

Biography Judith Breuer

Professor Judith Breuer is Co-Director of the Division of Infection and Immunity, Head of Infection at UCL and Clinical lead for Virology at Great Ormond Street Hospital for Children. Her research interests include the development of high throughput pathogen sequencing directly from clinical material for the analysis of pathogen evolution identification of pathogen genetic determinants of clinical disease. Applying these methods to varicella zoster virus and its vaccine, she has generated insights into VZV evolution and transmission. Allied to this, Professor Breuer has developed models which have elucidated aspects of VZV natural history and pathogenesis. Professor Breuer's use of combined host and viral transcriptomics uncovered the requirement of VZV replication for keratinocyte differentiation and identified new epidermal signalling pathways associated with replication not only of VZV but other skin viruses. The application of enriched transcriptomics to early post mortem human trigeminal ganglia led her group to discover the canonical VZV latency transcript. Professor Breuer has applied different genomic approaches to the diagnosis of infections. In particular she has developed metagenomic methods for pathogen discovery in patients with undiagnosed infections of the brain, widening this recently to other samples. Pathogen genome sequencing directly from clinical material is now used routinely in Professor Breuer's laboratory for the diagnosis of herpesviruses, adenovirus and influenza antiviral resistance testing and to investigate nosocomial transmission of viruses. Professor Breuer runs a national VZV vaccine identification reference service. She chairs the Joint Committee on Vaccines and Immunisation Human papillomavirus and Varicella zoster vaccine subcommittees.