National Science Week

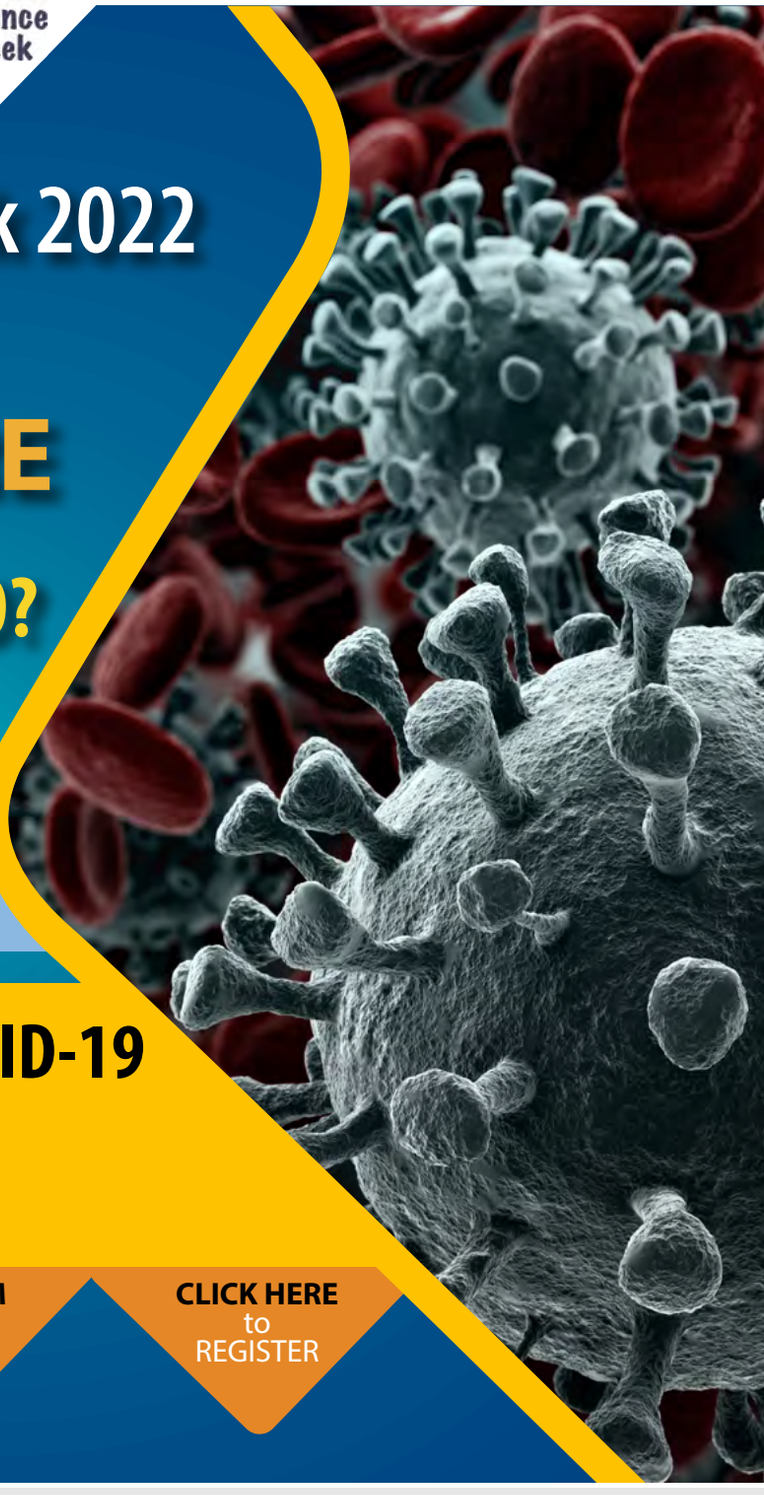
In Celebration of

National Science Week 2022

ONLINE
PUBLIC LECTURE

WHAT DO SCIENTISTS DO?
A Look Inside the Ivory Tower

Join us for an entertaining and informative look at the interesting research being undertaken at the Africa Health Research Institute (AHRI) and UKZN.



BEHIND THE SCENES OF COVID-19
with
Dr SANDILE CELE

DATE	TIME	PLATFORM	CLICK HERE
Wednesday 3 AUGUST	17h30-18h30	ZOOM	to REGISTER

Sandile Cele is a laboratory supervisor at Africa Health Research Institute (AHRI) in KwaZulu-Natal. He is from Ndwedwe, in the Mwolokohlo Area. Sandile's undergraduate degree was in Biomedical Sciences. He later went on to do an Honours in Medical Microbiology, and a Masters in Biochemistry at UKZN. Sandile joined Africa Health Research Institute in 2014, where his work scope involved understanding HIV evolution of drug resistance. He completed his PhD in 2021 at UKZN; his PhD work at AHRI focussed on understanding the 501Y.V2 (Beta) variant and its escape from antibodies.

Sandile recently led some of the South African and global research response to Covid-19, including the studies that were first to isolate and characterize the live Beta variant. With the Sigal group, he was the first in the world to report the immune escape of Beta and Omicron. He additionally led the study that described how variants can evolve in Sub-Saharan Africa. His research output has helped put South Africa at the forefront of Covid-19 research. Additionally, while most research groups use pseudostyle SARS-CoV-2, he developed a creative way to isolate live virus from infected individuals.

Conventionally, coronaviruses are easily isolated using Vero cells (Monkey cell line) and this also worked well when the research team isolated ancestral strains of SARS-CoV-2. However, when he attempted to isolate the Beta variant using the same method it was not successful. A new way of isolating SARS-CoV-2 was invented. This involved isolating SARS-CoV-2 using a H1299 ACE2 (human cell line) and Vero cells (Monkey cell line). First, H1299 AE2 cells are infected with SARS-CoV-2 and incubated for four days. The infected H1299 ACE2 cells are then used to infect Vero cells for production of virus stock to be used for subsequent assays.

The work he has done since May 2020 has led to the publication of three first author papers; two in *Nature* and one in the *Cell Host* and *Microbe* journal. Sandile is the 7th recipient of the National Batho Pele Excellence award.

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NRF National Research Foundation | SAASTA South African Agency for Science and Technology Advancement

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