Report by Kattamreddy Ananth Rupesh, University of Eastern Finland

I had the privilege of attending the prestigious BTS Annual Congress 2024, held at Spaces at the Spine, Liverpool, from 15-17 April. I am grateful to the society for awarding me a bursary. The academic event brimmed with scintillating discussions and interactive sessions. Most symposia delved deep into the cutting-edge developments within their respective domains.

The symposium on "Risk Assessment of Psychedelic Drugs" was particularly unique and enlightening for me, as I was previously unaware of the extensive research being conducted to repurpose psychedelics for therapeutic purposes. All the speakers emphasized the need to use psychedelics for treatment-resistant depression, combined with behaviour therapy. Prof. Jo Neill delivered the first talk on the ongoing research in psychopharmacology and the growing acceptance of psychedelics in psychiatric practice. She also highlighted the potential adverse effects, such as cardiac fibrosis, valvulopathy, hallucinogen persistent perception disorder, and concerns about the chronic effects of microdosing of substances like psilocybin.

This session was followed by two talks on regulatory concerns of psychedelic medication, exhorting the imperative to generate extensive non-clinical /in vitro/ in vivo data through robustly designed toxicology studies. The speakers opined that historical clinical use data alone is insufficient to meet regulatory standards. Moreover, they highlighted the hurdles in researching and marketing these drugs due to their classification as controlled substances under various laws in different countries. Advocates for psychedelics are particularly focused on bridging the gap between obtaining marketing licenses and making these drugs available to patients under clinician supervision.

The last talk in this symposium was delivered by Prof. Paul Dargan from Guy's Hospital in London. I was very excited to hear his lecture because I have always read his scientific papers with great interest, and he is a renowned figure in the field of clinical toxicology. Prof. Dargan's talk focused on the acute and chronic toxicity of ketamine. This topic is particularly important as ketamine is being extensively used worldwide to treat uncontrolled depression alongside selective serotonin reuptake inhibitors

(SSRIs). Prof. Dargan presented existing clinical data from recreational abusers to predict potential ketamine-related toxic effects if it is widely authorized for clinical use. He discussed about the adverse effects such as unpleasant hallucinations, bladder toxicity leading to contracture, and chronic effects like atrophy of the frontal and prefrontal cortex, hepatotoxicity, obstructive liver disease, and portal fibrosis. His insights provide a valuable perspective for designing toxicity studies with appropriate endpoints, benefiting basic science toxicologists.

Another symposium that caught my attention focused on medicines safety, particularly Prof. Munir Pirmohamed's talk on the pharmacogenomics of adverse drug reactions. He showcased the successful translation of research into a clinical test panel, exemplifying the bench-to-bedside approach in preventing adverse drug reactions. Prof. Pirmohamed's vision to integrate and expand this project through the UK public health system demonstrates that world-class diagnostic services can be accessible to everyone. He also mentioned the cost-effectiveness of investing in pharmacogenomics, emphasizing that conducting these tests is more economical than managing adverse reactions at both individual and population levels.

My report would be incomplete without mentioning the Plenary Lecture by Prof. Frank Kelly on Air Pollution and Public Health. The research conducted by his team on air quality in Oxford Street, London, was both awe-inspiring and eye-opening. It demonstrated the significant impacts of air pollution on human lungs through a study involving volunteers who commuted through this heavily polluted area. The way his team collaborated with Swedish researchers, for using a controlled environment to study the effects of air pollution, stressed the necessity of stringent scientific methodologies to convince people to accept glaring truths.

During the BTS Annual Congress 2024, I had the opportunity to present my research on poisoned patients as potential organ donors as a poster communication. This event provided an excellent platform for networking with other clinical toxicologists and researchers. Notably, I had the chance to interact with Associate Professor Darren Roberts from Australia, the chief of the Australian Poisons Information Centre.

Professor Roberts delivered the ASCEPT Invitation Lecture, titled "When Basic Science Informs Clinical Toxicology Practice," which I found particularly interesting. His team's approach to addressing the issue of agrochemical-related deaths in Sri Lanka, by advising a ban on high LD50 agrochemicals, significantly reduced the number of suicides by limiting access to these substances. This method struck me as a model for India, particularly regarding the removal of substances like paraquat from the market which are being highly abused for self-harm. Overall, his talk underscored the importance of public advocacy for toxicologists. A clinical toxicologist has a professional responsibility not only to their patients but also to society as a whole.

The Tox Quiz for early-stage toxicologists was immensely enjoyable, fostering camaraderie and encouraging interaction among participants. Engaging in the quiz has inspired me to add visiting the Alnwick Poison Garden to my bucket list—though I'll be sure to admire its wonders from a safe distance!

Furthermore, with Dr. Phil Botham as the incoming BTS president, the integration of Equality, Diversity, and Inclusion into the society gained prominence. Inspired by his leadership, I endeavoured to promote these values among my peers back home, recognizing their essential role in fostering a more inclusive and equitable society.

Last but not least, the program was organized smoothly, with all sessions running on time. Participants enriched the intellectual conversations during the Q&A following each session. The refreshment, dining, and drink breaks provided valuable opportunities for networking and connecting with like-minded individuals who believe that science is a mission contributing to meaningful change for mankind.

Although my association with the BTS has been brief, I am glad for the society's generous support in facilitating my travel and attendance at the congress. Moreover, the warm company among fellow attendees made me feel right at home.

When I arrived in Liverpool with my bag, I saw a University of Liverpool billboard that read, “Welcome to the university with heart in the city with soul.” As I returned from the venue, my bag was loaded with motivation to work more. I was filled with the joy of learning new things, forging new friendships, and finding new avenues to expand my research base. It felt as if, when the student is ready, the master appears.