

LIYSF 2024 – Report Aoibheann Maher

Science encourages the coexistence of intelligence and creativity, curiosity and persistence, and determination and exploration amongst those who are willing to dedicate their time to it. I, like so many other young scientists, am driven by the potential in advancement and discovery within the unrestricted boundaries of the scientific world. We all have an innate yearning to understand what is not yet understood. Through science, I plan on not only learning to comprehend what we know of the world today, but progress my thinking, and develop new insights as to what we could understand in the future.

Having such ambition for a future in the sector of scientific research and discovery can be very daunting for young students, as we learn about the revolutionary breakthroughs of the past, and ongoing research of the future being accomplished by exemplary scientific minds. It is too easy to feel insufficient in such a competitive and fast-changing world. Fortunately, I had the opportunity to attend the 65th London International Youth Science Forum (LIYSF) this year, and it genuinely changed my perception on my potential and future as a person of science.

LIYSF allowed me to meet a variety of people with different backgrounds who shared my passion for science. There were 420 students attending the forum from a total of 82 different countries and territories from all seven continents. The mix of nationalities, cultures and young minds was extraordinary, as our different backgrounds meant that we all had diverse approaches and attitudes towards the numerous disciplines of science. There was an assortment of experience, research and prospects amongst all the students, where we found that our differences were as constructive and pragmatic to each other as our similarities. Our common aspirations for a future in science allowed us to learn with and from each other, developing and expanding our ways of thinking, as well as how we approach and solve problems. We attended various lectures and scientific visits together, which encouraged us to both mix with each other and experience new things together.

Our opening ceremony and principal lecture introduced us to the forum in a captivating way, leading with Nobel Prize recipient Sir. Gregory Winter speaking to us about his research in the technologies in antibody medicines. This was one of my favourite talks, as even though I am studying chemical and pharmaceutical science, I do maintain an interest in the biological aspect of the development of pharmaceuticals, which Sir. Gregory Winter, who is a chemist himself, had spoken about. I felt even more seen as a scientist when a later speaker, Professor Kelly Chibale, spoke about how he believes the future of chemistry will be how chemistry can be used to help solve biological problems. Throughout the forum, I found that there was a large emphasis put on how

almost all research projects will be multi-disciplinary, and from listening to the study and careers of many of the speakers, cross-disciplinary study was common. This very much suits me as someone who although would like to focus on the chemical approach to things, has a piqued interest in different aspects of science.

I was fortunate to be able to attend lectures on a wide range of topics, such as civil engineering, robotics, the engineering and applications of stem cells, as well as forensic science and the future of AI. This assortment of topics created a rich and illuminating learning experience for everyone, where there was an intriguing mixture of subjects that we both had an interest in and had never heard of. A particular presentation that stood out to me took place at the Milner Therapeutics Institute in Cambridge, where a team shared their research on preventing and treating age-related diseases. Their discussion enlightened me to the fact that there is more than one way to perceive a problem. Where most people would see the process of ageing and its consequential diseases as inevitable, these scientists saw ageing itself as a disease, and were trying to cure its degenerative effects on the human body. Not only does this alternative view have the potential to extend the life expectancy of humans, but more importantly improve our quality of life in later years. Seeing how these scientists were able to step back and recognize a new pathway to explore the process of ageing is inspirational as it showed me that science is not linear – there are multiple ways to look at a problem and find a solution.

A specialist lecture that stood out to me was presented to us by Aranza Meza Dorantes, an aspirational woman who is conducting research in the rare disease spinocerebellar ataxia type 7, which is found predominantly in Mexico, usually in specific areas and communities. She told us about how she saw this problem effecting and negatively impacting the people around her, and she decided to be a part of the solution. I happen to have a niche personal interest in the topic of rare genetic diseases that are overlooked by the majority and was truly influenced and motivated by her work. Dorantes is also a former LIYSF student, and it was amazing to see how students who attended the same forum as I worked their way to conducting research in their chosen field and topic. I even had the opportunity to speak to her after the lecture, where she told me about how there is a variety of scientists on their research team, including chemists and biochemists.

LIYSF was an experience that has undoubtedly impacted my drive into the scientific world. Not only that, but a huge aspect of the forum was also having the opportunity to meet people and form life-long friendships. We got to experience a variety of lectures, scientific visits, as well as excursions to Stonehenge, musicals, Oxford and Cambridge together. A particularly memorable event was the culture and talent night where my friends and other students showed us pieces of their cultures through songs, dances and traditional displays. I am, and always will be grateful to have been given this

opportunity – it is an experience I will never forget and will always take with me through my studies, career and life.