Breaking news:
BTRU-GEMS secures 2-year NIHR funding extension

We are delighted to share that NIHR has awarded BTRU-GEMS funding for a further two years, from April 2027 to March 2029!
The extension gives us an exciting opportunity to build on the work of GEMS so far, while developing new areas of research & bringing new expertise into the team.

BUILDING ON WHAT WE'VE ACHIEVED...

37+
publications
Sharing findings from across BTRU-GEMS.

~9,000
CODONET samples collected
Helping track emerging infections & risks to blood safety.

3
PhDs completed
With more students on track to graduate in 2026/27.

24
public involvement projects
Bringing public contributors & researchers together to help shape our work.

Find out more about CODONET: [CODONET project — Experimental Medicine Division]

"The new award will allow us to continue with the exciting work on CODONET, the development of meta- genomics, genomic methods for detection of bacterial contamination & introducing HHV8 screening."

- Professor Judy Breuer
Unit Director

People at the heart

PPIE & co-production will continue across the programme, bringing researchers & public contributors together & helping to keep our work focused on what matters most to patients & the public.

Building on progress, together.

Sadly, we are saying goodbye to **Dr Richard Mayne** who has stepped down to focus on his parenting duties. We thank Rich for all his contributions to BTRU-GEMS & wish him all the best in this next chapter.

The BTRU-GEMS sequencing 'bake-off'

Dr Michael Fu

Comparing sequencing methods to detect hepatitis B virus

A true GEMS team effort

For the first time, researchers from all three BTRU-GEMS themes came together in a single study, combining expertise across the BTRU with collaborators from six European laboratories. Together, we put nine next-generation sequencing (NGS) methods to the test to see how well they could detect & sequence hepatitis B virus (HBV) when only very small amounts of the virus are present in blood.

And the Star Baker was...?

No single winner!

Rather than identifying one method as the overall "best", the study showed that each sequencing approach has its own strengths, depending on the task at hand.

The three contenders

Untargeted metagenomic sequencing

- Looks at all genetic material without specifically targeting HBV
- Did not recover complete HBV genomes
- Identified other viruses present in blood donation samples

Target-capture sequencing

- Enriches selected viral genetic material
- Recovered complete HBV genomes when higher levels of virus was present
- Could still detect HBC at lower levels as well as other viruses

PCR-based sequencing

- Makes additional copies of HBV genetic material
- The most sensitive approach
- Recovered complete HBV genomes even when very little virus was present.

Read the full publication in the Journal of Medical Virology: [doi: 10.1002/jmv.71130](https://doi.org/10.1002/jmv.71130)

Meet Blanka!

Three things about me

1. *I love spending time in nature*
2. *I've lived in 5 different countries*
3. *I love earrings! You'll notice me matching them to my outfit* ☺

Hello! Although I joined BTRU-GEMS back in July, this is my first newsletter, so it feels like a good opportunity to introduce myself properly.

I'm Blanka, the new PPIE Manager. Over the past few months, I've really enjoyed getting to know our researchers & public contributors, learning about the work across GEMS, & finding my feet in the world of blood & transplant research!

I'm delighted to have joined at such an exciting time. As GEMS begins its next chapter, I'm looking forward to building on the fantastic PPIE work already happening, creating new opportunities to work together, & ensuring our public contributors continue to have a meaningful voice in our research.

Getting to know Laura Buggiotti

Laura is a relatively new face in BTRU-GEMS & will continue working with the Unit during the extension. Let's get to know her!

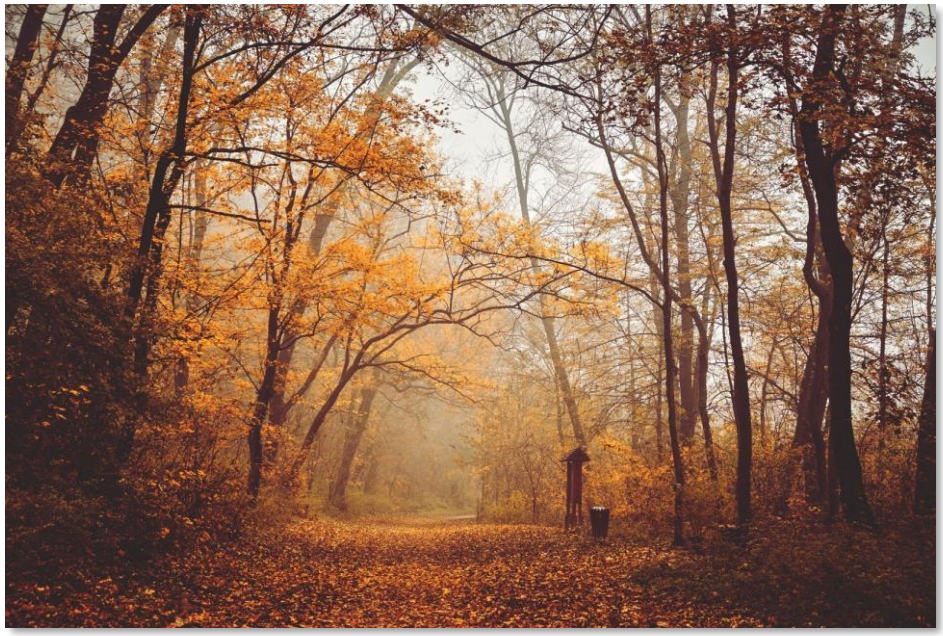
Dr Laura Buggiotti
Senior Research Fellow
University College London

Tell us a little about yourself & your role in BTRU-GEMS.
I'm a Senior Research Fellow in computational biology at UCL Great Ormond Street Institute, with over 15 years' experience in genomics & bioinformatics. In BTRU-GEMS, I support metagenomics & other genomic analyses, helping turn large sequencing datasets into reliable, meaningful results.

What will you be researching during the extension, & why does it matter?
Metagenomics lets us read all the genetic material in a sample at once, revealing any pathogens present, including unexpected ones. I'll build & apply analysis methods that detect & characterise these organisms accurately. This helps spot infections & emerging threats sooner.

What are you most looking forward to during your time with BTRU-GEMS?
I'm looking forward to working across disciplines with clinicians, laboratory scientists & fellow data scientists, & seeing our analyses feed directly into real-world decisions. I'm also excited to help colleagues & students build their own bioinformatics skills along the way.

Tell us something about yourself outside research!
I'm Italian & love making Roman-style pizza with my own sourdough starter. In winter I head to the mountains to snowboard, & the rest of the year I enjoy exploring the countryside with my family & dog.



Make the most of autumn!

The days are getting shorter, but the autumn colours are at their best.

Why not wrap up warm, step outside and enjoy a little fresh air and seasonal scenery?

Introducing the new researchers of BTRU-GEMS — Technology Theme in the extension

Professor Nicholas Matheson
Theme Lead
University of Cambridge

About me
I'm a molecular virologist at Cambridge, an Infectious Diseases doctor at Addenbrooke's Hospital & an NHSBT Principal Investigator. In clinic, I care for people with HIV & hepatitis; in the lab, I study viruses & our immune response.

My research
During the BTRU-GEMS extension, I'll lead the Technology theme. Globalisation & climate change are increasing the risk of emerging viruses from mosquitoes & ticks, which can also be spread by blood transfusion. My research will develop new antibody tests to help us monitor how widespread these infections are in UK blood donors.

I'm looking forward to...
Getting to know the wider GEMS team & leading research with the potential to make our blood supply even safer.

Outside research
I'm a keen figure skater & can manage a respectable Salchow or toe-loop... you may need to look those up! My tweenage kids are now much more accomplished on skates than I am.

Dr Pehuén Pereyra Gerber
Senior Scientist
University of Cambridge

About me
I'm a postdoctoral scientist in Nick Matheson's lab at Cambridge. During COVID-19, I developed 'reporter cells' that light up when infected with SARS-CoV-2, helping us test antiviral drugs & measure antibody levels.

My research
I'll build on this work to develop similar tests for emerging viruses, particularly flaviviruses spread by mosquitoes & ticks.

I'm looking forward to...
Meeting new people & using my research to solve a clear, real-world problem. That connection to patients & public health is a great motivation in the lab.

Outside research
Before becoming a scientist, I was a national-level gymnast in Argentina – but had to stop after hurting my back. More recently, I managed to aggravate the injury by bouncing on a trampoline at a lab summer party – my wife wasn't impressed!

30 years of public involvement

2026 marks 30 years since the establishment of Consumers in NHS Research, the group that later became known as *INVOLVE*. Since 1996, public involvement has come a long way, with patients & the public increasingly working alongside researchers to help shape research that is relevant & meaningful.

At BTRU-GEMS, we've seen the value of this first-hand. Our public contributors have helped shape projects, make complex science more accessible, engage with communities & co-produce research outputs alongside our researchers.

As we celebrate this milestone & look towards the next two years of GEMS, we're excited to build on what we've learned, strengthen these partnerships & continue exploring what meaningful involvement can look like.

Thirty years on, the message remains as important as ever:
better research happens when we work together.

My experiences, my hopes

Having had a kidney transplant 14 years ago, I've seen first-hand how much the relationship between patients & healthcare professionals has changed.

I remember being shown a rather "stone-cold" dialysis video & then being asked to make a choice. Today, communication can be much more interactive, bringing in patients' lived experiences & helping bridge the gap between patients and professionals. For me, PPIE has helped move us from things simply being "done to" patients towards genuine choice & informed understanding.

As GEMS moves into its next chapter, I hope we continue involving donors, recipients, carers & affected communities from the earliest stages of research, helping ensure new developments reflect what matters to the people they affect.

"We may sometimes speak different languages, but we share the same goal: better, safer healthcare."

Roger Graham
Steering Committee Member

To look forward to...

Some of our upcoming events

January 2027 (date and time TBC)
Emerging Viruses and Blood Safety
Online PPIE Involvement Workshop

15-16 March 2027
BTRU-GEMS Annual Meeting