



## Jinal Bhiman

Global Immunology and Immune  
Sequencing South Africa (GIISER-SA)

**Talk title:**

SARS-CoV-2 viral evolution in South  
Africa and hybrid immunity profiles



## Vicent Pelechano

Karolinska Institutet

**Talk title:**

Development of LAMP-based point of  
care strategies for simplified  
SARS-CoV-2 detection

**Wednesday April 13, 2022, at 15:15-16:45**

**Online via Zoom**

**Jinal N. Bhiman** began her research career in HIV virus-host dynamics, with a focus on how viral evolution during chronic HIV infection can be exploited to design preventative vaccines. Between 2019-2021, as the Director of the National Influenza Centre, Jinal developed diagnostic assays, assessed surveillance data, performed antigenic characterization and whole genome sequencing for influenza, respiratory syncytial virus (RSV) and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Currently Jinal is the scientific lead for the Global Immunology and Immune Sequencing South Africa (GIISER-SA), with an interest in vaccine and infection induced antibody responses in the periphery and mucosa to SARS-CoV-2. Jinal is a founding member of the Network for Genomics Surveillance in South Africa (NGS-SA) and serves as an observer in the WHO Technical Advisory Group on Viral Evolution.

**Vicent Pelechano** is a SciLifeLab and Wallenberg Academy Fellow working as Principal Researcher at Karolinska Institutet, Department of Microbiology, Tumour and Cell Biology. He leads a research group focused on the development of novel genome-wide technologies for the study of gene expression (<http://pelechanolb.com>).

**Abstracts**



## Jinal Bhiman

### Talk title:

SARS-CoV-2 viral evolution in South Africa and hybrid immunity profiles

During the first year of the SARS-CoV-2 pandemic, limited viral evolution was selected for, with most of these centered on adaptation to an infection naïve host population. As the virus expanded its reach, highly immunodominant regions of the spike protein elicited generally uniform population immunity, which in turn gave rise to convergent viral evolution and the emergence of multiple globally relevant variants of concern. Vaccines were developed and administered, with the aim of preventing infection, however with the emergence of these variants with clear selective advantages, our focus shifted towards preventing severe disease and hospitalization. I will discuss these events in the context of South Africa and detail some preliminary data on the antibody profiles of individuals with hybrid immunity following Delta and Omicron breakthrough infections.

## Vicent Pelechano

### Talk title:

Development of LAMP-based point of care strategies for simplified SARS-CoV-2 detection

Loop-mediated isothermal amplification (RT-LAMP) detection of SARS-CoV-2 has been shown as a valuable approach to scale up COVID-19 diagnostics and thus contribute to limiting the spread of the disease. I will present our efforts trying to simplify RT-LAMP application in a point of care setting. I will first discuss our efforts developing affordable reagents to facilitate the expansion of SARS-CoV-2. Next, I will present our current work integrating LAMP with fluorescent and electric based detection of nucleic acids, with the aim to develop affordable point-of-care instruments for pathogen detection.