UGANDA VIRUS RESEARCH INSTITUTE

The Heartbeat

MRC | MRC/UVRI Uganda Research Unit on AIDS

Quarterly Newsletter of MRC/UVRI Uganda Research Unit on AIDS VOL 2, ISSUE 1 March 2015

FROM THE DIRECTOR

Welcome to this edition of the Heartbeat, the first this year

The last quarter has been a very eventful one at the Unit. The five year COSTOP trial funded by the UK Medical Research Council and the UK Department for International Development (DFID) under the MRC/DFID concordant agreement came to an end and results were released at the Conference on Retroviruses and Infections (CROI) on Thursday 5th February in Seattle and at the monthly Science seminar series. The results have also been presented to the Ministry of Health and are being presented to the study participants and the general public. I congratulate the COSTOP team under the leadership of Dr. Paula Munderi for the great work.

I also take this opportunity to congratulate the Confections Study Programme team upon the completion of the Helminth/ TB vaccine study, led by Prof. Alison Elliot. This is the Unit's first TB Vaccine study and we believe the results will contribute to understanding the effect of helminth infection on vaccine responses.

I further congratulate Ms. Jackie Kyosimire Lugemwa and Dr. Gershim Asiki who each got funding from IAVI to conduct studies at the Unit, under the 'Investigator Initiated Research' programme. The studies, '*Effect of pre-existing immune status and endemic infections on Hepatitis B vaccine mediated immune responses among HIV negative adult Ugandans; and 'Biometric finger print technology for identification of prospective HIV prevention trial participants from fishing communities and enhancing retention in future trials,'* will contribute towards the Unit's mission to support capacity building for research in Africa.

In line with the MRC's mission to encourage and support research to improve human health, the Unit will soon start an Ebola vaccine trial at the Masaka field station and is currently conducting awareness creation activities in preparation for recruitment of participants.

This quarter, the Unit bids farewell to various staff including Mr. Fred Lyagoba and Professor Jonathan Levin who have worked with the Unit for 24 and 8 years respectively. At the time of departure, Fred was working as a Senior Scientist with the Basic Sciences Programme while Professor Levin has been the Head of the Statistics Section. We are grateful for their contribution towards the Unit's work and wish them great success in their next placements.

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INSIDE

This issue

Editorial

Dear Reader,

Welcome to this edition of The Heartbeat, the quarterly Newsletter of the MRC/UVRI Uganda Research Unit on AIDS Newsletter.

In this issue, we bring you updates about the various activities that are being undertaken by the Operations section, including an impending power upgrade that will ensure more stable electricity supply at all stations.

We talked to Prof. Jonathan Levin and Mr. Fred Lyagoba , who recently left the Unit. We bring you a glimpse of what their time at the Unit was like for the past eight and twenty five years respectively. Don't miss reading about the Unit's long journey to the present day high tech labs as told by one who saw it all from the beginning; as well as some new exciting work that will be undertaken at the Unit by various Scientists.

Staff appraisals are a mandatory part of the work life, and it's common knowledge that most people would rather skip that time of year. The Human Resources Department gave us an insight into what this process ought to be and what it aims to achieve. The HR article in this edition is a must read, as you prepare for the upcoming appraisals.

We look forward to receiving feedback from you and to your support as we build The Heartbeat into a resourceful channel of communication and knowledge sharing throughout the Unit.

Happy reading

Pamela Nabukenya Wairagala
Communications and Engagement Officer

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From the Director

I welcome new staff who have recently joined and those promoted especially Ms Monica Badaru who was promoted to the position of Unit Finance Manager.

I finally would like to convey mine and the Unit's profound gratitude to the MRC UK for the continued contribution towards the Unit's estates and capital funding. Recently we got funds that will among others enable the Unit to undertake an electrical power upgrade at the different field stations and as well as refurbishment of the pharmacy store at the Mengo clinic valued at £ 90,000; a Liquid Nitrogen system worth £ 87,000, purchase of a Nissan Xtrail vehicle worth £26,000 and towards purchase of AQUIOS CL CD4/CD8 analyser at £57,000.

I wish you a fruitful 2015.

Prof. Pontiano Kaleebu
MRC/UVRI Director

YOUR COMMENTS & FEEDBACK

I am writing to express my appreciation for the introduction of the MRC/UVRI Uganda Research Unit on AIDS Heartbeat quarterly Newsletter.

This was a great innovation indeed! Truly, "The Heartbeat" is bringing new life to the Unit. I particularly liked the fact that it gives updates on scientific achievements and also highlights past events. Thanks to the Communications and Engagement Officer and the entire editorial board!

Susan Nakubulwa
Data Manager- Entebbe

To give feedback or submit an article contact the editorial team on; communication@mrcuganda.org

Staff News

ARRIVALS

The following staff have joined the unit in the last quarter;

Name	Title	Location
1. Atim Brenda	Field Worker (Interviewer)	Agago
2. Opira Charles	Field Worker (Interviewer)	Agago
3. Okumu Patrick	Field Worker (Interviewer)	Agago
4. Aciro Winfred	Field Worker (Interviewer)	Agago
5. Emmanuel Mayombwe	Driver	Entebbe

PROMOTION

Ms. Monica Badaru was promoted to the position of Finance Manager.

Monica has over 10 years' experience as an accountant and has worked with the Unit for the last 3 years as Senior Accountant. She holds a Bachelor's of Commerce degree from Makerere University, Accountancy Certificate with ACCA and has recently completed an MBA from Heriot-Watt University, University of Edinburgh.

Congratulations Monica.

DEPARTURES

The Following staff left the Unit during the last quarter;

Name	Title	Location
1. Catherine Nakato	Research Assistant	Entebbe
2. Caroline Komukama	Research Assistant	Entebbe
3. George Ssemwanga	Field Worker	Entebbe
4. James Wakabi	Driver	Entebbe
5. Lydia Matama Kitebera	Study Clerk	Entebbe
6. Henry Sebunya	Engineering Assistant	Entebbe
7. Penelope Miremba	Clinal Research Coordinator	Entebbe
8. Kaddu Ismail	Data Manager	Entebbe
9. Fred Lyagoba	Senior Scientist	Entebbe
10. Prof. Jonathan Levin	Head– Statistics Section	Entebbe

Health & Safety

Unit gets Health and Safety handbook

Unit management has approved and launched a Health and Safety handbook that aims at promoting a safe working environment at the MRC/ UVRI Uganda Research Unit on AIDS.

The handbook, which is in line with the Health and Safety Policy that was adopted and signed by the Unit Director in September 2014, is a comprehensive compilation of among others procedures for reporting and investigating accidents, fire and other emergency policy implementation documents as well as other guidelines that ensure staff health and safety at the workplace is not compromised as well as how incidents particularly in Laboratories ought to be managed.

All staff working with the Unit are required to know and understand hazards associated with their work, what to do to reduce the risks and how to act during an emergency.

Speaking about the Handbook, Mr. Peter Nkurunziza, the Unit's Quality Assurance, Health and Safety Officer said, 'Whilst working safely is everyone's responsibility, good safety management starts at the top with group leaders and other managers taking their legal responsibilities seriously. This includes ensuring risk assessments and other safety management systems like trainings take place. Writing risk assessments is part of our proactive approach to safety management'. He added that 'the aim is to help staff think clearly about the hazards associated with their own work, and reduce the risk of injury to themselves and those around them or damage to facilities, which could set back the Unit's research'.

New staff will receive a copy of the handbook as part of the orientation exercise upon joining the Unit and will be required to return a signed form as proof of agreement to comply with the requirements of the safety manual, before they can start work.

A copy of the handbook and other related documents will be available on the Unit's shared server and website; www.mrcuganda.org. Helpful material may also be found on the MRC Corporate website http://www.mrc.ac.uk/skills-careers/working-for-mrc/safety-security-resilience/policies-and-guidance/.

Health and Safety Policy; What it says

The Director is responsible for ensuring the health and safety of all staff within the Unit and any visiting workers or other persons affected by the Unit's actions. Although this primary responsibility lies with the Director, all MRC employees have a responsibility for their own health and safety and that of others that may be affected by their actions. Management and staff must co-operate fully to ensure effective implementation of the MRC's policy.

Director's Summary:

The policy of the MRC/UVRI Uganda Research Unit on AIDS is that all occupationally related accidents, incidents and dangerous occurrence, no matter how seemingly trivial, are recorded, an investigation conducted into the causes, and corrective action implemented so that a recurrence can be prevented. The instruction and guidance in this document outline the management structure that should be in place to ensure that any accident, incident or dangerous occurrence that occurs whilst an activity is being carried out on behalf of or for the Unit is properly documented and investigated.

Director's Note:

The Unit operates a **STRICT NO BLAME POLICY:** causes of the accidents or incidences are not blamed on the reporting individuals.

Quality Assurance

The Unit has recently adopted a robust Quality Management System. We caught up with the Health & Safety and Quality Assurance Office, who briefed us about the system and its various components.

Please tell us about the Quality Management System (QMS) that has recently been signed by management;

The QMS by definition is "Management system to direct and control an organization with regard to Quality". Part of this QMS is the Quality Policy also defined as "Overall intentions and direction of an organization related to the fulfillment of quality requirements as specified by laboratory management".

This QMS has always existed in the MRC/UVRI Unit however, not specified on paper. By outlining this system and enabling scientific staff to review it, this ensured key implementing staff participated in having it in place. Once the Unit Director appended his signature, this written document became a Policy and it was subsequently circulated to all staff by mail.

What is entailed in the Quality Management System?

The QMS is composed of the Quality Policy and Quality Manual(s); the later defined as "a Document specifying the quality management system of an organization". This document relates to the general management activities, the provision and management of resources, the pre-examination, examination and post examination processes and evaluation and continual improvement. Owing to the nature of the Unit, i.e. providing Clinical Diagnostic Laboratory Services (CDLS) and Research specific outputs; two Quality Manuals were developed . Both manuals are similar in content based on International Standards Organization (ISO) 15189:2012 Standards. The Unit wide Quality Manual (QM) is general in structure, not specifying particular Standard Operating Procedures (SOP) and can therefore be adopted by any department or Section.

The other QM was developed specifically for CDLS enabling this section to be awarded sponsorship for ISO 15189 Accreditation by European and Developing Countries Clinical Trials Partnership (EDCTP) which we are on track to achieve soon.

What is the importance of Quality Assurance to the Unit?

MRC's Good Research Practice and other International requirements dictate that Clinical Trials should be conducted in accordance with Good Clinical Practice (GCP). For laboratories undertaking analysis of samples from Clinical Trials to comply with requirements; they must operate according to Good Clinical Laboratory Practice (GCLP) guidelines. This is aimed at providing Quality Assurance to users of such services that standards in operation meet applicable requirements.

The MRC/UVRI Unit undertakes a number of Clinical Trials; in order to assure and satisfy Quality needs defined as "Degree to which a set of inherent characteristics fulfils requirements". To satisfy users such as; collaborating Partners, Regulatory Agencies and Sponsoring Organisations; the Unit is required to operate an efficient and effective Quality Assurance Programme.

What is the role if staff in Quality Assurance?

The Quality Policy paragraph on responsibilities states that; "All employees (staff), visitors and students working for MRC/UVRI Uganda Research Unit on AIDS are required to "own" the quality of their work and hence endeavour to work to applicable quality and regulatory standards. The Unit is committed to continual improvement of all processes used to deliver research and clinical care by monitoring services and applying feedback to the processes and techniques to help improve the quality of those services. The Unit maintains a responsible attitude to funders, collaborators and all users with regards to Quality Assurance.

Other specific commitments are highlighted as follows;

* A requirement that Unit personnel are familiar with contents of the QMS regarding procedures relevant to their work
* Commitment by Unit staff to uphold professional values and commitment to good professional practice and conduct
* Commitment by all staff to set quality objectives to achieve continuous quality improvement.
* Commitment to ensure that the research and development services are provided to agreed schedules to satisfaction of collaborators, funders and end users
* Committing to health, safety and welfare of staff and that visitors to the Unit will be treated with respect and due consideration will be given to their safety.
* Commitment to continuing compliance with relevant legislation, accreditation and other regulatory standards.

New studies

Dr. Gershim Asiki

Using biometric fingerprinting technology for identification of prospective HIV prevention trial participants enhancing retention in future trials: a community based study in Masaka and Kalungu

After 3 decades of the HIV epidemic, an effective HIV vaccine is still elusive. Among multiple challenges faced in discovering an effective HIV vaccine is the identification of populations with high rates of new HIV infections that can be efficiently recruited and retained for the duration the vaccine trial. Fishing communities are a potential population for future trials but their high mobility across several sites makes them less accessible for trials.

The role of biometric fingerprinting technology in research settings for identification of clinical trial participants, tracking mobile communities and for matching large databases is widely acknowledged. However such studies are very few in Africa.

Under their Investigator Initiated Research, the International AIDS Vaccine Initiative (IAVI) has provided funding to MRC/UVRI's Dr. Gershim Asiki to conduct a 12 months study aimed at using biometric fingerprinting for tracking movements of individuals within fishing communities. The fingerprints will also be used to match community level HIV testing data for estimating HIV incidence.

A view of Lambu landing site in Masaka district

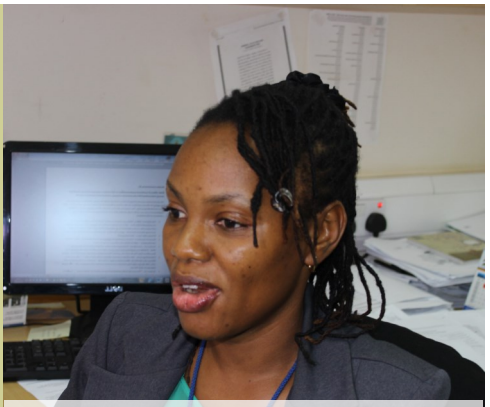
Speaking about the new study, Dr. Asiki said, "This study is very important because it will provide useful information for planning recruitment of fishing communities into vaccine efficacy trials and enhance strategies of tracking mobile individuals from these communities".

He expressed his gratitude to IAVI and the study volunteers. "We gratefully acknowledge this funding, the continued participation of volunteers from the fishing communities and the study teams for their enthusiasm in research".

Approach:

Census with fingerprinting of young adults (18-30 years) will be conducted quarterly in 21 fishing villages along Lake Victoria in Masaka and Kalungu. HIV testing linked to fingerprints will also be offered to the communities. Data will be linked by fingerprint identifiers to estimate HIV incidence and retention.

Effect of pre-existing immune status and endemic infections on Hepatitis B vaccine mediated immune responses among HIV negative adult Ugandans



Dr. Jackie Kyosimire Lugemwa, PhD

High risk populations such as commercial sex workers and fisher folk are being prepared for future HIV vaccine trials. However before the availability of a candidate vaccine, there is a need to study the challenges of conducting such trials in these populations, in particular retention of the study cohort. The MRC/UVRI and other partners have been supported by IAVI to conduct Simulation Vaccine studies using a known vaccine such as Hepatitis B vaccine to understand some of these challenges. The Hepatitis B Simulated Vaccine Efficacy Trial (SiVET) is an ideal opportunity for studying how the prior status of the immune system and endemic infections affect generation of immune responses after vaccination.

Vaccine efficacy in Africa might differ from that in Europe or the USA. Environmental factors and high burden of infections in Africa might skew the immune response to vaccines and new infections. Hepatitis B vaccine is one of the widely studied vaccines and correlates of protection against Hepatitis B virus infection are known, but it is not known how the immune status at the time of vaccination, including inflammatory conditions and concurrent infections, might affect the generation of protective antibody titers to anti Hepatitis B surface antigen. Understanding the effect of the existing immune status and the role of bacterial and helminth infections, immediately before vaccination and how these affect generation of protective vaccine responses will provide important information for designing interventions and effective vaccines against several viral diseases.

STUDY OBJECTIVES;

Speaking about the study, Ms. Jackie Kyosimire Lugemwa said, “the objectives of the study is to investigate the relationship between the pre-existing status of the immune system prior to vaccination (day 0), and the immune response to Hepatitis B vaccination and to characterize the effects of prevalent infections on the immune response to vaccination”.

This study is funded by IAVI, under the Investigator Initiated Research.

About the Funding:

The Investigator Initiated Research aims at providing opportunities for career development for junior investigators, to increase the development of scientific leadership capacity at partner Clinical research sites in Africa. This is to ensure that HIV vaccine-related science relevant to the communities at our research sites is conducted.

New studies


Dr. Clara Wekesa

The H3A Diabetes Study: A multi-centre study of the prevalence and environmental and genetic determinants of type 2 diabetes in sub-Saharan Africa

Type 2diabetes (T2D) is a major cause of premature mortality and morbidity worldwide and thus poses a significant public health challenge. In sub-Saharan Africa (SSA), T2D is an emerging epidemic with a current prevalence of around 1–6%. Over the next 20 years, it is predicted that SSA will have the highest growth in the number of people with diabetes of any region in the world—with a doubling of the current prevalence. The disorder will present a major health problem in SSA, competing for limited health resources with infectious diseases and other emerging non-communicable diseases (NCDs) such as cardiovascular disease

The Wellcome Trust is funding a multi-national study to be conducted within 11 sites across 8 African countries including Uganda, Tanzania, South Africa, Nigeria, Guinea, Malawi, The Gambia and Cameroon.

Study objectives include

- The assessment of the burden and spectrum of type 2 diabetes among adults in sub Saharan Africa
- Assessment of the environmental and genetic determinants of type 2 diabetes in sub Saharan Africa

In assessing the burden and epidemiology of type 2 diabetes in sub Saharan Africa, the study hopes to inform potential preventive and therapeutic strategies tailored to the region. Given the marked genomic diversity among populations in SSA, understanding the genomic basis of NCDs and their risk factors in populations of African descent is likely to provide additional insights into disease aetiology and potential therapeutic strategies.

The study will be conducted in Nsambya hospital- Kampala over 24 months.

Risk factors for prediabetes and type 2 diabetes

Researchers don't fully understand why some people develop prediabetes and type 2 diabetes and others don't. It's clear that certain factors increase the risk, however, including:

Weight. The more fatty tissue you have, the more resistant your cells become to insulin.

Inactivity. The less active you are, the greater your risk. Physical activity helps you control your weight, uses up glucose as energy and makes your cells more sensitive to insulin.

Family history. Your risk increases if a parent or sibling has type 2 diabetes.

Race. Although it's unclear why, people of certain races — including blacks, Hispanics, American Indians and Asian-Americans — are at higher risk.

Age. Your risk increases as you get older. This may be because you tend to exercise less, lose muscle mass and gain weight as you age. But type 2 diabetes is also increasing dramatically among children, adolescents and younger adults.

Prevalence and risk factors for liver fibrosis among HIV-infected patients in rural Uganda

Dr. Clara Wekesa

Liver disease, like other non-AIDS-defining causes of morbidity and mortality is on the rise among people living with HIV/AIDS given increased survival. People infected with HIV/AIDS are at greater risk of developing liver disease than the general population secondary to a number of factors. Management of liver disease requires specialist care and has major economic implications to resource limited settings.

This cross sectional study aims to estimate the burden of, and risk factors for liver fibrosis among persons infected with HIV in a rural population cohort in Uganda; it will be conducted at the MRC Kyamulibwa Clinic station over 12 months' period.

Quantification, description and characterisation of the risk factors for fibrosis in this population may inform policy on resource allocation for primary prevention. The study also plans to compare differences in burden and risk of liver fibrosis among people infected with HIV and those without HIV infection. This may inform on priority areas and differences in prevention strategies employed in the different population groups as well as quantifying the excess risk associated with chronic HIV infection.

Gestational diabetes. If you developed gestational diabetes when you were pregnant, your risk of developing prediabetes and type 2 diabetes later increases. If you gave birth to a baby weighing more than 9 pounds (4 kilograms), you're also at risk of type 2 diabetes.

Polycystic ovary syndrome. For women, having polycystic ovary syndrome — a common condition characterized by irregular menstrual periods, excess hair growth and obesity — increases the risk of diabetes.

High blood pressure. Having blood pressure over 140/90 millimetres of mercury (mm Hg) is linked to an increased risk of type 2 diabetes

Abnormal cholesterol and triglyceride levels. If you have low levels of high-density lipoprotein (HDL), or "good," cholesterol, your risk of type 2 diabetes is higher. Triglycerides are another type of fat carried in the blood. People with high levels of triglycerides have an increased risk of type 2 diabetes. Your doctor can let you know what your cholesterol and triglyceride levels are

Source; http://www.mayoclinic.org/

Operations Update

The Unit has received capital funding from the MRC UK. towards various activities. The Unit Director of Operations, Simon Belcher gave us a snippet into some of the areas that have benefited from this funding and the various activities undertaken by the Unit.

Entebbe

Training and Bioinformatics building; after a long period under construction, the training building is nearing completion and will soon be commissioned. The three leveled building will house the Bioinformatics center in the basement and the training center on the ground and first floors. Equipment for the center has already been shipped and the Bioinformatics is expected to be set up in June 2015. To ensure adequate internet access at the Bioinformatics center, Research and Educational Network for Uganda (RENU) has supported the Unit to set up a 10 GB/S fiber link. This will improve overall internet access at the Unit.

Electrical upgrade;

The Unit has received £650,000 to undertake an electric power upgrade at all its stations. In Entebbe, the upgrade will comprise of construction of an energy center that will house various equipment. A 450 KVA capacity generator has been acquired and more equipment is soon expected in the country from UK. A team from UK will work with the local team to install the various equipment. Currently the installed Unit's power capacity is 670 KVA. This is set to increase to 925 KVA with this investment.

It is expected that after the power upgrade, the Unit will have the capacity to operate on generator power continuously for 24 hours if necessary, for example during the rainy season when the power supply from the main grid tends to be unstable. This will ensure more safety for equipment, data as well as samples and generally improve the working environment for staff. The power upgrade is expected to be completed within three months' duration.

As part of the planned power upgrade, generators at the Grade A clinic as well as the Mengo and Masaka field stations will be replaced. Expected to be implemented in April, Grade A will receive a 20 KVA generate, Masaka a 50 KVA one while the 100 KVA generator in Mengo will be replaced with a 50 KVA to ensure effective usage.

The training and Bioinformatics Centre

Staff canteen

The Unit has supported the Uganda Virus Research Institute with funds to construct a staff canteen. The contract for this work has been signed and work is expected to commence soon on the £ 18,000 facility that will be located near the Rakai Health Sciences Programme at the main campus.

Putting final touches to the Training and Bioinformatics centre

Road works

A contract has been signed to repair the road from the training building to WHO/EPI offices. Potholes around the Campus will also be sealed.

New fire alarm system

The new fire alarm system is aimed at ensuring utmost safety at the Unit. With a link to the gate house, detection of fire threats will set off an alarm both within the Unit buildings and at the gate house to alert the security personnel.

Low oxygen detection system

This shall be implemented at all the stations where liquid nitrogen is used. A team from UK is expected to set up the system which will ensure that staff who use oxygen are protected from the potential risk of suffocation due to undetectable insufficient oxygen levels.

Mengo

The Unit has received £90,000 capitation Award from Head office to construct an archive at the Mengo station. The archive will be located on Block A. The construction works will see the repository relocated to the new block and the pharmacy enlarged. The expansion of the pharmacy will enable the Mengo station to meet the standard clinical requirements which in turn will make the station eligible to engage in clinical trials.

Kyamulibwa

A VIP latrine for patients, with facilities for persons with disabilities has been completed.

Incinerator; this is under construction and is expected to be completed within one month.

A store has been constructed and will be used for storage of consumables

Archives; Construction is underway of the new archives, which will also be fitted with state of the art racking system.

Using funds from the Capital awards, the Unit will also embark on a liquid nitrogen enhancement process. This will entail improving the handling and transportation of liquid nitrogen as well as redesigning the nitrogen plants at the various stations.

Inside and outside the incinerator house in Kyamulibwa

Interviews

After working for almost 25 years, Mr. Fred Lyagoba has retired from the Unit. His work involved attempted isolation of virus from human specimen before turning to HIV/AIDS studies. He was keen in the establishment of an HIV screening and isolation facility at UVRI. Starting out as a Lab technician, Fred moved through the ranks and at the time of his retirement from the Unit was working as Senior Research Scientist. I caught up with him and he told us about his time at the Unit

Mr. Fred Lyagoba during the interview

Hi Fred, tell us about when you started working at the Unit and what it was like then.

I started working at the UVRI in January 1984 and was seconded to the MRC in 1990. Most of what we did then was raw processing of samples which were then shipped to labs abroad. After sometime, in a bid to transfer technology, staff would accompany the samples to the different labs where they were sent.
The technology that we used then was very rudimentary; we had to start with all the basic work such as coating plates that were used to screen for HIV antibodies as opposed to today when we receive and use ready-made kits. Unfortunately, because these kits are patented, one never gets to know the components of what they are using.

Then, one knew what they were working with. You sometimes had to conduct the same procedure several times, before you got the right reagents. It was tough, but exciting; it was real science.
During the early days, there were no disposables in the labs. New staff started their orientation in the wash-up area, so that they could understand and appreciate the importance working in a sterile environment.

So when was the transformation from the rudimentary science to what the Unit has at present?

By the mid-1990s, it was apparent that the Unit was conducting invaluable research in HIV/AIDS. The Unit had moved from just screening to confirming the presence or absence of HIV in samples. We started doing western bloats, though some still turned out indeterminate; we could not fully confirm whether what we were seeing was or wasn't HIV. It was then that we started using specific procedures like molecular testing. It was around this time that the Unit started using PCR to confirm HIV; it wasn't automated though!

We had to move samples between three basins each of which was at a different temperature. Each basin could only hold ten samples at a time, and these stayed in each basin for three minutes. This process had to be done forty times, before we could see results. Three of us routinely did this at different intervals.

It was laborious but exciting work. We were very passionate about our work and very determined to find a solution. We actually developed our own western bloats but were stopped from using them by the World Health Organization, because they were not standardized. Besides, it didn't make economic sense for us to produce them locally, yet there were organizations that were making them at a commercial scale and even had patents for them. Science was progressing very fast, and it was important that we also moved just as fast. There were also other players in HIV research like Rakai Health Services Program that employed fewer technical staff (then) than MRC/UVRI, but were doing commendable work. So it was important that the Unit upgraded its facilities and they have done that.

Today, the Unit has established world class labs and adopted top-notch technologies. Some of the equipment for example the Flowcytometers (LSR II) and the automated genetic sequencers at the Unit, can only be found in two other countries in Africa. Technologies such as the Hetroduplex Morbidity Assay (HMA) revolutionalized subtyping and enabled us to do more work. For the first time I was able to handle 1,000 samples in one month, (previously we handled an average of 10 samples per week.

In 2003, new technologies like the Polymerase Chain Reaction (PCR) and Sanger BigDye PCR enabled us to conduct sequencing, which was a big achievement. This new technology enabled the Unit to engage and participate in large studies, like the DART Trial which

Fred with colleagues at work in the Lab

was a multi-site study. Over 2,000 samples were sequenced as part of the DART Trial.

Tell us about your career development at the Unit;

Despite the limited facilities at the Unit at the time, we were producing very commendable work, and our colleagues from abroad could hardly believe that we were doing this work in Uganda. In 1999, Prof. Mullins from the University of Washington visited the MRC/UVRI and when he saw what we were doing, he invited me to visit his lab in Washington. This would of course come with a lot of exposure but it was a risky venture for me. To take up the offer, I had to resign my job at the Unit; I took the risk and it paid off. While in Washington, I worked six hours in Prof. Mullins' lab to raise tuition for Diploma studies which I had signed up for.

I later applied and got some funding from the World Health Organization and the London School of Hygiene and Tropical Medicine (LSHTM). I upgraded and obtained a post graduate Diploma in Infectious Diseases from LSHTM and MSc. in Medical Microbiology from the University of London in 2001. I was mentored by Prof. Mullins at the University of Washington for a period of four years. I returned in 2003 and rejoined the Unit.

It was a challenge then to get a scholarship for lab technicians. For example I had earlier lost an opportunity for funding from USAID because I was required to provide four publications as proof that I had done the work I claimed to have done; Unfortunately I had none. Then, the lab technicians were never acknowledged in publications, despite the long hours they put into the work to be published. This has since changed, which is good for career development.

You have worked with scientists from different generations, what would you say to the younger ones, especially in regard to their career development?

In our days, we conducted most of the research from scratch. We had to develop the reagents we were going to use and had to put in a lot of work and time. Things have however changed a lot. Most of the Science now is theoretical. It is therefore very important that they keep themselves abreast of the developments in the science world. They have to study a lot. Our days were more about the practical science; these days are about the theoretical bit of science, which is equally important.

How would you sum up your time at the Unit and what are your plans for the future?

It has been exciting and it gave me lots of opportunities. My life has been built around Science for the last three decades, most of which have been here at the UVRI campus, both with UVRI and the MRC.
I am glad that at the time of my departure, the Unit has tremendously grown in infrastructure and capacity. The Unit can undertake studies of great magnitudes, cutting across different sites. Though still a challenge, I am glad that data analysis can now be conducted here to acceptable levels. I have worked with and trained staff that I am proud to say will achieve much more than I did during my work here. The future of science at the Unit is bright.

Parting words?
I will miss the team work here; the relationships built over the years and would definitely come back if a need ever arose for me to.

Interviews

After working with the Unit for 8 years, Prof. Jonathan Levin, formerly the Head of the Statistics section left the Unit at the end of March, 2015. We caught up with him and he told us about his time at the Unit. Below are excerpts from that discussion;

Prof. Jonathan Leevin during the interview

When and how did you join the MRC/UVRI Uganda Research Institute on AIDS?

I joined the Unit in 2006 upon my wife's encouragement. She saw an advert in the papers and encouraged me to put in my application. I did apply and was offered the job. I was happy to join the Unit and work with Jim Todd, whom I had worked with the early 1980S in the UK. In 2009 when Jimmy left, I became Head of the Statistics section.

What was it like working with the Unit then?

Working at the Unit then was a life changing experience. The epidemic was in its infancy, with very little knowledge in the public domain. Being part of a trial gave most participants the only access to ARVs that were in very limited supply and these were provided through a home-based care programme; participants often thanked us for saving their lives.

It was also a time of plenty with a quite an amount of funding coming in from DFID. The Unit had a bridging fund that was used to continue payments to staff, even after the projects they were working on ended. That way the Unit managed to retain good staff. However, things began changing around 2008, when the impact of the 'credit crunch', started to be felt at the Unit, following reduction in funding.

The Unit then had to write scientifically competitive proposals for funding. The new modal of funding was however difficult from a statistical view, because it was difficult to predict statistical needs.

How has it been like heading the Statistics section?

I took over from Jim Todd who had set up good systems in the Section and this made work a lot easier for me. During my time at the Unit, I have been part of various studies like the Jinja Trial, Cryptodex, COSTOP, ARROW. Some of these were ground breaking and left a big impact. I am happy that I am leaving the Section at a point when there are a lot of qualified personnel. The section has some young staff that are well trained and will carry the section on, far beyond what I could have done.

What advice do you have for young statisticians that you have worked with in the section, especially in regard to building their careers?

Working with scientists requires constant interaction with them and learning what they do. It is important that they know as much as possible about the different studies, not just the statistical bit. The information one gets from interacting with these scientists is invaluable. For example working with Dr. Eugene Kinyanda has allowed me to learn a lot about mental health, particularly in the context of HIV. This is knowledge that I would never have acquired, had I restricted myself to only understanding the statistics in Dr. Kinyanda's studies. My understanding of mental health in the context of HIV will be beneficial even after I leave the MRC/UVRI, and I am sure I will be working with Dr. Kinyanda for some time to come.

What are your future plans?

I would like to go into teaching so I can use the practical skills that I have acquired over the years. I will definitely keep in touch with the Unit and will occasionally visit.

What will you miss about being at the Unit?

I will miss working with the team in the section, the various scientists, the investigators etc. However, I will not miss management. It was never my 'cup of tea'. I am glad that the Unit gave me an opportunity to be part of the management team, but I would never do it again.

Showcasing some of his other talents; playing the Harmonica at one of the Section parties.

What others say about working with Prof. Levin

"Jonathan has been an easy person to work with. He is an encourager and told one their strengths and weaknesses and often consulted other staff about management of the section

Rebecca Nsubuga, PhD - Statistician/ Modeller

"He has been a fantastic Head of department; very approachable, and supportive in giving technical advice. He is an experienced trainer and has been excellent at building staff capacity through training. Even though he was the Head of the section, he respected everyone.

Lawrence Muhangi

Achievements

Ms. Berna Kalanzi

Succeeding in the midst of challenges

I applied for a Diploma in Clinical Trials from the University of London in 2011. Though I did not have the required first degree, the experience I had gained from working on various clinical trials with the MRC/UVRI made me eligible for admission. With my five years' work experience, I actually had more than the equivalent of a degree and I was admitted with the promise of being transferred to the MSc in Clinical Trials, if I performed well in my core modules. I did perform well and after the first three core modules, I was transferred to the MSc Clinical Trials.

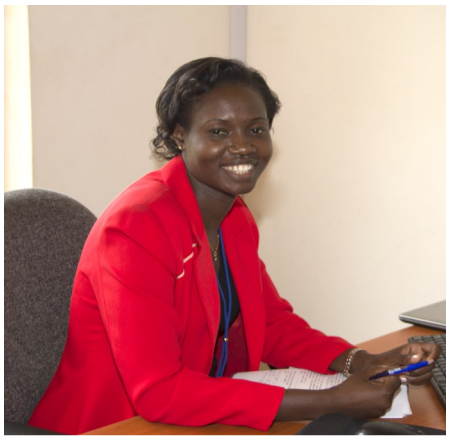
I was initially offered a 50/50 scholarship; with the Unit offering to pay 50% of my tuition and the remaining 50 % would be deducted from my salary annually. Considering my salary as a nursing officer, the deduction for the study loan seemed like it was over 65% and I was struggling to survive on the '35%', but the desire to achieve my dream kept me moving. Lucky enough, distance learning is very flexible so my work output was not affected by my studies.

Unfortunately, one year into my studies, tragedy struck; I lost my husband in an accident. With my roles changing in a split second to being the family's sole bread winner, I was in no position to afford the study loan. Much as I wanted to continue with school, it was logically impossible. Thankfully, the Unit was very considerate and offered me 95 % scholarship which enabled me complete my studies.

I completed and was awarded an MSC in Clinical Trials from University of London in NOV 2014. With this qualification, I consider myself a valuable resource for the Unit and can take on several roles given an opportunity though my dream is in Clinical trial monitoring.

Thank you MRC

Other staff supported by the Unit that have recently graduated



Ms. Monica Badaru
Masters of Business Administration (MBA)
Heriot-Watt University, University of Edinburgh

Edward Senyonjo
MBA– IT
Cavendish University– Uganda

Dr. Patrick Kazooba
MSc Epidemiology(Distance Learning) - University of London

Keneth Wasajja

Windows 10 is on

Windows XP was officially discontinued by Microsoft and is considered a non secure operating system, you shouldn't have it.

Do not be caught off guard because any time from now, your new computer desktop might look different,

like this;

If you still have windows XP , make sure you get an

upgrade to windows 7 or 8 and prepare for Win10.

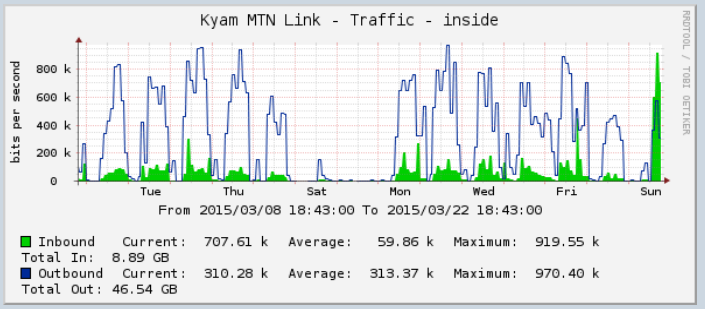
Your Core Network is Monitored;

Introducing Cacti, a web based network monitoring and graphing tool

Cacti is used to poll services at predetermined intervals and graph the resulting data.

It is generally used to graph time-series data of metrics such as network bandwidth utilization.

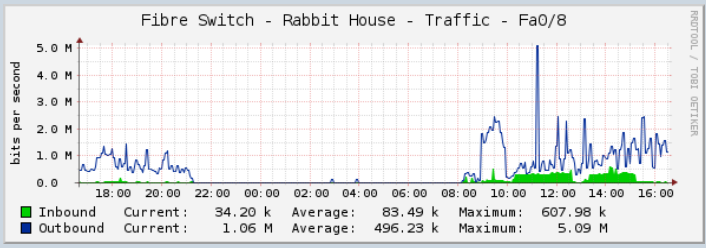
That's an example of a graph showing network usage in Kyamulibwa field station.



MRC employs Cacti for Monitoring bandwidth utilization, data links' uptime, CPU load on servers and performance of all network equipment especially switches and routers

All stations have this tool installed and used for generating weekly network usage reports and real time monitoring.

Statistics for any defined period of time can be captured and used for improving network availability and quick detection of failures there by reducing downtime.



This shows daily traffic through one port on a switch in rabbit house, i.e. statistics for one computer .

Human Resources Department

WHAT GETS INSPECTED GETS DONE

Rachel Mpangainwe– HR Officer

Annual appraisals are around the corner! The most dreaded exercise! Did I say most dreaded? Other people dread sitting an exam. Let us be honest; what is simpler; analyzing a theory that was developed by someone you don't even know? Or discussing what you have personally been doing over a particular period?

That latter sounds like reciting your name over and over. So maybe we don't fear appraisals but we simply don't like them. Do you know why? We are scared of the truth; the truth about our successes? No! the truth about our flaws. So we agree that we are scared of annual appraisals because we don't want to hear the negative truth, call it criticism! Yes, we are running away from our own shadow!

The most successful teams are those whose members have attained professional maturity. When you are professionally mature, you are strong enough to own your mistakes and kind enough to love yourself and celebrate your successes.

Each team is preoccupied with the extent to which annual plans are being or going to be achieved and is also mindful of what is critical to its success.

We defined and documented our performance objectives at the start of the year. We have consistently tracked progress, sought help and given the necessary feedback and guidance. Has this been the case? I am hoping for a 'yes' because continuous monitoring helps discover whether individuals are not *doing things right* but rather doing *the right things right*.

The Appraisal

Let's now talk about the appraisal meeting, what shall we discuss? Shall we be tempted to discuss individuals or results? This is the moment to recall; what were the performance objectives? What were the projected results? What was it that we wanted to see? These questions will help us to know whether we will be measuring the right things; activities or results?

What if the expected results were not realized? Who do we blame? Well, this is not a blame game, but ultimately there are questions to be answered. Were the roles clearly defined? Were the performance objectives clearly stated and agreed upon? Was there open communication? Was the performance continuously monitored and timely feedback given? It's never too late to do the right thing.

We are early enough to build a good foundation for even greater achievements for the next performance year. Let us join hands, work as a team but remain mindful of individual responsibilities. Let's be open to advice and criticism; celebrate positive feedback and take the negative one gracefully. From correction we develop but most importantly, what gets inspected gets done.

Technology and Me

Godfrey Kalungi– HR Manager

Closely linked with the globalisation in the 21st Century is the advancement in the technology, this is affecting employees across the world both positively and negatively, some of the developments well known include, IPads, Laptops, internet, smart phones, video conferencing etc. many of which have been taken for granted.

While they have contributed greatly to work flexibility and easier information sharing across the work environment they may in a way negatively impact on staff well-being. What does this mean for you and me the employees in this organisation? Sometimes it means that you are never expected to switch off; you are constantly available and accessible. The implications of this phenomenon on employee well-being, stress levels and work life balance need to be considered.

As we embrace the technological advancements we all have to remain very cautious about our well-being, our privacy and information security.

A small food for thought through the first quarter 2015. Be blessed

Pictorial

Kyamulibwa staff pose with the Prime Minister of Buganda Kingdom during his Visit to the station in December, 2014. The Unit together with staff contributed towards the Kingdom's *Tofali* project

Kyamulibwa staff participate in the 2014 World AIDS Day celebrations in Masaka District

ABAaNA Study– Open Day

MULAGO - 27/03/2015