

Since joining the consortium, Northumbria University has sequenced over 11,000 SARS-CoV-2 genomes.

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Mapping Covid-19 – one year on

Over the last year, academics from Northumbria University have been working with partners in the [Covid-19 Genomics UK \(COG-UK\) consortium](#) to map how Covid-19 spreads and evolves.

On 23 March 2020, the government announced the launch of a whole genome sequence alliance to map how SARS-CoV-2 spreads and behaves. Backed by the UK's leading genomic scientists and health professionals, the [COG-UK consortium](#) was established to help better understand the virus and equip public health agencies, the NHS and UK government with the tools to combat Covid-19.

Northumbria University is a funded academic partner of the COG-UK consortium. The University's DNA sequencing research facility, NU-OMICS, has been assisting the consortium in rapidly sequencing whole SARS-CoV-2 genomes since April 2020. Since then, Northumbria has sequenced over 11,000 SARS-CoV-2 genomes, with a highest weekly submission of approximately 1900 genomes.

Now, one year on, we are taking a moment to reflect on the exceptional efforts of all of the partners across the consortium and highlight some of the key achievements COG-UK has seen over the past year.

A year in numbers

**Correct as of 23 March 2021. For updated daily figures, please see the [COG-UK Mutation Explorer](#), an open-access dashboard that provides access to data on SARS-CoV-2 mutations and variants of interest.*

At the beginning of March this year, [Darren Smith](#), Professor of bacteriophage biology from Northumbria's [Department of Applied Sciences](#) and the consortium lead for the University, was appointed as one of four new Deputy Directors of COG-UK. In his new role he will support the Executive Director and Chair, Professor Sharon Peacock, steering committee and COG network in transitioning testing back to PHE and helping shape the future use of genomics in pathogen surveillance regionally and nationally.

Professor Smith will also continue to lead work locally with seven NHS partners and PHE as the North East England's regional sequencing hub for SARS-CoV-2.

Reflecting on the last year, Professor Smith said: "I am extremely proud of how hard the team and our clinical colleagues have worked over the last 12 months as part of this groundbreaking network of sequencing centres across the UK. We have scaled our capacity to support a broad surveillance of viral genomic variation across the North of England, feeding into the national picture informed by COG-UK as a whole.

"Alongside this we have supported hospital infection control teams and PHE in understanding outbreaks and transmission in a range of clinical, and other

important institutional settings. Genomic sequencing in this context is very powerful and can show transmission within clinical settings as we trace viral mutations between cases, informing infection control practise in a way never before possible.

“This project has successfully illustrated the translational power of genomics in helping us to understand infectious disease evolution and transmission during this pandemic. We continue in our monitoring of variants of concern such as the Kent and South African lineages. Continued observation of these existing and new variants is essential to shape important public health decisions, locally, nationally and globally.”

Professor Sharon Peacock, Executive Director and Chair, COG-UK, thanks all colleagues involved in the project: “As a consortium, these achievements (and many more besides) have been met while juggling countless Zoom meetings, home-schooling, and support of family members amidst the ongoing lockdowns and restrictions.

“We thank all within the consortium for your outstanding dedication, commitment and support throughout the past year that has made COG-UK and its achievements possible.”

Northumbria University is working in partnership with NHS Trusts across the region, including: South Tees Hospitals NHS Foundation Trust, North Cumbria Integrated Care NHS Foundation Trust, North Tees and Hartlepool NHS Foundation Trust, Newcastle Hospitals NHS Foundation Trust, County Durham and Darlington NHS Foundation Trust, Gateshead Health NHS Foundation Trust and Northumbria Healthcare NHS Foundation Trust.

Over the last year the Covid-19 Genomics UK Consortium team at Northumbria University has included:

- Professor Darren Smith
- Dr Matthew Bashton
- Dr Andrew Nelson
- Dr Gregory Young
- Dr Clare McCann

- Dr William Stanley
- Dr John Henderson
- Mr Zack Richards
- Mr Rui Nunes Dos Santos
- Mrs Amy Hollis
- Mr Matthew Crown
- Dr Wen Yew
- Professor Steven Rushton (Newcastle University)
- Dr Roy Sanderson (Newcastle University)
- Professor Sarah O'Brien (Newcastle University)

The team have also been supported by a wider group of colleagues aiding procurement, grants and contracts, as well as faculty support structure.

Northumbria's NU-OMICS DNA sequencing facility delivers a wide range of genome sequencing projects from Microbiome studies - helping to capture a snapshot of bacterial, fungal and viral communities in clinical and environmental studies, through to genome sequencing of bacteria, virus and fungal species. To find out more and enquire about this service, please visit the University's [NU-OMICS webpage](#).

-Ends-

Notes to editors:

About Northumbria University

Northumbria University, Newcastle is a research-rich, business-focused, professional university with a global reputation for academic excellence.

Northumbria is one of the largest universities in the UK with more than 30,000 students from over 130 countries

About COVID-19 Genomics UK (COG-UK)

The current COVID-19 pandemic, caused by SARS-CoV-2, represents a major threat to health. The COVID-19 Genomics UK (COG-UK) consortium has been created to deliver large-scale and rapid whole-genome virus sequencing to local NHS centres and the UK government.

Led by Professor Sharon Peacock of the University of Cambridge, COG-UK is made up of an innovative partnership of NHS organisations, the four Public Health Agencies of the UK, the Wellcome Sanger Institute and academic partners providing sequencing and analysis capacity. A full list of collaborators can be found [here](#). Professor Peacock is also on a part-time secondment to PHE as Director of Science, where she focuses on the development of pathogen sequencing through COG-UK.

COG-UK was established in April 2020 supported by £20 million funding from the COVID-19 rapid-research-response “fighting fund” from Her Majesty’s Treasury (established by Professor Chris Whitty and Sir Patrick Vallance), and administered by the National Institute for Health Research (NIHR), UK Research and Innovation (UKRI), and the Wellcome Sanger Institute. The consortium was also backed by the Department of Health and Social Care’s Testing Innovation Fund on 16 November 2020 to facilitate the genome sequencing capacity needed to meet the increasing number of COVID-19 cases in the UK over the winter period.

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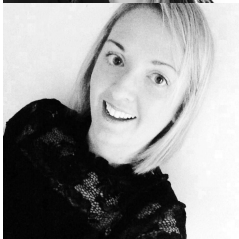


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