

The 2019 U3A Science Network meeting

The U3A Science Network chose Conference Aston as the venue for its 16th annual meeting. The Aston Triangle is ideally situated, close to Birmingham's three main railway stations and less than 2 miles from the M6. In addition to a programme packed with variety and interest, delegates were offered the choice of student or hotel accommodation.

After Mike Hollingsworth had welcomed the 84 delegates to the meeting, (the largest number ever to attend, including 9 day-delegates from U3As in the Birmingham area), the programme got under way with visits to Research labs to look at *Socially Assistive Robots and Intelligent Systems* as well as an interactive session on the dangers of *Texting and Walking*. Roger McFadden talked about the latest developments in the very intricate area of Type 2 Diabetes and the *Anti-Type 2 Diabetic drugs* developed to cope with the increase in the disease.

Tuesday started with Jill Gigg bringing forward her talk about the *Periodic table* because the speaker had been taken ill. She showed how it had developed from Mendeleev and his chart, with Lavoisier, Proust and Dalton at the start to the use of two letters to indicate each element. More scientists filled gaps in the chart and new items are still being added today!

John Marriage talked about *Liquid Amps* or, as we soon discovered, Electroplating which included Chrome plating, Electro-forming and Anodising. He introduced batteries as the reverse of electroplating so we heard about Lithium Manganese cells for watches, Zinc-Air batteries for hearing aids and pagers and Thermal batteries for missiles.

Two groups of delegates visited European Bioenergy Research Institute (EBRI) whilst others participated in a paper rolling exercise to make a stool, which they showed at the Wednesday demonstration evening. The final lab session was on *Cybersecurity*, unfortunately treated at a rather basic level for our members.

Fred Tempoe, in *AI, Myth, Reality & Fantasy* showed that computers with intelligence can enact goal directed behaviour which helps humans avoid drudgery but it could also make us dumb and dependent.

In *The Science of Frankenstein*, Vernon Griffiths led us, via science prior to Mary Shelley's book, to understand where Mary Shelley's inspiration came from and asked us not to forget the Electric Kiss which put us in the mood for the discovery of 10 gases including an amusing look at Laughing Gas.

Wednesday started with a totally engaging talk from Professors Alun Vaughan and Averil McDonald entitled "*Are We Ready For Electric Cars?*" They put things in proportion to show how large the problem is and how impossible some ideas are to implement on a global scale. In the arena of UK electricity, we would soon run out of capacity if everyone migrated to battery driven vehicles. Hydrogen, offered as an alternative for transport with fuel cells in vehicles from cars to trucks and buses, could be derived from Methane and a residue made into house bricks. Equally Hydrogen could be made from Cadbury's waste products. They mentioned David McKay's Sustainable energy book pointed out that governments have apparently not read to the end, thus missing the point that we are nowhere near sustainable today.

Two workshops followed this amazing talk: Mike Hollingsworth, Subject Adviser for Science, led one, followed by a lively debate, on the whys and wherefores of U3A Sci-Tech groups. Michaela

Moody led a second on how individuals could help to reduce negative impacts on the environment. The results from each workshop have been written up and sent to delegates.

Frederick Tempoe gave a second talk on AI and the Moral Dimension. AI is being improved at a fast rate and he warned we must balance fairness with sensitivity.

Philip Cheung started his lecture with a video of a man playing a flute with a clarinet and a clarinet with a flute mouthpiece, with the clarinet sounding like a flute and vice versa. He delved into realms of fifths and thirds in music which some found fascinating, but difficult for some of us to understand.

Risk & Perception by Susan Slater was fascinating, from defining the probability of death as a Mort to substances like Roundup having been banned but now replaced by a very toxic copper sulphate.

Perception included the use of weasel words, often used in the media to make articles more dramatic. So beware of *crisis*, *scourge*, *amid*, *surely* and *scientists*. In the press, we have been advised for more than 10 years that we have just days to save the NHS by writers picking the appropriate statistics.

Barath Rajan's *Mysterious Water* showed us that after centuries of inquiries, there was still no complete explanation of the properties of water. He showed the many anomalies of water: its density in a capillary tube is higher than normal and is hard to freeze. Does water have memory or not?

Roger McFadden then told us about Monoclonal Antibodies (MAB), the anti-cancer drugs that can be targeted to specific cancers by finding particular proteins. So different MABs have to be made to target different types of cancer.

The last talk was from Mike Trevethick on *Epigenetics: 'Why doesn't your nose grow an ear?'* and led into ways of switching genetic changes on and off. Bees make use of this to make Queen bees. The use of Folic acid reduces Spina Bifida and is an epigenetic change. There is some control of cancer by using Ginger, Soya, Broccoli, Garlic, Citrus fruit and Egg Yolks. So the moral is Eat Your Veggies?

Science Meeting 2020

Judging by the thanks received by the Organising team, the meeting was very successful and it was great to be told 'See you next year!' as delegates left after lunch.

We'll be returning to Aston from **10 to 13 August** next year ready for another enticing programme – we have volunteers for many of the talks and 2 interesting venues to visit.

Wanted: more new *Speakers* and more *Demonstrations*

to inspire our many Science and Technology groups. So please visit the Science Network website or send an email to Programme@u3asciencenetwork.uk with details of the Talks or Demonstrations you can offer.