

BTS-ASPET Guest Lectureship Award 2025 – Dr Joshua Gardner, University of Liverpool

As an Early-Career Researcher aiming to establish my own research niche and build independent collaborations, receiving the inaugural BTS-ASPET Lecture Award provided me with an invaluable experience, both personally and professionally. As a member of the BTS, I was extremely grateful to receive the ASPET Lecture Award which provided the opportunity to attend ASPET 2025 in Portland to deliver the BTS Guest Lecture as part of the Toxicology Division Symposium. Additionally, this enabled me to extend my travels to visit universities and institutions in the US to deliver additional seminars.

In the week prior to the ASPET Annual Meeting, I was fortunate enough to travel to Washington DC to spend a day at the US Food and Drug Administration (FDA) Headquarters on the White Oak campus in Silver Spring. Here, I visited the Centre for Drug Evaluation and Research (CDER) which primarily functions to ensure that safe and effective drugs are available for the



public. At CDER, I was hosted by Dr Michael Norcross and Dr Montserrat Puig whose research focuses on the underlying immunological mechanisms of drug hypersensitivity reactions to abacavir and flucloxacillin through the development of HLA-B*57:01 transgenic mouse models. I delivered a seminar to the Immunology Centre of Excellence & Integrative Immunogenicity Working Group (IIWG) outlining current advances in the field of drug allergy. Throughout the day I attended several meetings to discuss current and future research projects relevant to the field with members of the IIWG. Furthermore, I was given the opportunity to deliver an additional seminar to members of the Centre for Biologics Evaluation and Research (CBER) and discuss potential collaborative efforts within upcoming funding opportunities that involve the immunogenicity of human adenoviral vectors and Adeno-associated viruses (AAV).

I then travelled to Portland (Oregon) to attend the ASPET 2025 meeting, which took place between 2-6th April. Scientific themes of the meeting focused on key emerging trends in the fields of pharmacology and drug discovery. This included sessions highlighting current research into GLP-1 receptor antagonists, the repurposing of generic drugs and the applications of artificial intelligence for the next generation of therapeutics research. A personal highlight was hearing about new research programmes outlining how clinical pharmacology approaches are being utilised to optimise the treatment of patients in the real world, chaired and led by Dr Gareth Veal. The meeting also provided several opportunities to network with a broad range of ASPET members, including an off-site Wellcome Reception, daily poster mixer sessions and ASPET Divisional events. I attended the DDD/TOX/TCP Joint



Division Mixer, during which I was able to discuss science and network with junior and senior researchers. On Sunday, I participated in the Career Awards in Toxicology session chaired by Dr Elaine Leslie and delivered the ASPET-BTS Guest Lecture. This session was dedicated to the recognition of Toxicology Awardees, such as Dr Lawrence Lash of Wayne State University who received the Career Award in Toxicology. My lecture was titled “Beyond HLA: Exploring the molecular mechanisms underpinning drug hypersensitivity reactions” and discussed my research in the

field of drug allergy, outlining how HLA genotype is but 1 predisposing factor during the development of drug hypersensitivity amongst additional factors of susceptibility such and cellular metabolism and the inflammatory microenvironment.

Following the ASPET meeting, I travelled to Nashville (Tennessee) to visit Professor Elizabeth Phillips at Vanderbilt University. Professor Phillips is the John Oates Chair of Clinical Research at Vanderbilt University Medical Centre and is a specialist in infectious diseases, clinical Pharmacology and drug Safety. Here, I was invited to give a seminar as part of the Centre for Drug Safety and Immunology (CDSI), seminar series which aims to create a platform for basic scientists and clinicians to discuss cutting-edge research that can significantly impact patient care. The CDSI seminar was held on-site and simultaneously streamed online, allowing participation from multiple external collaborators and team members based at the Institute for Immunology and Infectious Diseases at



Murdoch University. Additionally, I participated in several meetings throughout the day with Professor Phillips and her team, who have established a research and clinical program in drug hypersensitivity. This program specifically focuses on the tissue specificity, genetic basis and immunopathogenesis of severe T-cell mediated adverse drug reactions such as Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis and drug reaction with eosinophilia and systemic symptoms.

Overall, the BTS-ASPET Lecture Award was an incredibly rewarding experience that has significantly contributed to my development as an independent researcher. I’m grateful to have been afforded this opportunity to engage with leading scientists, share my research on an international platform, and build new collaborations. I would like to sincerely thank both Professor Ian Copple (BTS) and Dr. Cheryl Rockwell (ASPET) for establishing and supporting this fantastic initiative for Early-Career Researchers.