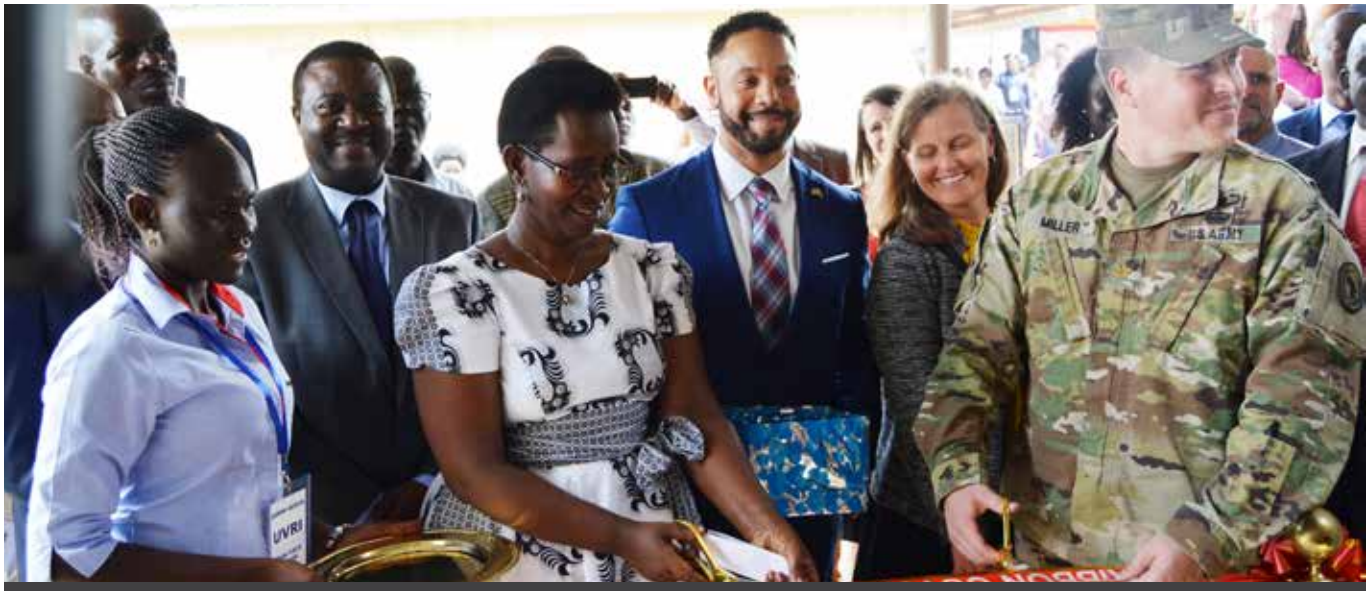
UGANDA VIRUS RESEARCH INSTITUTE

# UVRI in Action

QUARTERLY NEWSLETTER

ISSUE NO.2 - OCTOBER – DECEMBER 2018

## UVRI commissions a new modern laboratory



*The Permanent Secretary, Dr. Diana Atwine and The Representative of the US Ambassador to Uganda, Major Mike Miller cut the ribbon at UVRI Arua Field station: 5 November 2018.*

On 5th November 2018, a modern diagnostic laboratory was commissioned in a colorful ceremony at Uganda Virus Research Institute Arua Field Station.

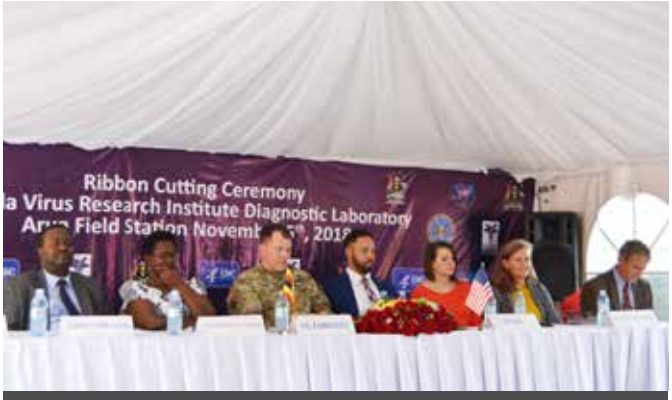
The laboratory was officially commissioned by the Permanent Secretary Ministry of Health, Dr. Diana Atwine. Speaking at the opening Dr Diana Atwine said the new facility would enhance the institute's capacity to detect diseases early and prevent outbreaks in the region.

"Despite the numerous challenges the institute faces, it has played a significant role in disease surveillance, engaging and improving the capacity of health workers, local communities and traditional leaders to prevent and fight plague and other diseases in the West Nile region" she said.

The event was also graced by the representative of the US Ambassador to Uganda Major Mike Miller, Director Center for Disease Control and Prevention (CDC) Uganda, Dr Lisa Nelson, the US Defense Threat Reduction Agency (DTRA) representative, Mr. Lawrence Smith, Resident District Commissioner of Arua district Peter Dibele, other high profile international and local delegates from the US based construction Company; CH2M, Ministry of Health, Ministry of Animal Industry and Fisheries, Arua District Local government, Implementing partners, ARCH FORUM, Excel Construction Company and UVRI staff.

The facility upgrade which started in September 2017 was supported by the United States government through the Defense Threat Reduction Agency (DTRA). The new facility has modern facilities which include specialized rooms for molecular testing, dedicated rooms for handling human and animal samples, adequate storage space for samples and supplies, adequate personnel protection measures, access controls, intrusion alarm systems, fire controls, dedicated power supply, adequate water supply and improved drainage systems among others.

For the last 15 years, the UVRI station in Arua, in collaboration with the CDC, has been conducting epidemiologic, clinical and diagnostic research on plague and developing strategies to control rats and fleas responsible for its spread in the West Nile region of Uganda. Plague is still an active disease in the West Nile region and this has been largely attributed to the strategic location with the Democratic Republic of Congo and South Sudan.




*Delegates at the commissioning of the laboratory*

# INSIDE THIS ISSUE



# EDITORIAL TEAM



# Editorial

## Welcome to the second edition of the Uganda Virus Research Institute Newsletter UVRI in Action.

In this issue we would like to inform you about the exciting innovations, developments and events happening at the institute. As most of you are aware, our guiding philosophy at Uganda Virus Research Institute is enabling science learning and unveiling innovations. It is fair to say the last quarter was exciting in many ways as we held several programs for human resource capacity building, facility upgrades and new developments.

In our science innovations we involve students in research projects and study experiences to build a future group of young leaders. The UVRI Open day science fair and internship programs are some of the significant events providing students with opportunities for learning and sharing experiences.

In this issue, read about the commissioning of the new plague laboratory commissioned at the UVRI station in Arua district, Zika forest and its significance to research at local, national and international level as well as UVRI preparedness for Ebola and other emerging and re-emerging diseases, interesting news and updates on recent activities.

Through this newsletter, we continue to keep in touch with our stakeholders, clients and staff who have been an integral part of our journey. We hope to use this newsletter partly as an additional tool to inform and raise awareness of our mandate.

We are carrying in this issue the following sections, which we hope to make regular features of our newsletter, adding more sections, as we go along:

**Director's message** – this section is a platform for our Director to share few experiences

**News** - This section comprises new information on activities taking place at the institute, at national and international level.

**Updates** - This section will try to give you the updates of activities that have taken place during this period.

**Interviews** - This section features our staff sharing their work experience.

The Newsletter also features various community outreach activities conducted at and by the Institute for the different sections of the society.

We hope you will welcome this newsletter as we connect with you.

## DIRECTOR'S REMARKS

# As we start the New Year 2019,

I wish to congratulate our staff, partners, collaborators and all stakeholders for completing 2018. I hope the good Lord will push us through this year!

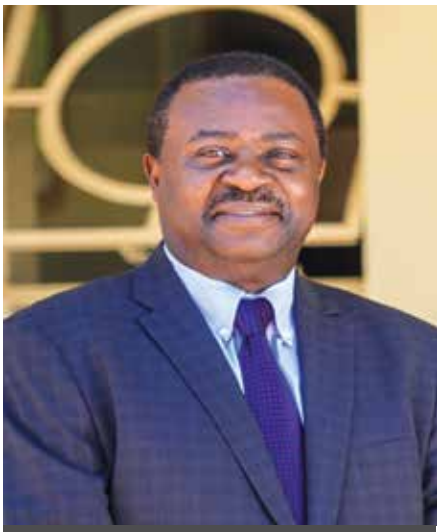
This is our second Quarterly newsletter "UVRI In Action". Since the first issue, we have registered a number of achievements and here I wish to mention but a few.

We have generated and published important research data, including the following: Data on how immune response CD4+ and CD8+ T cells respond to pathogens in HIV and Schistosomiasis, information needed for diagnostics and vaccine development. We jointly with others published a new Hepatitis C genotype, which may not easily respond to the current treatments. We reported that, high-intensity treatment of S. mansoni does not delay HIV progression despite relevant benefit for parasite clearance. Similarly, anthelminthic mass drug administration had no effect on atopy, allergy-related disease or helminth-related pathology. We reported a possible presence of Zika virus in three individuals in the area of Nkokonjeru, though these were not confirmed by other more sensitive assays and more work in this area continues. We also published some work on the presence of multidrug resistant Salmonela Typhi.

During this quarter, The UVRI-IAVI HIV Vaccine Program joined the large pre-exposure (PrEP) trial using the long acting HIV integrase inhibitor, Carbotegravir, which is hoped to address the challenge of adherence when those at risk use daily oral anti-retrovirals to prevent infection.

As you will read further in this newsletter, we continue to provide diagnostic and surveillance services for different diseases. We have been very active in the surveillance and testing of viral heamorraghic fever (VHF) viruses like Ebola, Rift Valley Fever and others. We confirmed yellow fever (YF) in a patient in South Sudan and Dengue in a traveller from outside Uganda.

During this reporting period, WHO



*Prof. Pontiano Kaleebu – Director UVRI*

communicated to us certifying our laboratories as the Regional YF reference laboratories, only the second in Africa. Since our last newsletter, we have released the National HIV drug resistance 10-year report, describing the progress made in preventing HIVDR and the extent of the problem in Uganda, the report was released during the HIV drug Resistance workshop we organized at Munyonyo on 12th and 13th September 2018.

Infrastructure development is very important, and in November, through funding from USA Defence Threat Reduction Agency (DTRA), we commissioned the expanded UVRI laboratories in Arua equipped to perform more research and surveillance in the region.

We had a number of important visitors including the Hon Minister of Health Dr. Jane Ruth Aceng, who accompanied the CDC Director, Dr. Robert R. Redfield for a visit on 25th July 2018. In October we hosted the USA Congressional Staff Delegation. The UK minister of State for Africa and Commonwealth Hon Harriett Baldwin visited us on the 5th October together with the British High Commissioner Mr. Peter West and DFID team in Uganda. The Minister during the visit announced a donation of 5.1 million UK pounds towards Ebola control efforts in Uganda.

We have improved our website and we are launching this before the end of the year, we hope this website will continuously be improved.

I wish to thank all those who have continued to contribute to our human capacity development, through on job training, mentorships and supervision of students.

As I continuously remind you, the largest part of our activities are supported through various grants, I therefore thank our scientists who are working hard to ensure we win new grants and publish our good work.
I thank The Government for the increased funding to the Institute and for the support of all kinds we get from the Ministry of Health, Finance and Uganda National Health Research Organization.

I thank partners on campus for the continued support and collaboration in areas of research, capacity development and infrastructure development.

I take this opportunity to congratulate Rakai Health Sciences Program for being one of the winners of the 2018 Al Sumait Prize for Health announced recently. This is in recognition for its important role in improving public health in the African continent by fighting against HIV/AIDS and sexually transmitted diseases.

Special thanks to all staff who have reached retirement and others who have left the institute, we thank them for the contributions they have made and wish them the best in their new lives and endeavours.

Let me end by wishing all of you a prosperous New Year 2019.

NEWS

# UVRI Preparedness for Ebola

*Dr Julius Lutwama*

Since the more recent outbreak of Ebola Virus Disease in the Democratic Republic of Congo in August this year, Uganda has continued to maintain enhanced surveillance and placed response systems in place to deal comprehensively with Ebola.

In September, the World Health Organization raised its alert level saying the risk of Ebola spreading from the Democratic Republic of Congo to other countries was very high due to the outbreak's proximity to the neighbouring countries of Uganda, Rwanda and South Sudan.

Because Uganda has been particularly at big risk, the Ministry of Health and its partners are implementing Ebola preparedness and readiness activities to prevent the disease from crossing into Uganda.

Some of the preparedness activities include strengthening surveillance, infection prevention and control, clinical management of patients including psycho-social care, safe and dignified burials, enhanced risk communication, community engagement, capacity building in contact tracing and laboratory diagnostics among others. The activities include coordinating the preparedness activities, strengthening surveillance, capacity building in contact tracing, and laboratory diagnostics.

Uganda Virus Research Institute as a key Institution of the Ministry of Health providing Ebola testing services, is a major player to Ebola preparedness. It is part of the rapid response team. At UVRI, we are building capacity in different areas in order to contribute to preparedness activities. As part of our preparedness, we are improving our laboratory and staff capacities to be able to readily respond to any possible outbreak.

Our staff have been receiving refresher training by experts from the Centre for Disease Control and Prevention (CDC) in Atlanta in laboratory diagnostics.

Last month, four of our staff were trained further in diagnostics through a WHO sponsored training of Regional laboratory staff. They were introduced to GeneXpert diagnostics training. A GeneXpert equipment has been introduced in the laboratory for Ebola Virus testing.

Other staff have also received training in different aspects of biosafety and biosecurity from CDC staff. More staff including personnel from Uganda Wildlife Authority and the Ministry of Agriculture Animal Industries and Forestry's National Animal Diseases Diagnostics and Epidemiology Centre (NADDEC) are also undergoing training as part of developing surge capacity.

In addition to the training, staff schedules have been modified to ensure there are staff who are on standby to carry out testing on 24 hr-7 days a week basis (24/7). Enough personnel capacity is available to provide support in case of any outbreak.

All machines and equipment have been serviced such that there are in good working condition ready for work or to be deployed where need be.

We are also planning to move part of our laboratory facilities to Western Uganda to provide quick laboratory services to the region. We hope that before the end of next month (December) we will have capacity to test for Ebola virus in western Uganda and the laboratory should also be able to test other highly infectious diseases by end of January next year. This will be a big milestone for the institute as we strive to provide services beyond our campus at Entebbe.

**Ebola Vaccine Trials**

The MRC/UVRI & LSHTM has also participated in the phase I and II Ebola vaccine trials for safety and immunogenicity using the Jensen Ad26.ZEBOV/MVA-BN®-Filo vaccine. They are now working on another protocol using the same vaccine, partnering with MSF/ Epicenter for a larger trial among health care and front line workers in Mbarara area, who may have repeated contacts with the virus over time. This planned larger trial will consolidate knowledge on this vaccine to support regulatory approval and licensure for future access.

**About Ebola**

Ebola is a viral infectious disease that causes an acute, serious illness which if not attended to early is often fatal. Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals such as chimpanzees, gorillas, fruit bats, monkeys, etc, found ill or dead in forests.

Ebola can be prevented by avoiding contact with fruit bats or monkeys/apes and the consumption of their meat, as well as avoiding direct or close contact with people with Ebola symptoms, particularly with their bodily fluids.

UPDATES : *Operations*

# Towards a world class center of Excellence!

*Birungi Rachel Asiimwe*
***Principal Assistant Secretary / Head of Finance and Administration***

It is with gratitude to God that I can look back at the various achievements by both the staff and the Institute. Indeed, I give Glory to God for all the achievements. In October, the UK Minister for Africa Harriett Baldwin visited the Uganda Virus Research Institute and hailed the historical and strong collaboration between the UK and Ugandan governments.

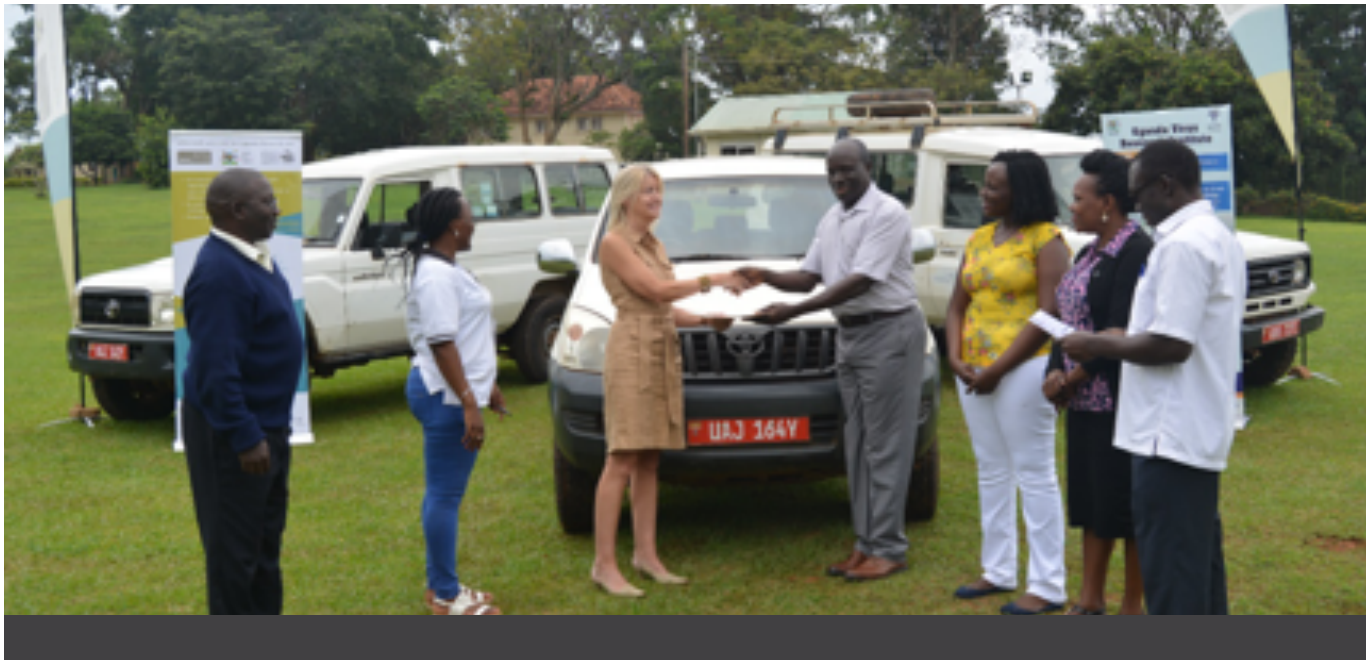
We are grateful to the UK Government for the additional funding of £5.1 million towards Uganda's Ebola preparedness efforts. Following protracted efforts, we finally secured the land tittle for the Institute's land measuring about 72 acres. This is also a big mile stone for the Institute, considering that the process has taken long. Now that we have the tittle, we are in the process of developing a Master Plan for the Institute, which will include among others, the housing Estates. We have undertaken a process to draw a campus Aerial map and number all the buildings on campus.

This will ease location and movement around the campus and also enhance planning and administration. In October, we received three vehicles from the MRC/UVRI and LSHTM Uganda Research Unit to enhance the research capacity at the Entebbe based Institute. The four-wheel drive vehicles valued at more than 50million Uganda shillings were donated to UVRI's Expanded Program on Immunization (EPI), Malaria Research Projects and the Administration department. We are indeed grateful for additional fleet to support health research. In spite of the long list of achievements, we did have some challenges this year.

In the months of September and October, the Institute experienced long power outages, due to constant circuit breaks at the Institute; UMEME therefore switched off power as a safety measure. This was further worsened as the available generator could not handle all the workload. We have since rectified this challenge and are in the process of procuring a 500KVA backup generator. We have also solicited for more generator fuel from the different programs and believe that this will address the power issue. We regret any inconvenience this may have caused you.

I would like to appreciate the Institute Senior Management team lead by the Director, Prof. Pontiano Kaleebu for the focused leadership, their tireless and selfless work towards the Institute. We also appreciate our dear partners who have always supported us in many ways, we look forward to working more closely with you in the coming year 2019. I would also like to take this opportunity to thank all staff for their hard work this year. For the support staff, Finance and Administration staff am indeed indebted to you; you are the engines of the Institute- the foot soldiers! I also thank the Ministry of Health and Ministry of Finance for the continuous support, a great deal of what we do at the Institute cannot be achieved without your co-operation and backing.

Thank you and, May God bless you.



NEWS

# UK minister visits UVRI and announces Ebola funding

*The Director Prof. Pontiano Kaleebu welcoming the United Kingdom Minister of State for Africa Hon Harriett Baldwin accompanied by the UK High Commissioner to Uganda Mr. Peter West*

The United Kingdom Minister of State for Africa at the Foreign and Commonwealth office, Hon Harriett Baldwin visited the Uganda Virus Research Institute on the 5th October 2018 and announced UK's Ebola fund to Uganda.

UK donated 5.1 million pounds to support Uganda's preparedness and prevention efforts against the deadly hemorrhagic fever.

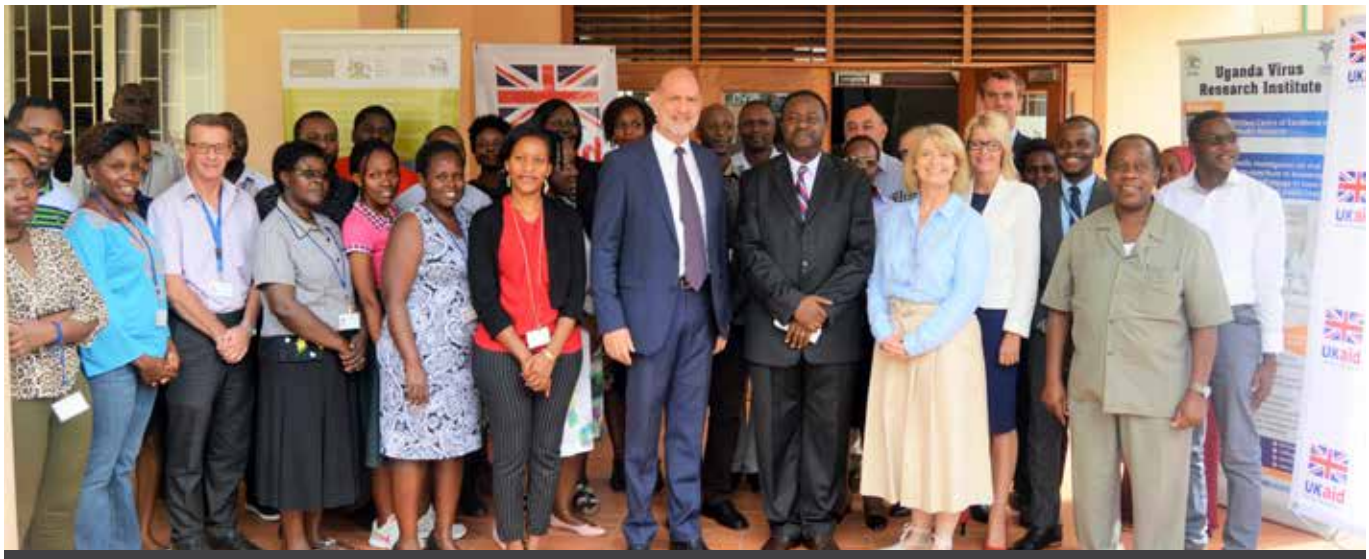
The Ebola outbreak was declared in the Democratic Republic of Congo (DRC) on 1st August 2018 and has since led to deaths of more than 100 people. The country has been on high alert ever since the ministry of health of Democratic Republic of Congo confirmed an Ebola outbreak in North Kivu and Ituri province of populous Eastern Province on August 1, 2018.

Addressing the press at UVRI, Hon Baldwin said the fund will support surveillance in high-risk districts at Uganda's border with DRC; risk reduction communication amongst communities; infection prevention and control measures as well as provide for improved case management.

"With this funding, it will be easy to make timely interventions to strengthen screening at points of entry including the Entebbe international airport to reduce on the risk of the disease spreading across the border from Democratic Republic of Congo" Baldwin said.

She noted that the funding will also support the provision of relief items to refugees to leave overcrowded and high-risk transit and reception centres so as to reduce the risk of spreading Ebola.

While at UVRI, Hon Baldwin visited the Medical Research Council/Uganda Virus Research Institute (UVRI) and the London School of Hygiene and Tropical Medicine Research Unit in Entebbe.




*Group Photo: United Kingdom Minister of State for Africa Hon Harriett Baldwin, UK High Commissioner to Uganda Mr. Peter West, UVRI Director Prof. Pontiano Kaleebu, Acting Deputy Director Dr Julius Lutwama and UVRI staff.*

NEWS

# UVRI hosts Stakeholders meeting to assess Uganda's ten-year national HIV drug resistance prevention, monitoring and surveillance plan.

On 12th and 13th September 2018, the Uganda Virus Research Institute held the National HIV Drug Resistance Stakeholders consultative meeting at Munyonyo Commonwealth Resort Hotel, in Kampala Uganda. The event jointly organised by the Ministry of Health, World Health Organisation, HIV Drug Resistance Technical Working Group (HIVDR TWG) and funded by the Global Fund, was convened to discuss strategies for HIVDR monitoring, surveillance and prevention.

The meeting was officially opened by the State Minister of Health Dr. Sarah Opendi, who reminded participants that the biggest threat to the HIV epidemic control is antimicrobial resistance and that Uganda is one of the few countries that has implemented WHO strategies for monitoring and fighting HIV Drug Resistance. She further called on the Members of Parliament who were in attendance to expedite the Act on the HIV trust fund which would help mitigate increasing costs of medication.

It was attended by participants from the Ministry of Health, Uganda, Global Fund, Centres for Disease Control and prevention (CDC) Uganda, The Uganda AIDS Commission, PEPFAR Country Coordinator, JCRC, CPHL, IDI, MRC/UVRI, Rakai Health Sciences, Makerere University and its collaborating partners, TASO, Mbarara University, MSF, NDA, Mildmay and representatives of the WHO Country Office-Uganda.

In his remarks as the head of the host Institution and chair of the HIVDR TWG, the Director of Uganda Virus Research Institute Prof Pontiano Kaleebu urged participants to use the meeting to discuss World Health Organization's comprehensive global plan on HIV-DR which guides countries on necessary actions to reach epidemic control by 2030.

The Director General, of the Uganda AIDS Commission Dr. Nelson Musoba further called upon participants to embrace the right HIV-DR programming using available knowledge and technology to respond to the emerging threats.

The Director CDC Uganda Dr. Lisa Nelson applauded Uganda for having made significant achievements and that the country is ahead of many countries in regards to HIV-DR monitoring despite the late start in 2007. She emphasized the need for application of good science and further research to address the rising challenge of HIV drug resistance.

The WHO representative- Dr. Yonas Tegegn Woldemariam, commended the HIV DR committee for the continuous support and negotiations that have brought the prices of ARVs significantly down.

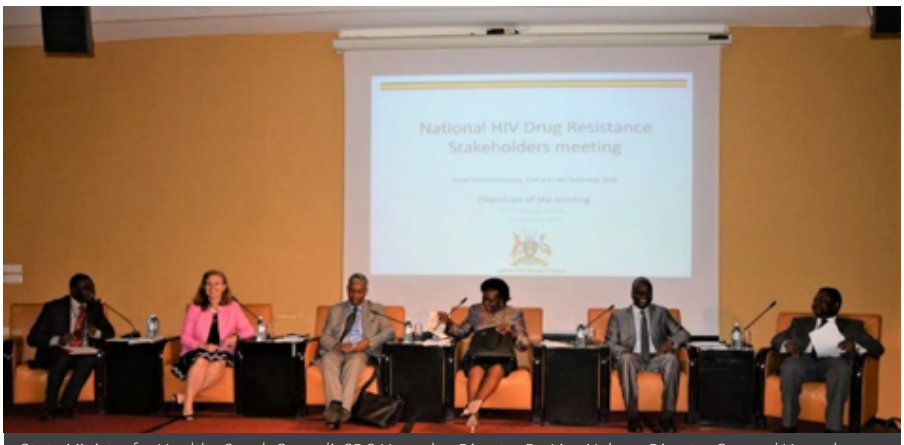
He appealed to the Ministry of Health to work on the occurrence of stock-outs that result in interrupted ART and; also prioritize and embrace the use of technology and social media to disseminate the message on safe sex to young people.

He told stakeholders that Uganda is one of the countries with high levels of pre-treatment HIVDR and urged the HIVDR TWGroup to look into how the strategy will ensure sustainability in times when funding is uncertain.

Dr. Watera Christine, the HIVDR Program Manager from the Uganda Virus Research Institute presented a summary of performance against selected indicators in the 10-year National HIV DR report. Dr. Watera highlighted the high replication rates of the virus, the long life nature of ART and emphasized that drug resistance is inevitable but preventable.

She informed the meeting that results from the five rounds of Early Warning Indicator survey conducted in (2006/7, 2008/9, 2012, 2014 and 2017); indicated that Uganda might be unintentionally promoting HIVDR through several practices.

She also informed the meeting of the findings of the Threshold Survey for Transmitted DR whose results revealed that; apart from one study which had TDR prevalence >15%, the other studies had low or moderate rates of transmitted drug resistance levels, among others.




*State Minister for Health - Sarah Opendi, CDC Uganda - Director Dr. Lisa Nelson, Director General Uganda AIDS Commission - Dr. Nelson Musooba, UVRI Director - Pontiano Kaleebu and Dr. Mugaga Kaggwa at the stakeholders meeting.*

NEWS

# UVRI open day 2018 unlocks students' potential in art in science student competition


*State Minister for Higher Education John Chrysostom Muyingo speaking at the UVRI Open Day.*

As part of our efforts to engage with stakeholders and promote research, we organized and held our third Science Open Day on 26th July, 2018 under the theme "Science for a Healthy World".

The event, held at the UVRI Entebbe Campus, hosted more than 900A-level science students from 24 schools including 4 upcountry schools, university undergraduate students and was officiated by Honorable Dr. John Chrysostom Muyingo, Minister of State for Education and Sports (Higher Education).

38 science stalls manned by enthusiastic scientists from MUII-Plus, UVRI, IDI, Makerere University, Makerere University Walter Reed Project (MUWRP), IAVI, MRC/UVRI & LSHTM, Rakai Health Science Program, Busitema University, Kyambogo University, among others, together with visits to some of our labs and mentoring sessions were some of the activities that comprised the Open Day.

Officiating at the event, the State Minister for Higher Education, Hon. Dr. John Chrysostom Muyingo praised Uganda Virus Research Institute for organizing the science fair as one of the avenues to promote science. "Science is not very well promoted in schools and the notion or attitude that science is too difficult prevails in many schools. I'm happy that Uganda Virus Research Institute (UVRI) has come up with the open days that can be used to promote the teaching and learning of sciences practically and also change that attitude that scientists are created in another world", said Hon. Dr. John Chrysostom Muyingo.

The Minister further stressed that Uganda needed to emulate developed countries that have embraced science and are manufacturing drugs, electronics and many other products. He disclosed that ministry of Education plans to recruit more than 2000 science teachers to enable Uganda build a culture of science and scientific research.

In his remarks the Director, Prof. Pontiano Kaleebu said that Open days inspire secondary school students to choose career paths related to science. Prof. Kaleebu added that the day gives the students an opportunity to see 'science in action' through the demonstrations and laboratory visits. He disclosed that Uganda Virus Research Institute has plans to become an affiliate of Makerere University with an aim of offering degrees in virology and related disciplines.

The Art in Science competition stall was a major crowd puller as students displayed their artworks on malaria prevention, neglected tropical diseases, effects of drug misuse, immunology in the tropics, and public health concerns in the world today.

The best schools that excelled in the Art in Science Competition were Entebbe Secondary School, Buddo Secondary School, and Iganga Secondary School. The three schools produced the most outstanding artwork and were awarded certificates of merit and plaques. Agha Khan High school, Mary Reparatrix Secondary School Entebbe and Midland Secondary School were also awarded certificates for their impressive artwork.

The objective of the competition was to improve the students understanding of health science and disease prevention perspectives using artwork

## UPDATES : *Research*

# Our Science

An MRC/UVRI & LSHTM funded study by Nakiboneka, Serwanga and others indicates that Interferon gamma (IFN-γ) negative CD4+ and CD8+ T-cells can produce immune mediators in response to viral antigens. Evaluation of antigen-specific T-cell responses to viral antigens is frequently performed on IFN-γ secreting cells. They evaluated the extent of missed T-cell functions when IFN-γ secretion is used as a surrogate marker for further evaluation of T-cell functions. They found CD4+ and CD8+ cells expressing other cytokines like IL-2, Perforin and TNF-α to antigens. These findings suggest that studies evaluating immunogenicity in response to HIV and Adenovirus viral antigens should not only evaluate T-cell responsiveness among IFN-γ producing cells but also among those T-cells that do not express IFN-γ.

UVRI scientists working with their colleagues in Glasgow University, led by Dr Emma Thomson and at Sanger led by Dr Manj Shandhu, have identified new highly diverse hepatitis C strains in Uganda and Democratic Republic of Congo (DRC). Using next generation (NGS) and Sanger sequencing, they have detected the following genotypes (g) 4k, 4p, 4q and 4s and a new unassigned genotype 7 HCV strain. Two additional unassigned g7 strains were identified in patients originating from DRC (one partial and one full ORF sequence). These g4 and 7 strains contain polymorphisms associated with resistance to highly effective direct-acting antiviral drugs which WHO recommends to achieve hepatitis C elimination by 2030. Clinical studies are therefore indicated to investigate treatment response in infected patients.

International Aids Vaccine Inniative (IAVI) and UVRI scientists will participate in a study to test whether an injection of cabotegravir (CAB) given once every two months works better than a Truvada pill taken every day for HIV prevention in women.
HPTN 084 (LIFE) is the first study to be conducted and will take place in Botswana, Kenya, Malawi, South Africa, Swaziland, Uganda and Zimbabwe. The study will enroll about 3,200 women who are HIV uninfected. Women who join the study must be 18-45 years old. The study will last close to 4.5 years.

Women in sub-Saharan Africa are at risk for HIV and new effective methods of HIV prevention are needed. A Truvada pill taken every day containing two drugs, TDF and FTC (TDF/FTC), is currently recommended by the World Health Organization (WHO) for use as PrEP (pre-exposure prophylaxis: the use of medication to prevent infection) for people at risk for HIV infection.
Taking a daily pill for PrEP can be an effective tool for preventing HIV, but remembering to take a pill every day can be hard for some people. Newer, safe PrEP products that do not need to be taken every day are needed for people who may find it difficult or not want to take a pill every day.

In HPTN 084, researchers hope to learn whether an injection of CAB given once every two months is safe and works better than a Truvada pill taken every day in women. Researchers also hope to understand what women think about receiving CAB injections and taking Truvada pills for PrEP.

Women who enroll in the study will be assigned at random (like flipping a coin) to either Group A or Group B. Each woman in each group will get an injection in the buttock every two months and a daily pill.

UVRI-IAVI will enroll 147 women. Enrolment started 2 weeks ago and currently we have enrolled 20 women.

A randomized controlled clinical trial study by A. Abaasa, A. Kamali, A. Elliott and others looking at the effect of high-intensity versus low-intensity praziquantel treatment on HIV disease progression in HIV and Schistosoma mansoni co-infected patients showed that in communities with a high burden of both S. mansoni and HIV infection, high-intensity treatment of S. mansoni does not delay HIV progression despite relevant benefit for parasite clearance.

Another cluster randomized trial by R. Sanya, A. Elliott and others looked at the impact of intensive versus standard anthelminthic treatment on allergy-related outcomes, helminth infection intensity and helminth-related morbidity in Lake Victoria fishing communities, Uganda. They show that despite reductions in S. mansoni intensity and hookworm prevalence, intensive mass drug administration (MDA) had no effect on atopy, allergy-related disease or helminth-related pathology. This could be due to sustained low-intensity infections, thus a causal link between helminths and allergy outcomes cannot be discounted. Intensive community-based MDA has limited impact in high-schistosomiasis-transmission fishing communities, in the absence of other interventions.

## UPDATES : *Research*

# Our Science

A recent study published in the Journal of General Virology by Kayiwa J, Lutwama JJ and others has confirmed Zika virus infection through hospital-based sentinel surveillance of acute febrile illness in Uganda. Out of 384 samples from Nkokonjeru, three were confirmed by plaque reduction neutralization test to be ZIKV infections though reverse transcriptase polymerase chain reaction (RT-PCR) negative.

In collaboration with colleagues at Makerere led by Dr Wayengera Misaki, we have identified and validate conserved B cell epitopes of filovirus glycoprotein, this could lead towards rapid diagnostic testing for Ebola and possibly Marburg virus disease. This work was published in October in BMC Infect Dis. 2018

UVRI has worked with a number of other institutions to continue studying HIV drug resistance among these studies is one done in partnership with MSF showing low protease inhibitor resistance at the time of second line treatment failure.

Finally, and important study published in Nature Communications where some of our scientists, R. Downing, P. Hughes and Sendagala performed phylogenetic reconstruction of whole genome sequences of 249 contemporaneous S. Typhi isolated between 2008-2015 in 11 sub-Saharan African countries, in context of the 2,057 global S. Typhi genomic framework. Multi Drug Resistance phenotype was found in over 50% of organisms restricted within the dominant genotypes, specifically in children aged <15 years.

# Zika forest, an epicenter for research on mosquitoes and diseases


Zika forest is a centre of attraction for local, national and International visitors. The forest has become famous after the outbreak of Zika virus in Brazil in 2015. Since that time, many researchers continue to visit the Uganda Virus research institute and the forest to find out more scientific facts about the forest, the monkeys and the Aedes mosquitoes.

Zika Forest, is a tropical rain forest near Entebbe in Uganda (Latitude 0° 8' N, Longitude 32° 32'E) on the shores of Lake Victoria. It is the property of the Uganda Virus Research Institute (UVRI) and it is protected and restricted to scientific research. The forest covers an area of about 25 hectares (62 acres) next to the swamps of Waiya Bay, an inlet of Lake Victoria.

# UPDATES : *Research*

The size of the research area of the forest is about 12 hectares (30 acres). The forest has a rich biodiversity in plants, insects and animals, and is home to about 80 species of mosquitoes. Zika Forest is easily accessible and combines several ecosystems, which makes it well suited for the study of mosquitoes and the diseases that they transmit.

Mosquito studies were initiated in this forest way back in the 1930s at the beginning of UVRI, then called the Yellow Fever Institute, in 1936. Interesting studies then identified quite a number of mosquito species and viruses from the forest. These included viruses like Zika Virus which was identified in 1947 from a sentinel bait Rhesus monkey and mosquitoes in the forest.

In 1961, a 120 feet tall steel tower was constructed in the forest to enable more intense mosquito and arbovirological studies. This tower allowed for studies of vertical distribution and biting behavior of mosquito populations; and also afforded the studies of the medical importance of some mosquito species in Zika Forest. These studies have enhanced our understanding of the transmission and maintenance cycles of these arboviruses. Most of the known information on the daily movement, biting, mating and egg laying activity and behaviour of African mosquitoes was studied from this tower

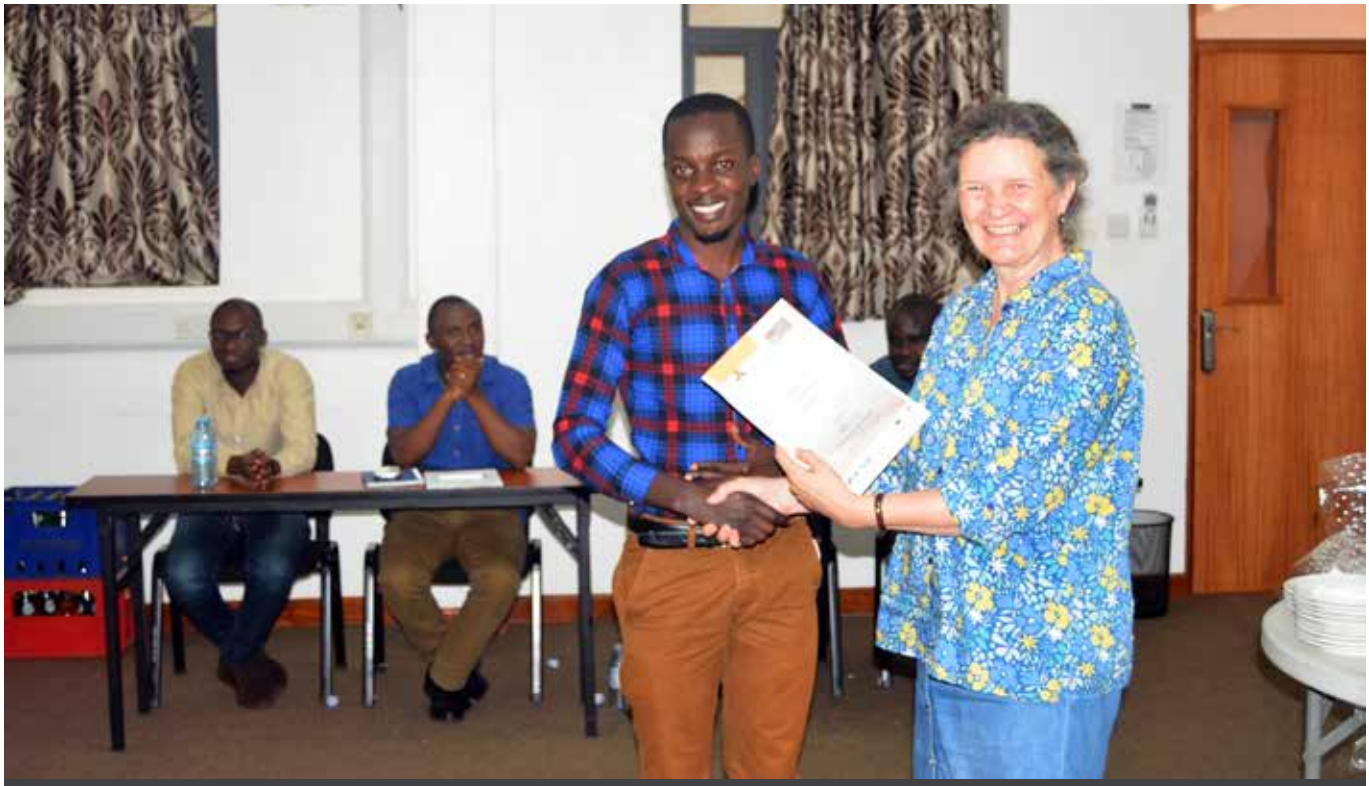
It is on record that some 224 different species of mosquitoes are known in Uganda with about 80 of these species occurring in Zika forest alone. Some 75 -77 arboviruses are known to be present in Uganda at one time or another. Over 30% of these were first identified from Uganda. A good proportion of these are known to circulate in Zika forest. Their periodicity and zoonotic cycles have for many years been followed up in Zika forest.

Currently, the forest is surrounded by new homes, crop fields and plantations. The ecosystems adjacent to the forest have been significantly modified as a result of human activity. All land uses around Zika Forest greatly exploit the forest habitat and indirectly affect the animal and mosquito community. Studies elsewhere have shown that forest modification and clearing have a negative impact on biodiversity. When the animals that the mosquitoes feed on are interfered with, this may lead to the mosquitoes turning to using humans as baits.

The fact that human activity has increased tremendously in and about Zika forest is a health hazard, not only for the people around the forest but also for the whole country. While most of the forest area under the jurisdiction of UVRI has remained very well protected, the areas of the forest out of UVRI field station gazetted land is being encroached upon seriously. UVRI continues to appeal to government to gazette the whole forest as a protected reserve forest for research purposes.

UPDATES : Training & *Capacity Building*

# UVRI internship experience: Shaping the next generation of scientists and researchers



*Professor Alison Elliot handing over a certificate to one of the students who excelled in the abstract competition*

A skilled and motivated workforce is essential to advance national and global health goals. Uganda Virus Research Institute as a leading research institution in Uganda is committed to building a diverse pool of professionals in public health. UVRI offers a wide range of opportunities for students and graduates to gain insight in the science and administrative programmes but also gain knowledge and experience necessary to further their careers.

The Uganda Virus Research Institute internship programme is a unique opportunity that aims to help students meet their educational and institutional requirements for the award of their degrees, diploma and or certificates. The programme exposes students to the culture and disciplines within their areas of specialisation and equips them with relevant knowledge and skills. The goal of this program is to attract talented and motivated young people into careers in health research and research support.

Our internship programme is an entry level for research training and is managed by the training administrator and the UVRI training committee. At least 100 interns are expected to join the programme every year. However, this year, over 300 applications were received highlighting the demand and popularity of this programme. The programme is supported by MUII-plus and other partners, and interested students obtain a standard application form from MUII-plus website or a hard copy from the training administrators' office which is filled and returned with a CV and letter from the University for continuing students.

Internship at UVRI runs throughout the year with June to August being the peak period targeting undergraduates, and there is an induction programme at the start of internship. On the report date, students are met by the UVRI senior officer and briefed on, among others; Research done at UVRI, health, safety and Biosecurity, curriculum vitae and proposal writing, role of social ►

# UPDATES : *Research*

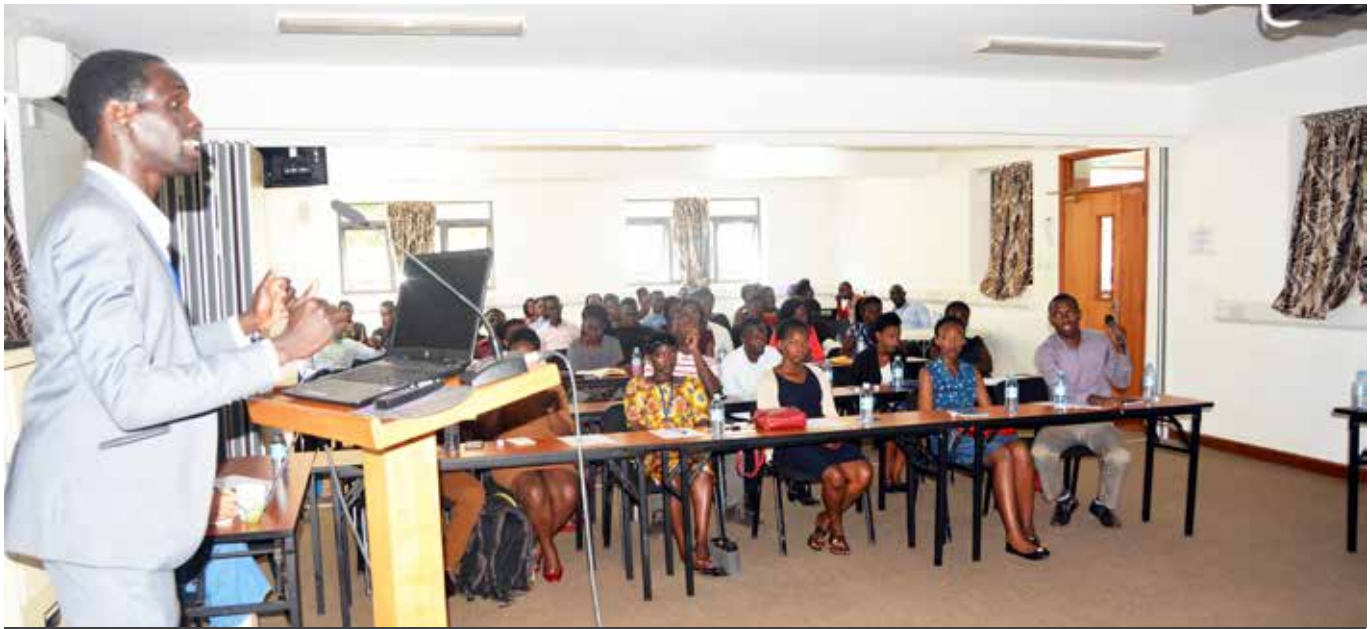
*The Director UVRI, Prof. Pontiano Kaleebu administering the Official oath and Oath of secrecy to interns during the June to August 2018 students' induction.*

science in health research, presentation skills, statistics in research, ethics in research, communication and media in health research.
The student also take an official oath and oath of secrecy administered by Director, and on addition they are given an inspirational talk.

At the end of the internship period, there is an abstract competition organized where students give a power point presentation to a panel of adjudicators on what they have done, learnt or observed while at UVRI. This is either done in groups or individual basis. The first, second and third winners get cash prizes. Certificates of participation are also given to all. The initial placement is for three months but can be extended to six months. All students are required to write a report and submitted to UVRI training committee.

**Other training opportunities:**
Persons with disability (PWDs) internship programme

MUII-plus is keen to support people with disabilities to participate in internship programmes. One of the first two interns, Julius Mutagubya, was recruited as data management assistant with the MRC/UVRI & LSHTM. Two other students were also offered placements.



*One of the students giving a power point presentation at the students' competition.*

INTERVIEW

# An Interview with the UVRI Director Prof. Pontiano Kaleebu

Prof. Pontiano Kaleebu is a medical Doctor with specialty training in Immunology and Virology. In 2016, he was appointed Director UVRI, where he has worked for thirty years and risen through the ranks. He did his postgraduate training at the Royal Post Graduate medical school- Hammersmith and St. Mary's College-Imperial College, which were, then under University of London but are now both part of the Imperial College. He is also the Director of the MRC/UVRI and LSHTM Uganda Research Unit. Our reporter had a chat with him about the new position and his plans for the Institute.

**You trained as a medical doctor, what inspired you to join research?**

At the time of completion of medical school at Makerere University (1981-1986), we started noticing a new disease. While working at Nsambya hospital in 1987/88, i saw many people dying from this new disease that had no treatment. It was then that I thought that maybe there was an opportunity to find out more about the new disease.

Secondly, I did not feel that clinical medicine was my calling. From the brief time in the hospital and the long hours of work, I felt that clinical medicine would become monotonous, so I thought of looking for other opportunities. Luckily, I knew about UVRI, even before I joined and when I spoke to some people, I was told there were some opportunities

**Did the move from clinical practice to research meet your expectations? Was it for example less vigorous and as exciting as you had anticipated?**

Well, I have found research to be as exciting as I had anticipated. Every day is different. The work we do is interesting, every day brings on new challenges. It is not the same as going to the clinic every day, seeing a pattern of diseases and giving prescriptions. However, research is engaging and calls for a lot of dedication.

**As Director UVRI, what is the shift like from active research to management?**

Even before I became Director, I was involved in management. With research, it is inevitable that the more senior one becomes, the more involved in management they become. Therefore, I was a

manager before I became a Director. I have risen through the ranks, from Researcher, senior researcher, Assistant Director, Deputy Director before I became the Director of UVRI.

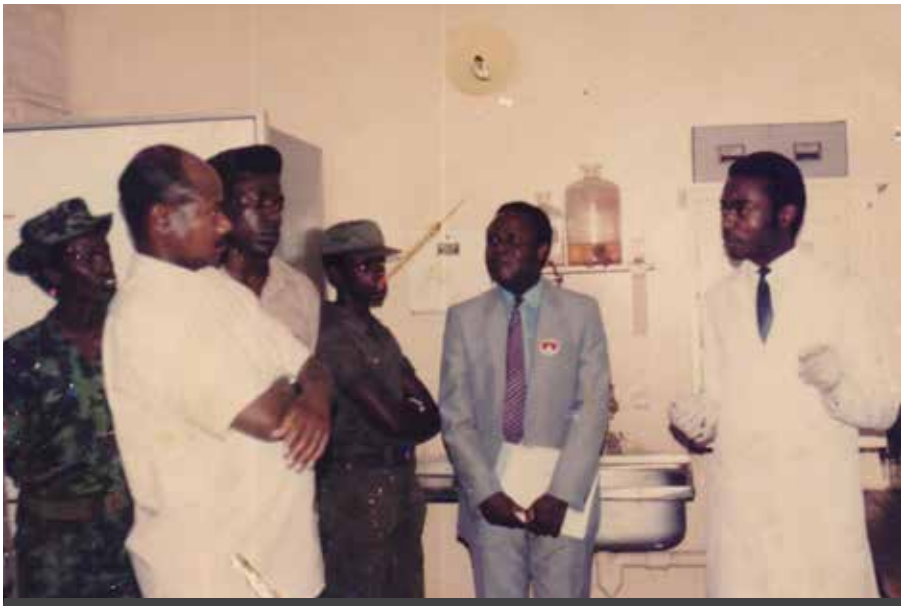
But before my appointment as Director of UVRI, I had some prior experience. I was the founding Director of UVRI/IAVI HIV Vaccine Program for nearly 10 years before I became the Director of the MRC/ UVRI Uganda Research Unit; and all these positions built my experience.

However, because UVRI is a government institution, the directorship is different in some aspects from earlier directorships I have held. As UVRI Director, I have increased interaction with government through the Ministries of Finance and Health on financial and policy issues respectively; I have to interface with parliament to defend the institute budget. These are some of the new aspects in management that I had previously not closely worked with.

**It has been almost two years since you took office as Director UVRI, what are some of the challenges you have faced?**

As head of both the MRC/ UVRI and LSHTM and UVRI, I am able to make some comparisons; there are some areas that pause obvious challenges. One obvious challenge is limited funding.

Institutions like the MRC/UVRI and LSHTM Uganda Research Unit have reasonable funding and therefore staff morale and the way work is done is different; staff tend to deliver better because they have better pay. Unfortunately, in government, the challenge of poor pay is still very significant. But there is also an attitude issue; a few staff tend not to produce to their best capability because they know that their employment is permanent and pensionable. Another challenge has been the limitation to recruitment for government positions. We need to recruit people and give them opportunities to train and build their careers. If we train and mentor more people, then they can write more research grants and do not have to depend on the limited government funding. They can then build their own research teams and work in an enjoyable research environment.



*Prof. Kaleebu and former UVRI Director Dr. SDK Ssempala show H.E President Museveni work in the arbovirology department during his visit in 1988.*

**What strategies or plans have you put in place to address these challenges?**

We need to lobby for more support from the government. We have embarked on advocacy for our work within the Ministries of Health, Finance and other departments even the Parliament. The profile of the work that we do needs to be known and probably get more people to come and visit the Institute. Public and policy Engagement is going to be key. I am glad to note that we have started to receive more funding from government.

We also need to increase the institute's portfolio of products for example by getting involved in diagnostics and vaccine development for some of the infections that we see in our populations. If we can get the capacity to diagnose these emerging and reemerging infections, conduct research locally without shipping specimens and develop vaccines, we will go a long way in addressing some of the challenges we face as an institute.

Training is also important, we are working on strengthening and building more partnerships with Universities. We have opportunities through the MRC/UVRI and LSHTM to collaborate with the LSHTM, which should increase our capacity to do research but also for career growth of our scientists. Our partnership with Makerere University is growing stronger and stronger. We strive to have in place adequate infrastructure and build strong partnerships and collaborations to ensure that we conduct good local research.

Better pay of both scientists and non-scientific staff and career development will go a long way in addressing the staff morale issues. We are working to address this and I am glad to note that UVRI, unlike other government institutions, is unique. We receive some funding from projects and that helps us to top up on some staff salaries unlike other government agencies that entirely depend on government funding. Therefore, if people write more grants, there will be an increase in top-up to the salaries. We are also considering improving the environment in which our people live and work. We for example have houses, but they are in bad state and improving them will go a long way in motivating staff. Access to services like transport and training will also be key areas for consideration.

**Where do you see UVRI in the next five years?**

I would like to see the institute become more autonomous, so that we can raise more funding. We for example cannot get funding from some institutions because we do not have a legal entity. If in the next 1-2 years we are able to become a legal

# INTERVIEW

entity, we will be in a better position to raise more funding. We have made some steps in this direction by receiving a vote, which enables us to receive money directly from the Ministry of Finance and not through the Ministry of Health as it was in the past. This has made a huge difference, but becoming a legal entity will open more doors.

We also want to broaden and increase our work in other areas; we have done very well in the area of HIV research and emerging infections and now need to move into other areas. For example, working with MRC, we want to explore new areas like cancers; there are many cancers caused by viruses, which provides us an opportunity for research. We need to train more people so that we have more young and mid-level researchers who can bring in more funding.

We want to strengthen current partnerships, but also build new ones. We are for example exploring the possibility of the institute becoming an affiliate of Makerere University; this would enable us to for example award degrees in areas like Immunology and Virology. We would remain an autonomous institution though.

**Looks like there is a lot that needs to be done, how will you ensure that it actually gets done?**

This will be a *'Kisanja Hakuna Mchezo'* era; everyone will have to do his or her bit of work. We have told our staff who want to be promoted that they will have to show cause for the promotions; they will have to present strong CVs, have evidence of publications they have authored and show capacity to write grants and attract funding. Having been at the Institute for so long cannot be reason enough to warrant a promotion. There are number of vacant positions at the Institute and we want to have these filled. We are however not thinking of just filling these positions but ensuring that we attract quality people. This will help us to move forward.

**What are some of the achievements that have been attained in the two years so far, that you have been Director?**

We recently became one of two centers of the Global Virus Network in Africa; this is a very prestigious network led by Prof. Robert Gallo of Maryland. Most of the centers in Africa are affiliates, but I am glad to note that the UVRI is a full center. For any institution to become a center various factors such as the caliber of the Director and the work conducted at the institution among others, are considered. I am glad that we passed the mark. Being part of this network raises the profile of the institute and increases training and funding opportunities. The Institute can jointly work on funding applications with other network members.

We have brought in more technology, especially in the areas of virus characterization. Taking on from the previous UVRI Director, we have encouraged people from different on-campus institutions to work together and share the available facilities. Some of this technology, for example Next Generation Sequencing has enabled researchers to discover and generate more results, which in turn can increase outputs such as publications.

**You are Director of both UVRI and MRC/UVRI and LSHTM Uganda Research Unit, should we expect more collaboration between UVRI and the MRC Unit? What are the implications for the other partners on the UVRI campus?**

There are opportunities that we need to make use of to benefit both UVRI and the MRC Uganda Unit. Fortunately, I am also involved in the activities of the other key partners on campus. For example, I am a co-founder of the UVRI/IAVI HIV Vaccine program and a member of the board of directors. We'll promote stronger partnerships and collaborations, for example we have already had scenarios where instead of putting in separate grant applications, we agreed on joint submission and implementation.

The MRC Scientific Advisory Committee was recently here and noted that since there is one Director for both UVRI and the MRC Uganda Unit, there was need to leverage on each partner's strengths. For example, they noted that UVRI has a history in research in viruses and since MRC was expanding their research in new, emerging and re-emerging infections, these were potential areas for collaboration. Other areas of collaboration include sharing equipment, space and even training funds so that everyone benefits. A successful UVRI is good for the MRC Uganda Unit and a successful MRC Uganda Unit is good for UVRI.

**You are without a doubt a very busy person; do you have a life outside work?**

I am a workaholic! I find very little time to do other things and it does affect the time I have for family and friends. I try my best to make time for my family, but I must confess I have lost some friends because I am not in touch with them. I do take off some weekends to do private stuff. I used to play tennis and twice reached the semifinals and finals in the Uganda Junior Tennis Cup. I was the Tennis club captain at St. Mary's College Kisubi and also for Northcote Hall at Makerere University. Unfortunately, I have not played in a very long time because I am often engaged. I also used to enjoy football and support Arsenal, but I have not followed them in a while; their game became disappointing along the way.

**So, where do you see yourself after UVRI?**

When I leave UVRI, that will be real retirement; we scientists never retire but step aside and support others, mentor and help others to bring in money, contribute to publications etc. One slows down, but not completely retire. Having accumulated a lot of knowledge along the way, it would be a disservice to just walk away from everything that you have been part of. Our colleagues from the developed countries remain supportive even in retirement and I too hope that I will be able to do that. But I also have a lot of personal plans for my retirement; I want to be able to have time with my family.

**How would you want the people at UVRI to remember you when you leave?**

I would like to be remembered as someone who devoted a lot of his time, energy and resources to the development of research and to the success of this institute.

UPDATES : *Research*

# UVRI approved as regional reference laboratory for yellow fever

Uganda Virus Research Institute was certified by the World Health Organization to perform yellow fever regional reference laboratory functions.

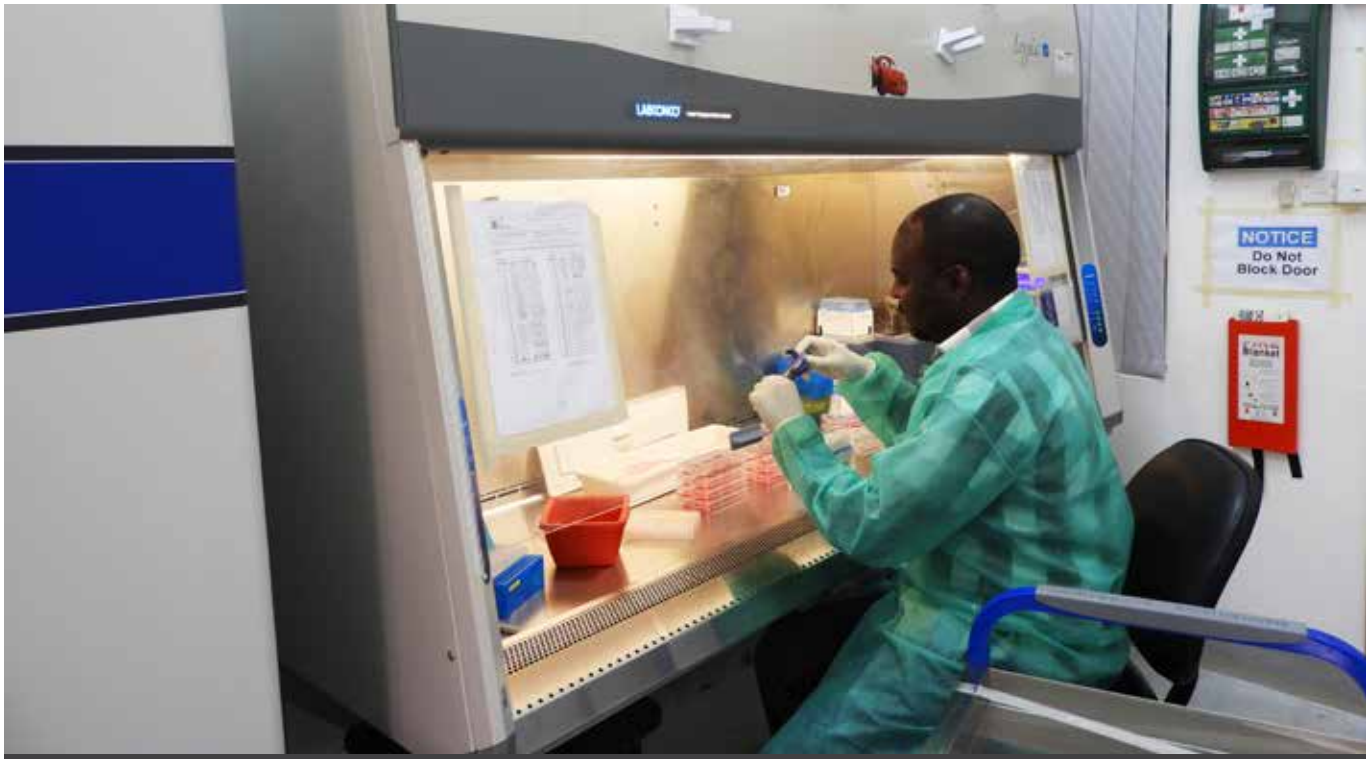
The certification means UVRI's Arbovirology's laboratory will provide yellow fever confirmatory testing for suspected outbreaks and providing quality control support for laboratories in Kenya, Tanzania, Burundi, Rwanda, South Sudan, Eritrea, Ethiopia and Zambia. This means UVRI has the only certified Yellow fever reference laboratory in Eastern Africa and the second in the African Region. The other reference laboratory is in Senegal.

With this status, UVRI's regional reference lab will support yellow fever diagnostic surveillance and train personnel from other countries to set up national laboratories in their respective countries.

The arbovirology laboratory will be receiving further support from WHO and its partners for Yellow Fever testing reagents, equipment, and technical assistance among others.

**About Yellow Fever**
Yellow fever (YF) is a viral haemorrhagic fever found in tropical regions of Africa and the Americas. It principally affects humans and monkeys, and is transmitted by the Aedes mosquitoes infected with the YF virus. Symptoms of yellow fever include fever, headache, jaundice, muscle pain, nausea, vomiting and fatigue

According to WHO, the disease is untreatable and case-fatality rates can exceed 50% among severe cases. Yellow Fever can be prevented through immunization with the 17D YF vaccine, which is safe, inexpensive and reliable. A single dose provides protection against the disease for at least 10 years and possibly throughout life.




*UVRI Laboratory Manager John Kayiwa performing an experiment in one of the laboratories certified for Yellow fever diagnosis.*

NEWS

# UVRI clinic-extending services to the community

*A nurse administering a dose of polio vaccine at UVRI clinic*

The Uganda Virus Research Institute Clinic, serves as a health center II under Entebbe Health Sub-District (EHSD). The clinic is located in a strategic place that ensures privacy to our clients, yet easy to access. Our services include routine HIV testing and counselling, out patients medical care, family planning, immunizations, internship training and antenatal services. The clinic also provides basic health services to research volunteers, staff and neighbouring research community.

In addition, the clinic conducts and supports health research to contribute to the mission and vision of UVRI, the current National Health Policy and the National Development Plan. It collects routine data to aid monitoring and evaluation, planning and prioritization of potential interventions by EHSD and Ministry of Health. It supports training, internship programmes and other capacity building activities at UVRI including grant sourcing, networking and community mobilization.

Over the years, the community has gained confidence in the quality of our services, which has nearly transformed the clinic into a referral-testing centre for HIV testing. We receive a number of clients countrywide referred for HIV test confirmation and other services.

In the months of July through September, the clinic received 814 clients for OPD services, testing 349 for malaria with 1.7% testing malaria positive. 403 clients for HIV testing services with 3% testing positive, and referred for ART. The clinic offered family planning services to 85 mothers, and 959 children vaccinated, with 56 children receiving Diphtheria-pertussis- tetanus DPT3.

The clinic actively participates in community services. We aim at extending services to our community as a strategy to promote health. We have had a number of community outreaches, where we have vaccinated 247 ten-year-old girls against Human papillomavirus (HPV). We also plan to offer antenatal care services to the community.

NEWS

# 9th EDCTP forum held in Lisbon, Portugal with call for more partnership and collaborations to address diseases in Sub-Saharan Africa


*The Executive Director, Dr. Micheal Makanga during his Opening remarks in Lisbon, Portugal.*

On September 17- 21st 2018, The 9th European and Developing Countries Clinical Trials Partnership (EDCTP) forum took place in Lisbon Portugal. The theme of the ninth EDCTP Forum, held in partnership with the Portuguese Foundation for Science and Technology, was *"Clinical research and sustainable development in sub-Saharan Africa: the impact of North-South partnerships"*. The forum started with a high-level meeting for the representatives of the EU Assembly from the Participating states representatives. The Minister of State for Health (Primary Health Care) Hon. Sarah Opendi and UVRI Director Prof. Pontiano Kaleebu represented Uganda in the high-level meeting.

*The UVRI EDCTP Program Manager Emilly Nyanzi Kabuye (Mrs) Left, with some participants.*

Over 500 delegates attended the 9th EDCTP forum that discussed the impact of Europe-Africa partnerships in enabling the clinical research environment in developing countries to meet the sustainable development goals. The need for increased awareness and global cooperation for preparedness against disease outbreaks, public health emergencies, and strengthening health systems was also emphasised.

In his opening remarks, the Executive Director Dr. Micheal Makanga emphasized the need for partnerships and collaborations to reduce Poverty related diseases in sub Saharan Africa.

"The whole idea of EDCTP, is built around partnerships and collaborations to reduce Poverty related diseases in sub Saharan Africa. International cooperation and coordination are vital for achieving our mission goals and are at the Heart of the EDCTP approach" Dr. Makanga said.

Every Two years EDCTP organizes a forum for EDCTP funded grants and awardees. The aim is to assess progress with project activities, share best practices and challenges experienced in project implementation. The Forum is rotational in both European and African countries. The 8th EDCTP Forum took place in Zambia – Africa and the just concluded 9th EDCTP forum took place in Lisbon- Portugal.

The European & Developing Countries Clinical Trials Partnership (EDCTP) funds clinical research to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria as well as other poverty-related infectious diseases in sub-Saharan Africa, with a focus on phase II and III clinical trials.

UPDATES : *Operations*

# Human Resources Management Unveils UVRI Client Charter

*By: Monica Katusabe*

I am pleased to introduce the Uganda Virus Research Institute client charter which expresses the commitments UVRI has made to provide quality and timely services to its clients. A client charter is a social contract between an organization and its clients and stakeholders. It sets out service standards that the clients & stakeholders should expect and the commitment to continuous service improvement. At UVRI we have both internal & external clients.

This Charter is meant to institutionalize a mechanism for monitoring quality of services provided by the Uganda Virus Research Institute. It provides information on our service, responsibilities and standard of service clients expected from us. This charter is in conformity with the Public Service Strategic Framework aimed at increasing public accountability and performance in the delivery of our mandate.

With this charter our clients are expected among others to have access to timely and quality services, access to public information in accordance to the Access and Information Act 2005, transparent service delivery, timely response and feedback, be treated with respect.

Through this charter our clients are also expected to respond to requests for information from us thoroughly and timely, demand for service provision, appropriately identify their needs and deal with our staff with courtesy.

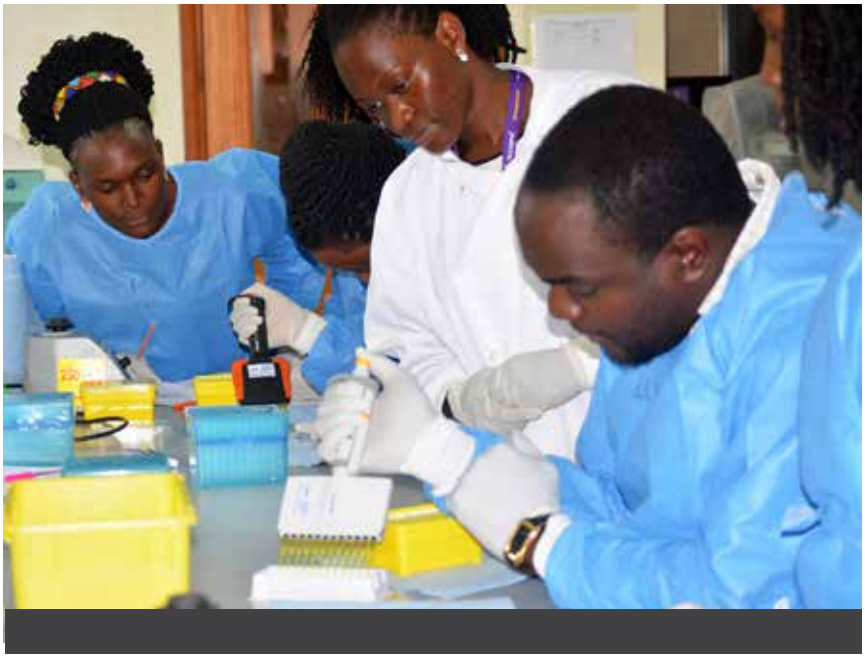
UVRI guarantees availability of different channels for clients to provide feedback on services rendered or any other issue of interest through our feedback system that includes; direct feedback to the person serving you, feedback through a supervisor that is readily available, dialogue in form of meetings and suggestion boxes among others.
The charter also provides a mechanism for handling complains and concerns raised. In case of dissatisfaction, our clients are encouraged to file their complaints and suggestions through the following channels;

(a) The person serving them.
(b) The supervisor or Head of Department.
(c) The person designated as the client services officer.

UVRI will ensure that policies, regulations and guidelines are disseminated to all our clients. In the charter, we commit ourselves to our own service delivery standards and norms. We are committed to offer quality services to our clients and stakeholders. In turn we expect our clients to continuously provide feedback on the standards of service we offer and avail us opportunity for assessment which will be the basis for timely intervention where minimum standards and norms are not met. This will in turn help us improve our performance.

UVRI recognizes the potential benefits of this client charter as a means to delivering better services to our stakeholders.

I encourage all our staff to be professional, accountable and responsive to our client's needs and expectations.



UPDATES : *Partners*

# MRC-Stroke study to provide local data on risk factors in Uganda

A systematic review conducted as part of a study to assess the risk factors for haemorrhagic (HS) and ischemic stroke (IS) in Sub-Saharan Africa (SSA) - The Stroke Study, has suggested that HIV is a risk factor for all stroke, although it is more prevalent among those with IS rather than HS. A similar finding was observed in a study from Malawi and Tanzania where the overall prevalence of HIV infection among patients presenting with stroke was 20.9%. It is well recognized that both HIV infection and antiretroviral therapy (ART) could potentially increase an individual's risk of stroke.

Funded by the MRC (UK), the study, "haemorrhagic and ischemic stroke in urban Uganda: risk factors, outcomes, caregiver burden and experiences", is being conducted in Uganda's St. Francis Hospital Nsambya by a team of researchers from MRC/UVRI and LSHTM Uganda Research Unit.
It is a compilation of four sub-studies; sub-study I is a systematic review to obtain information on risk factors for haemorrhagic and ischemic stroke in Sub-Saharan Africa while sub-study II is a hospital based case control study to obtain baseline information on risk factors for haemorrhagic and ischemic stroke.

Sub-study III is a prospective cohort study to obtain information on outcomes and associated factors for haemorrhagic and ischemic stroke and sub- study IV is a descriptive cross sectional study to obtain information on caregiver burden and experiences among caregivers attending to stroke patients.

Worldwide, stroke is a leading cause of death and of chronic disability. It is estimated that 15 million people suffer a stroke annually; of these, five million die and another five million are left permanently disabled, placing a burden on family and community. Approximately 85% of deaths occur in low and middle income countries. In SSA stroke represents an important part of the chronic disease burden, but there are relatively few data on stroke risk factors and its outcomes.

Although the risk factors for HS and IS appear to vary considerably between countries, hypertension remains the most important stroke risk factor globally and populations in SSA appear to be more at-risk of developing hypertension and subsequent stroke compared to the western world. This difference could be accounted for by a combination of factors, including inadequate funding and lack of infrastructure, which often impair diagnosis, screening, treatment and control of hypertension in SSA. According to the systematic review, several non-modifiable risk factors for stroke, such as age, gender, race, ethnicity, and heredity; and potentially modifiable risk factors such as hypertension, atrial fibrillation (irregular heart beat) (AF), hyperlipidemia, Diabetes Mellitus, cigarette smoking, physical inactivity, and transient ischemic attack (TIA) were identified in SSA. The INTERSTROKE study demonstrated the commonality of the main risk factors for stroke in SSA: hypertension (37%), alcohol intake (11%), physical inactivity (12%), and Diabetes Mellitus (12%).

Of the12 studies reviewed as part of this work out of 562 that were identified from different online repositories, there were only five case-control studies from SSA that reported information on risk factors for all stroke. Only one study reported data on IS and HS risk factors separately. Furthermore, the vast majority of cases were identified in hospital and so are unlikely to be representative of the totality of stroke cases in the community.

Speaking at a meeting at the end of the study, Dr. Edward Ddumba, the Medical

## UPDATES : *Partners*

Director of St. Francis Hospital commended the MRC/UVRI and LSHTM Uganda Research Unit for initiating the study as it would provide local data that would improve care and management of stroke patients. “Most of the available data on stroke are from the western world, where for example patients are generally older and of different socio- economic backgrounds, compared to those we are seeing in Uganda. “ “This work will help us to understand stroke in the local context and therefore improve patient management and make healthcare in Uganda more affordable”, he added.

According to Dr. Gertrude Namale, the Principal Investigator of the study, “In Uganda, stroke is one of the top five causes of adult death, largely due to the high prevalence of modifiable risk factors such as hypertension. It accounts for 3.7% of all admissions in Uganda’s hospitals”.
She however noted that data on risk factors and outcomes for haemorrhagic and ischemic stroke in urban Ugandan are limited. “Up-to-date data are required to estimate the current impact of stroke in Uganda and the required resources to meet this increasing disease burden”.

Poor control of risk factors, especially hypertension, may contribute to the rising stroke burden. In Uganda, hypertension is more prevalent in urban (25.5%) than in rural (24.4%) areas. It is hoped that this work will inform policy makers and scale up routine screening for and treatment of cardiovascular risk factors for stroke in Uganda.

**Notes;**
Ischemic stroke occurs as a result of an obstruction within a blood vessel supplying blood to the brain while hemorrhagic stroke results when a blood vessel in the brain ruptures or breaks, spilling blood into the surrounding tissues.

# Rakai Health Sciences Program(RHSP) scoops 2018 Al Sumait Prize for Health

Rakai Health Sciences Program(RHSP), was announced as a joint winner of the 2018 cycle of Al Sumait Prize for African Development in the field of Health.  RHS was among the three joint winners of the Million Dollar 2018 Al Sumait Prize.

Half of the Prize was awarded to Professor Salim S. Abdool Karim, Director of the Centre for the AIDS Program of Research, Pro Vice-Chancellor (Research) at the University of KwaZulu-Natal in South Africa and Professor at Columbia University.

The second half of the prize is to be shared equally between Professor Sheila K. West Vice Chair for Research Wilmer Eye Institute at Johns Hopkins University School of Medicine, and the Rakai Health Sciences Program.

The winners were recognised for their exemplary work in health improvement on the African continent.

Rakai Health Sciences Program was particularly recognised for its important role in improving public health in the African continent by fighting against HIV/AIDS and sexually transmitted diseases, and for discovering -*three decades ago*- the first clinical symptoms of what was then a new medical phenomenon called "slim disease" on the African continent.

The RHSP program also succeeded in documenting the importance of male circumcision and its positive impact as an effective means of reducing HIV and other sexually transmitted diseases. The program’s publications in prestigious medical journals have had a significant impact on health policies in Africa and the world.
RHSP employs 350 full-time Ugandan research and clinical staff that include epidemiologists, demographers, clinical and basic science researchers, behavioral, laboratory scientists, and research support staff.  Additional RHSP staff, about 370, provide HIV treatment and prevention services resulting from RHSP research.

Professor Abdool Karim was recognised for his contributions to science in HIV treatment and prevention over the past three decades, which have led to significant changes in health policy and practices worldwide.

Professor West was also recognised for her dedicated research focused in Africa on ways to improve trichiasis surgery outcomes and eliminate blinding trachoma. Her work has contributed to the control of blindness for both children and adults.

The prize amount of one million US dollars, offered by the State of Kuwait, is awarded annually to individuals or institutions within one of the three fields of Food Security, Health and Education.

NEWS

# UVRI End of Year Party celebrated in style

On 19th December 2018, Uganda Virus Research Institute held its end of the year party at the UVRI gardens.

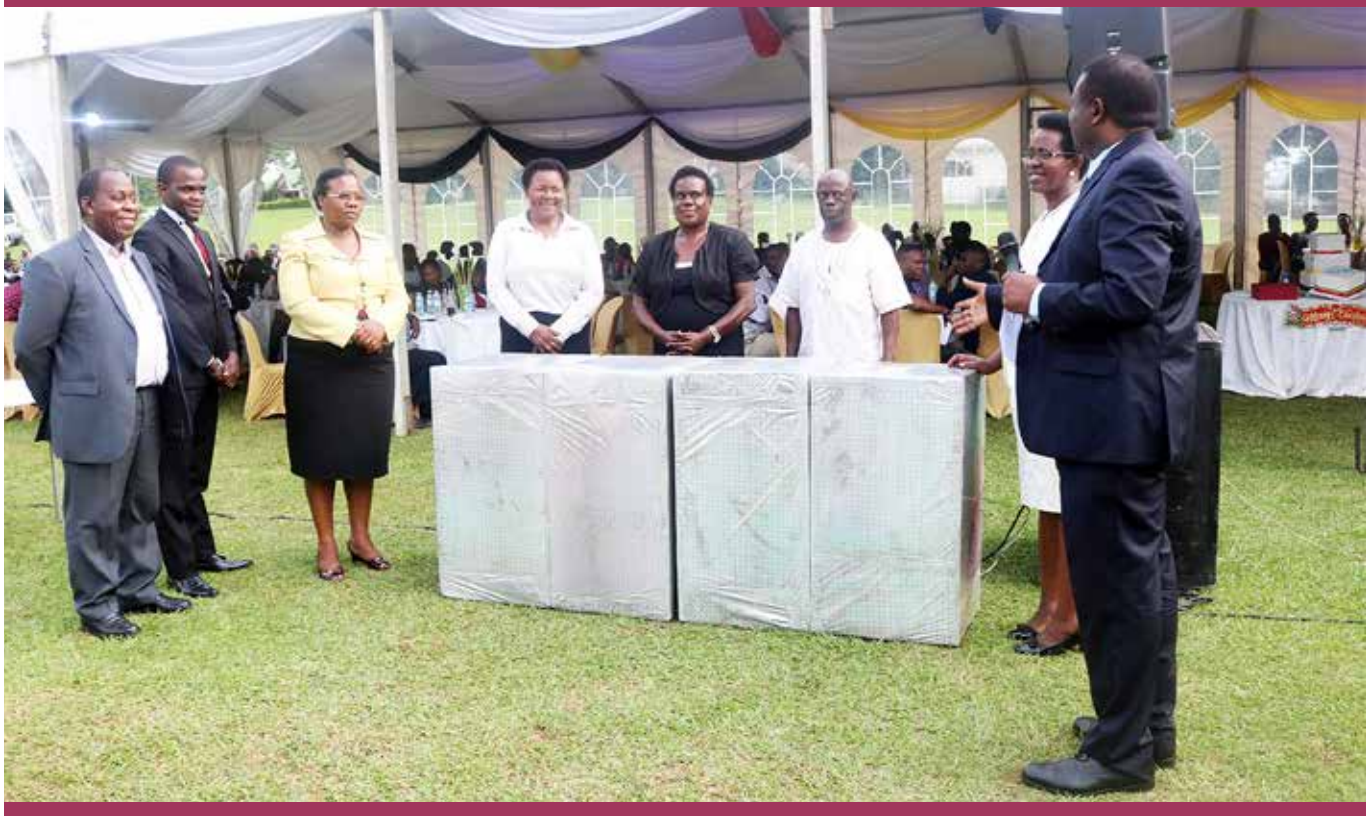
The party was graced by the Permanent Secretary, Ministry of health Dr Diana Atwine.

Speaking at the event, Dr Atwine congratulated the staff upon completing the year with tremendous research studies, projects and innovations.

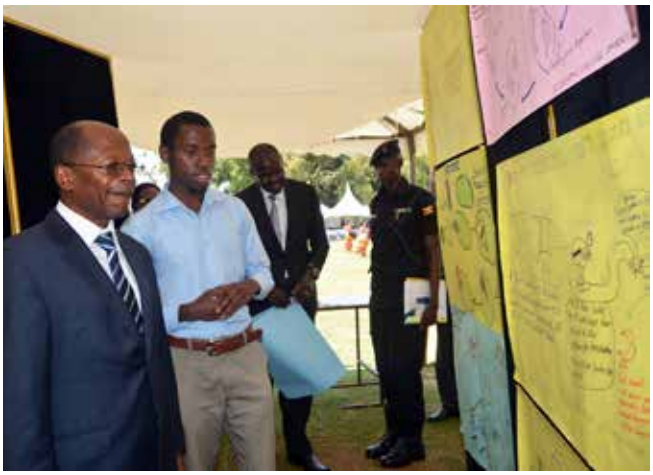
She appreciated the institute's recent discovery of a new strain of hepatitis and advised the institute to share its successes locally and internationally to boost its image so as to attract more partnerships and support.
She also promised support from the ministry of health noting that the institute is significantly contributing towards addressing health challenges in the country.

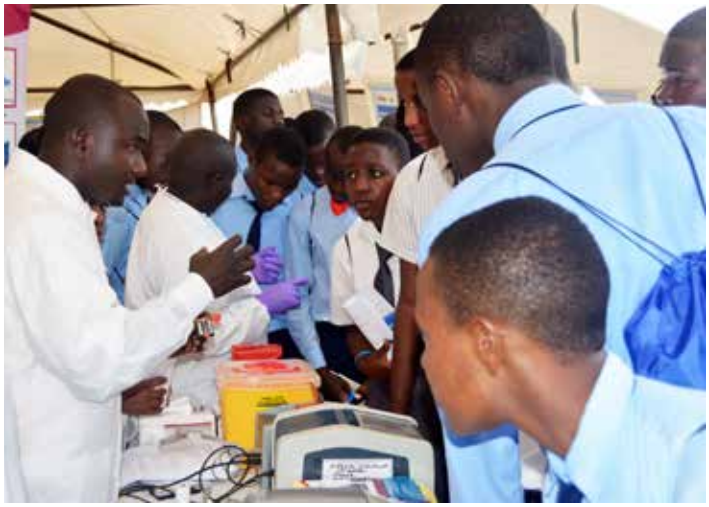
The Director Prof Pontiano Kaleebu thanked the staff for the hard work and commitment and also appreciated some staff due for retirement for the dedicated service and contribution towards the growth of the institute.

The end of year party was crowned with a performance from a variety of artists and lots of entertainment.



# GALLERY



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