# Recent Achievements: 'game-changing' innovation

## NEW METHOD FOR DETECTION OF VIRAL INFECTIONS USING NANOPORE SEQUENCING

Oscar Torres and the team from theme II have developed **a faster and more sensitive way** to detect viruses in clinical samples. The new method combines a process called hybridisation capture, which helps separate out and target viral genetic material, with Oxford Nanopore sequencing, a technology that reads long strands of DNA and RNA.

What makes this method stand out is that it **simplifies the usual laboratory steps, removing the need for a time-consuming stage** called ligation (where we join two ends of DNA molecules together) **while increasing sensitivity**. This means it can be done more quickly and with fewer resources, while still accurately identifying which virus is present, even if only a tiny amount is in the sample.

This technique is especially useful for identifying hard-to-diagnose infections and could play a valuable role in responding to emerging outbreaks or complex clinical cases. By making metagenomic testing more efficient, the research team hopes it will become more widely used in hospitals and public health labs to guide diagnosis and treatment.

👓 Read more in the scientific article (pre-print) here: Nanopore-based hybridization capture approaches for targeted viral metagenomics and whole-genome sequencing

> "We are developing methods to help us quickly and sensitively pin-point pathogens, to enable timely and precise patient care"

**Dr Oscar Torres**

## LISTEN NOW: IS THERE A BETTER WAY TO SCREEN BLOOD?

This is the big question Theme I's Dr Rich Mayne is answering in this month's Oxford Sparks podcast, which focuses on BTRU-GEMS research
**listen here**

## NEW METAGENOMIC DIAGNOSTIC SERVICE LAUNCHES WITH BBC SPOTLIGHT

This Spring saw the launch of an exciting new metagenomic diagnostic service. Judy Breuer (theme II) shared the remarkable story of how the test saved a young woman's eyesight after she contracted a rare infection while swimming in the Amazon, in an interview on *BBC Radio 4's Today* programme. Julianne Brown, who leads the clinical team, also appeared on the *BBC Breakfast* sofa to discuss the breakthrough.

👓 Read more in the BBC article linked here: Metagenomics test saves woman's sight after mystery infection

## COLLABORATION LAUNCHED TO STREAMLINE NHSBT'S ADOPTION OF BTRU-GEMS RESEARCH

We're excited to share news of a new partnership between NHS Blood and Transplant (NHSBT) and the BTRU-GEMS (Blood and Transplant Research Unit in Genomics to Enhance Microbial Screening).


Implementation working group members meeting in the Spring sunshine at NHSBT Filton, March 2025

This collaboration is all about bringing the latest research and technology into everyday NHSBT work. Led by Aman Dhesi (Associate Director of Technical and Scientific Development) from NHSBT and Professor Peter Simmonds from BTRU-GEMS, the team is working on several promising projects.

- One major focus is testing Oxford Nanopore Technology (ONT) as a new way to detect and identify bacteria species. This method could work alongside or even replace older techniques like culturing or sending samples to external labs, with early efforts looking at bacteria found in the environment.
- Another important project involves using existing PCR-based testing platforms to rapidly set up emergency screening of blood donors for new and emerging pathogens. This approach will allows NHSBT to respond to a future pandemic emergency situation in a matter of days and thereby protect the safety of the blood supply. The partnership will use valuable sample and data resources built by BTRU-GEMS for this pioneering and unique work in pandemic preparedness

Each implementation approach will be discussed with BTRU-GEMS Public and Patient Involvement members and feedback brought forward to improve translation.

## BTRU RESEARCHERS SHARPEN THEIR WRITING SKILLS

BTRU-GEMS researchers and public contributors have joined other BTRUs to shine a spotlight on accessible research, by attending a Plain-Language Summary Training and taking part in a Competition to explain BTRU research via Plain English summaries. These summaries were entered into a competition.

You can read the full blog here to find out who won, what their projects were about and more information on this project! Thank you to Jaid, Kaitlin and Michael for taking part and Saj and Steve for providing their feedback. Lastly, thanks to all who voted in the competition!

Images: People drawing together: Copyright © University of Oxford Images / Ian Wallman -- All rights reserved.

## TO LOOK FORWARD TO ...

Images: Kevin Gordon / *Friends Meeting House, Euston from Endsleigh Gardens, London WC1* / CC BY-SA 2.0

**OCTOBER 6–7th**
**BTRU-GEMS ANNUAL MEETING**
**FRIENDS HOUSE,**
**EUSTON, LONDON**

**Look out for an invitation, programme and more details soon!**

## CAN YOU HELP US?

Your feedback will help us build a better website.

Take 3 minutes to help us improve here.