

## ACHIEVEMENTS ►

- Completed enrolment for the IMPALA trial (N=540), which aims to improve HIV outcomes in Africa through the use of long acting antiretrovirals. The trial is evaluating the effectiveness of 2-monthly cabotegravir plus rilpivirine among adults with a history of suboptimal virological control in Uganda, Kenya, and South Africa.
- Identifying New and Re-Emerging Viruses: Developed robust infrastructure for detecting emerging infections, contributing to public health responses. Recent breakthroughs include confirming Bacillus anthracis as the cause of a fatal Anthrax outbreak in Uganda and providing diagnostic support for the Mpox outbreak, identifying the new Clade 1b.
- Advancing HIV Research: Identified key Transmitter/Founder HIV strains for vaccine development and constructed Env plasmids to produce pseudoviruses, enabling neutralization sensitivity studies. Additionally, built capacity to produce monoclonal antibodies (mAbs) for vaccine design and therapeutics, expressing 10 Fusion Proteins and 4 ultra-potent bnAbs targeting critical HIV epitopes.

- Established single-cell RNA sequencing (scRNA-seq) that will enable detailed characterization of B-cell subsets. We have analysed protective B-cell signatures in convalescent COVID-19 patients. We have been successful in winning Wellcome Trust Funding that will contribute to defining Marburg immune correlates of protection, a CRICK Africa early-career biomedical scientists fellowship that will look at HIV-1 latent viral reservoirs and CEPI funding to establish assays to detect emerging viruses and to measure immune responses.

## WHERE WE WORK ►

Our studies are conducted with support from the Unit's Sequencing, Immunology, Clinical Trials and Clinical Diagnostics Laboratory Services and Biobanking (CDLS) research platforms at its [Entebbe campus](#) and [Masaka City](#).

Our community-based studies also work through organized cohorts such as the General Population Cohort in Kyamulibwa, fishing communities and in districts particularly affected by the infections we are studying.

## ABOUT THE MRC/UVRI AND LSHTM UGANDA RESEARCH UNIT

The MRC/UVRI & LSHTM Uganda Research Unit is an internationally recognized centre of excellence for research and training. The Unit was established in 1988 to improve the understanding and control of the HIV epidemic in Uganda and globally, following a request from the Uganda Government to the United Kingdom (UK) Government. After wide consultations, and in response to the changing public health landscape, Unit work has broadened beyond HIV to include other infections, neglected, endemic, emerging and re-emerging infections and non-communicable diseases (NCDs).

The Unit is one of two (2) UKRI/MRC Units outside the UK, the other one in the [Gambia](#). With strong affiliation to the Uganda Virus Research Institute (UVRI), the Unit en-

joys vital representation at government level, which facilitates translation of research findings.

In 2018, the Unit was transferred to LSHTM, a major UK global health institution. This new partnership is boosting research capacity into some of the current and emerging health issues in Africa and globally.

## OUR MISSION ►

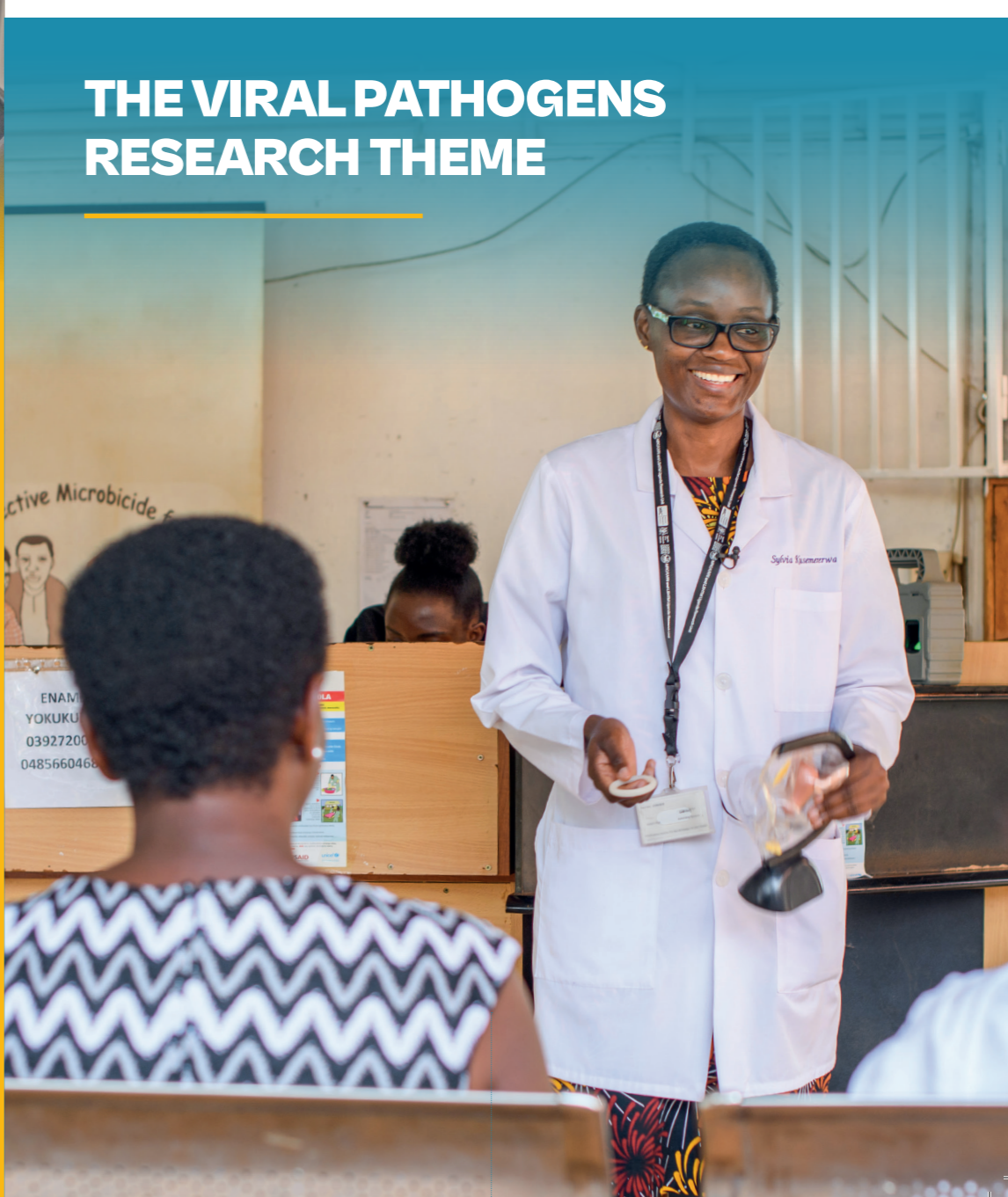
To conduct high-quality research that adds knowledge and leads to improved control of infectious and non-communicable diseases in Uganda, Africa and globally, through translation of scientific findings into policy and practice, and rigorous research capacity building

## CONTACT US

For more information about the Vaccine Research Theme, visit its web page at: [www.mrc-uganda.org](http://www.mrc-uganda.org)

For media enquiries, please contact the communications team via [press@mrcuganda.org](mailto:press@mrcuganda.org)

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## THE VIRAL PATHOGENS RESEARCH THEME



## BACKGROUND ►

Viral pathogens have long posed significant global health challenges, causing widespread morbidity and mortality and disrupting economies and communities. The COVID-19 pandemic underscored the devastating impact of viral diseases, highlighting the critical need for advanced research to prevent, diagnose and treat these threats. Yet even before COVID-19, other viral pathogens such as HIV continue and others like Ebola, Zika and influenza emerge or reemerge, often with catastrophic effects, particularly in resource constrained settings.

In Africa, the burden of viral infections is disproportionately high, compounded by factors such as high population density, inadequate healthcare infrastructure, and the co-existence of multiple infectious diseases. Additionally, climate change, urbanization, and increased human-animal interactions are accelerating the emergence of new viral threats, many of which have pandemic potential.

Despite these challenges, Africa remains underrepresented in global health research,

with limited capacity for detecting, monitoring, and responding to viral outbreaks. This gap hinders timely interventions and exacerbates the impact of these diseases on vulnerable populations.

## ABOUT US ►

The Viral Pathogens research theme is a key component of the MRC/UVRI and LSHTM Uganda Research Unit, focused on advancing the development of effective preventive and treatment therapies for epidemics and disease. Alongside our work in vaccine research and non-communicable diseases (NCDs), our virology research aims to understand the epidemiology of HIV, oncogenic and emerging/re-emerging infections. We are committed to discovering viruses of public health importance and understanding how pathogen diversity influences epidemics and disease outcomes.

Our research is very collaborative, working in close partnership with scientists from our Vaccines and NCD Themes, as well as the Uganda Virus Research Institute (UVRI), to address the most pressing health challenges.

## OUR RESEARCH FOCUS ►

This research theme is centered on three main focus areas:

### 1. Viral Pathogen Epidemiology and Interventions (VPEI)

Building on past discoveries, this focus area aims to inform HIV prevention and treatment interventions by quantifying infection and mortality trends in general and key populations. We are developing new interventions, expanding coverage of existing tools and improving long-term health outcomes for people living with HIV. Our research also targets oncogenic infections like Kaposi's sarcoma-associated herpesvirus (KSHV), while ongoing studies are exploring SARS-CoV-2 and other viral threats.

### 2. Viral Pathogen Discovery, Diversity and Impact on Epidemics and Disease Outcomes (VPDD)

Using metagenomics and bioinformatics, this focus area researches new and re-emerging viruses of public health importance, aiming to identify intervention tools. Our scientists investigate HIV drug resistance patterns, the impact of viral diversity on immune protection, and are engaged in cutting-edge research on B cell repertoires and monoclonal antibody generation. This work extends into other viral infections like Ebola, Marburg, and Rift Valley Fever.

### 3. Oncogenic virus immunovirology (OVI)

Our research on oncogenic viruses aims to contribute to cancer control and prevention by studying transmission and pathogenesis in population-based studies. A significant focus is on Kaposi's sarcoma virus, which is prevalent in the region and a leading cause of one of the most common cancers.



## PARTNERSHIP FOR IMPACT ►

Our Theme is committed to maximizing the impact of our scientific research through strategic collaborations with a broad range of stakeholders, including:

1. The Ministry of Health, its key agencies and regulatory bodies
2. Research community volunteers in at-risk areas of focus
3. Community Advisory Boards (CABs)
4. National and international research organisations and networks
5. Academic institutions
6. Health service providers

## CAPACITY BUILDING ►

Through targeted training programs, mentorship, and collaborative strategies, early-mid career scientists have been able to successfully compete for prestigious Fellowships, including Wellcome early career awards, strengthening local expertise in epidemiology, clinical research, and health systems. Guided by the Unit's overarching capacity building strategy, our efforts are focused on building partnerships with local and global academic institutions to support early career scientists. We also engage directly with communities to co-develop innovative research studies for the prevention and management of infectious diseases.