a Nobel Prize), and insulin. The latter was a lifetime project, taking some 35 years as she and many others developed x-ray and computing technologies to enable large, complex biological molecules to be studied. She suffered from rheumatoid arthritis for much of her adult life and died in 1994.

A woman, hardly known outside her specialism of neuroscience, was the subject of Pete Redgrave. Ann Graybiel, MIT, first came to Pete's notice through her early work on the visual system in a cat's brain. But it was her work on the basal ganglia that has occupied most of her career and for which she has become very influential in the area. Her work has shown how actions are learnt and become habits, and how groups of actions get "chunked" together so that one does not have to consciously think about doing them. The basal ganglia is also involved in learning, memory, cognition and decision making and when it goes wrong conditions such as Parkinson's, Huntingdon's Disease, schizophrenia, addictions, OCD can result. As Pete put it, "She is a big fish in a big pool".

The final talk of the session was by Roy Tranter about the scientific life of Karen Tranter – typical of many women in science who are not the big names. As a teenager she was encouraged in her scientific interests both at home and at school, and this led her to taking an Honours degree in Botany at Newcastle University and then research for her Ph.D. in microbiology, also at Newcastle. Although the experimental work was completed in 2 years, the writing up was not completed until 3 years later – marriage, 2 children, a move to Copenhagen and then to Stirling intervened!. While in Scotland she worked as a lab assistant at the local secondary school and as a demonstrator in Biochemistry at the University of Stirling. The move to Barnard Castle in 1980 brought another upheaval. She did 6 years as a supply teacher at secondary school level in Darlington (her least favourite job!) but her favourite was 17 years as a Technical Guide at Barnard Castle Glaxo factory. Here she saw in detail, and learnt about, all the manufacturing processes at the site, and then took visitors to the site, from primary school pupils to company directors from all over the world, on technical tours explaining what was going on. Her interests in science were wide ranging – she was a regular attendee at the Geology, Historic Environment, Archaeology and Needlecraft groups of the U3A as well as being joint convener of the Science and Technology Group. She was very much a scientist and natural philosopher!