



B&B CLUSTER SEMINAR

Wed 24 June 11:00-12:00
School of Engineering A4.01



LINDA WANIKA

Leveraging Mechanistic Modelling
to offer insights in Rare Diseases

LAUREN KETTERIDGE

Computational Models of
Complex Blast Trauma



JAKE BROOKS

Shedding light on
metals in the brain



LINDA WANIKA

Leveraging Mechanistic Modelling to offer insights in Rare Diseases

TALK

Rare diseases are typically defined as diseases which impact less than 0.5% of the population. Although the severity range can differ among diseases, the diagnosis, monitoring and treatment options are often limited further impacting the patient's health, well-being and overall quality of life. Juvenile Huntington's Disease is a rare progressive neurodegenerative disease with no standardised treatment options for paediatrics. This seminar will cover how mechanistic modelling combined with sparse adult data is used to design a dosing regimen for the treatment of Juvenile Huntington's Disease.

BIOGRAPHY

Linda is a Post-Doc interested in health research who is based in the School of Engineering. As well as a PhD in Engineering, she also holds a BSc in Pharmacology. She is currently part of the Horizon Europe ERAMET project which is an Ecosystem for Rapid Adoption of Modelling and Simulation Methods to Address Regulatory Needs in the Development of Orphan and Paediatric Medicines. Her role is to build a framework to assess the credibility of models which are designed to aid in the development of orphan and paediatric medicines. Outside of her Post-doctoral role, Linda is also known within the University as an associate fellow of the IAS, a co-lead for the Health Spotlight, a member of the BSREC ethics committee and the B&B researcher's group co-founder.



LAUREN KETTERIDGE

Computational Models of Complex Blast Trauma

TALK

Depending on the mechanism of injury and specific tissues affected, blast exposure can produce a range of distinct injury patterns. In a majority of cases, however, the blast-exposed casualty does not present with a single distinct injury - instead, they present with several overlapping injury patterns. When taken together, these injuries form a complex syndrome, where survivability and response to treatment are likely to differ when compared to those with the component isolated injuries. This seminar will provide an overview of the latest work arising from Lauren's PhD, using computational modelling to explore these unique injury profiles.

BIOGRAPHY

Lauren Ketteridge is a clinical physiologist and postgraduate researcher whose work focuses on advancing trauma care and resuscitation in austere environments. Currently pursuing a PhD in Translational Bioscience at the University of Warwick, she specialises in computational modelling to investigate pharmacological and ventilatory strategies for treating complex blast injuries. Lauren holds a First-Class BSc (Hons) in Digital Healthcare Science and her interdisciplinary research is supported by ongoing work as a prehospital clinician.



JAKE BROOKS

Shedding light on metals
in the brain

TALK

Normal functioning of the human brain is dependent on adequate regulation of essential metal nutrients. However, it is also highly sensitive to metal-mediated toxicity, linked to various neurodegenerative disorders. Exposure to environmental metal sources can also stimulate toxicity. Analysis of trace metals and their local environment in biological samples presents a host of analytical challenges, requiring the development and application of advanced chemical imaging approaches. Better understanding the role of metals in health and disease is key to informing improved metal-targeting therapeutics, as well as policy concerning metal exposure.

BIOGRAPHY

As an assistant professor and Race Against Dementia Fellow, Jake's research interests are in chemical imaging and in developing correlative workflows to enable more detailed studies of metals in health and disease, from the intracellular to whole system level. Jake has a particular interest in metal dysregulation in neurodegenerative disorders such as Alzheimer's and Parkinson's disease, and in links between neurodegeneration and air pollution exposure. Jake also currently serves on the early career board for ACS Chemical and Biomedical Imaging.