due to its capacity to conduct studies that enable understanding of viruses at a molecular level. Besides having an expert team of molecular virologists, the Unit is equipped with technology to clone or replicate viruses, such as the HIV virus, to propagate and understand the virus’ characteristics. The Unit also trains other research teams on virus surveillance work.

Laboratory capacity
The MRC/UVRI and LSHTM Uganda Research Unit has fully equipped state-of-the-art laboratories where staff conduct a wide range of research activities in collaboration with scientific partners and supported by core funding from the MRC U.K., research grants, and other partners’ funding.

Through the IAVI ADVANCE program, the Unit’s immunology and virology laboratories have been equipped to carry out the following assays under the Vaccine Immunology Science and Technology for Africa (VISTA) program:

• Generation of virus tools for screening of broadly neutralizing antibodies
• Identification of viruses that are preferentially transmitted by using techniques that magnify the copies of the genetic material in vitro
• Looking at virus fitness and its correlation to disease progression and immune activation
• Assessing the inhibition of different viruses with samples from the relevant population — viral inhibition assays and epitope mapping
The Unit’s resources include fully equipped and staffed field stations, administrative offices, and a bioinformatics unit.

People
The key personnel at the MRC/UVRI and LSHTM Uganda Research Unit include Pontiano Kaleebu, Ph.D., director and overall principal investigator; Freddie Mukasa Kibengo, Ph.D., principal investigator; Yunia Mayanja, Ph.D., principal investigator; Jennifer Serwanga Ph.D., principal investigator; Eugene Ruzagira, Ph.D., principal investigator. Others include data scientists, virologists, social scientists, a bioinformatician and an immunologist.

Community engagement
At all research sites, the Unit’s community engagement work is guided by Good Participatory Practice, an international standard for biomedical HIV prevention trials that applies to both ongoing and planned HIV prevention research activities. The overall objective is to enhance mutual trust, interest, and meaningful partnerships between the research site and the community. The Unit has also secured long-standing support from community leaders, political leaders, and civil society and has developed well-trained committed community advisory boards (CABs), which actively participate in reviewing studies and creating linkages with the community and are members of Uganda’s Cross-CAB Network, trainings, and engagement of a coastal CAB.

IAVI-supported activities
- Acute HIV infection
- Rapid identification and engagement of key populations
- Multi-site and multi-national research consortia (Lake Victoria Consortium for Health Research)
- Adolescent research
- Research preparedness: engaging communities and cohorts
- Long-term follow-up studies
- T-cell immunogen design and assessment
- B-cell immunogen design and assessment
- International training
- Investigator-initiated research
- University of Oxford EDCTP-funded ‘GREAT’ project
- Pilot acute/early infection study

Additional activities
- Vaccine trials for HIV, Rift Valley fever virus and Ebola virus
- Social science studies of HIV superinfection, population differences in vaccine response
- Research on the changing HIV/AIDS epidemic
- Research on endemic, neglected, emerging and re-emerging infections
- Research to understand the risk factors and control of NCDs
- COVID-19 related activities such as testing samples for COVID-19

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