

**Recent Achievements**

*genomic investigations of acute hepatitis of unknown aetiology in children*

Application of the metagenomics laboratory pipeline and bioinformatic analysis by Dr Morfopoulou and Sarah Buddle uncovered adeno-associated virus (AAV2) as the most abundant species present in the livers and blood of children with hepatitis. Dr Torres Montaguth led nanopore sequencing to confirm the findings and to understand the pathogenesis. Our data suggest an immune mediated process which has been triggered by the abnormal accumulation of AAV2 DNA in the liver. The findings have led to a paper in Nature (in press).

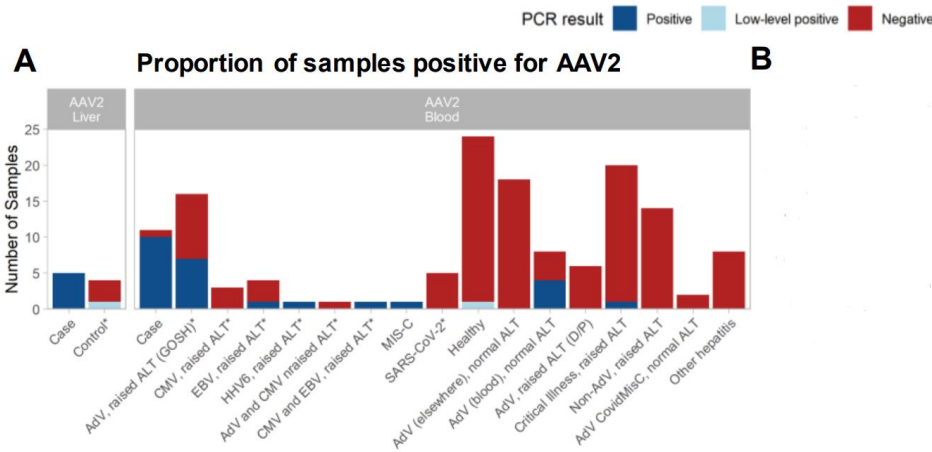


Fig A. Proportion of PCR positive and negative results for A) AAV2

*Absence of detectable monkeypox virus DNA in 11,000 English blood donations during the 2022 outbreak*

The first monkeypox virus outbreak outside the African continent was first noted in England in May 2022. It was linked to men who have sex with men. Due to its potential to transmit via blood transfusion, we decided to develop a blood donor screening study to assess this risk further. Over 10,000 samples were screened in minipools of 24 for monkeypox virus DNA within three weeks of obtaining the samples; no positive minipools were identified by two different PCR methods. In addition to the reassurance provided by these negative results, minipools testing will also allow a rapid strategy for population-based screening for other emerging pathogens in the future and provides a vital resource for pandemic preparedness. This work has just been published in Transfusion. <http://doi.org/10.1111/trf.17266>

**Recent Events**

**3<sup>rd</sup> ESCV workshop on Next Generation Sequencing (NGS)**

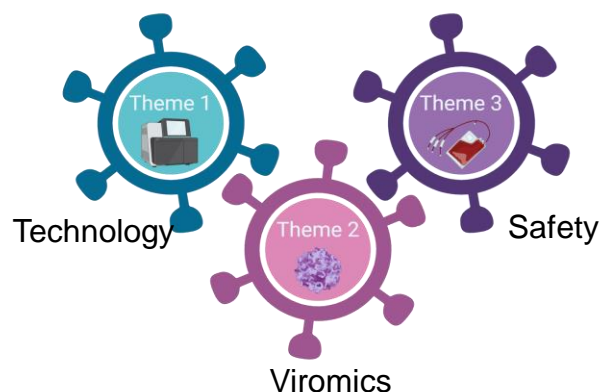
Our three PhD students were awarded a grant to attend the 3<sup>rd</sup> ESCV workshop on NGS. Saskia Proud, Sarah Buddle and Michael Fu described it as an insightful experience.

Saskia found talks on quality control and recommendations for laboratory and analysis procedures informative and provided insight into how to ensure data quality and validity.

Sarah appreciated a wide range of perspectives on clinical metagenomics and emerging diseases. She found it particularly interesting to hear about Professor Jonathan Edgeworth's work.

Michael enjoyed listening to the variety of talks ranging from the principles of metagenomics to the use of metagenomics in clinical practice.

There was plenty of opportunity to network with scientists from countries like Slovenia, Denmark, and Italy, not to mention the food!



## A Conversation With...

### *What motivates you about BTRU-GEMS?*

It is an excellent opportunity to work with our partners in the blood services (NHS Blood and Transplant) and UKHSA on a range of transfusion microbiology. In the programme, we will be exploring the impact of new genomic technologies for donation testing and patient monitoring, investigating defined pathogens associated with previous transfusion associated transmissions, such as hepatitis B and hepatitis E viruses and wider surveillance-related work on emerging pathogens such as West Nile virus that may be spreading into the UK through climate change. The use of new technologies for pandemic preparedness is a key priority for future blood safety. Work in this programme has real potential translational benefit to blood and transplant safety and public health. It provides an important opportunity for University-based research and development activities to be translated into real-world benefit in a wide range of health-related areas.

### *If you travel anywhere, where/why?*

I think I would like to accompany Herodotus on his travels around Asia Minor, Ancient Greece and Egypt in the 5th century BC (if I'm allowed to time travel as well). How a functioning Ancient Egypt must have been before getting trashed by Alexander's army and by the Romans in later centuries. Altogether a chance to glimpse a quite different world in transition, and definitely a most interesting person to chat to on those sea long journeys!

If allowed, perhaps another journey to end of the Neolithic in Southern England, and the final stages of the building of Stonehenge and Avebury, just before the destruction and genocide unleashed by Beaker warriors at the start of the Bronze Age - definitely a time to head back home to the 21st century.

### *Who is or was your role model in research?*

Many blood services in Europe, North America and worldwide have excellent track records in research and development, often taking highly proactive measures to respond to threats to the microbiological safety of blood and transplant. From such a long list with so much pioneering and effective research and development work done, it is perhaps a little unfair to mention specific organisations. However, I will make the exception of Sanquin in the Netherlands, who are a true role model for a blood services, where excellence in their overall organization and track record in safety over many decades is matched by their integration of expert reference laboratories and wider academic research and development activities "under one roof".



**Peter Simmonds**  
Unit Director

## To Look Forward To...

**PPIE Coordinator/Lead:** interviews to take place in March; the PPIE strategy plan has been written, approved, and published on our website (QR code on the right!)

**Annual Meeting:** BTRU GEMS 1<sup>st</sup> Annual Meeting on Monday/Tuesday 26<sup>th</sup>/27<sup>th</sup> June at New Hall Hotel & Spa, Sutton Coldfield, Birmingham



@BTRU\_GEMS

QR code to our website:

