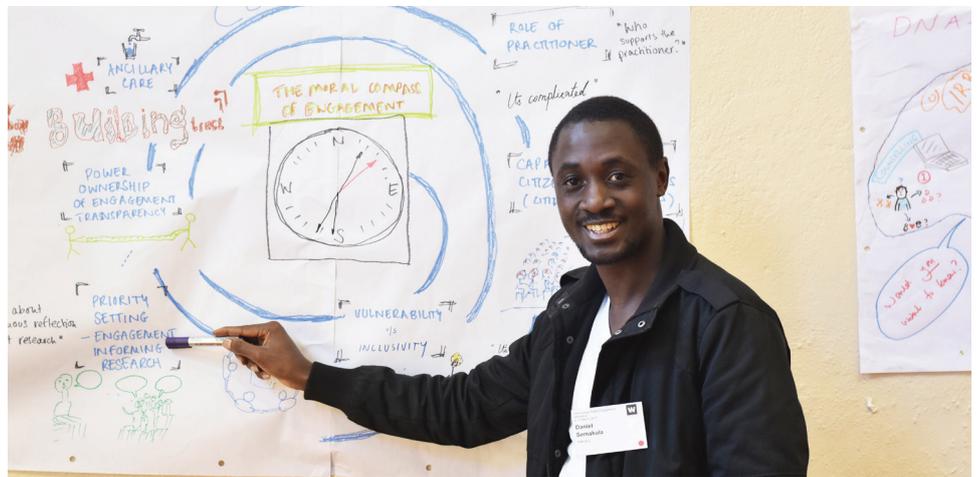


It's complicated: navigating scientific complexity in public and community engagement. Highlights from the Wellcome Trust's international public engagement workshop 2017

By Dr. Daniel Semakula (Innovations & Knowledge Translation (IKT) Officer: THRiVE-2)

Every year, the Wellcome Trust organises an international workshop on engaging the public with science and research. This year's meeting was held between 6th and 8th March 2017 at Sawella Lodges, Naivasha-Kenya. These meetings provide a platform for sharing experiences learning from one another, and from the Wellcome Trust about new changes in public engagement practices and funding mechanisms. The theme of this year's workshop was: "it's complicated: navigating the science complexity on public and community engagement." Along this theme, the workshop explored complexities in modern science and the challenges of designing activities to engage the public with complex health research and science ideas. It attempted to unearth the best ways of making a complicated topic understandable, but not over-simplified, and the role language, metaphor, art, participation and collaboration play in this complex process" This year's workshop was attended by over 30 participants from countries in Africa, Asia, USA and the UK, most of whom are working on Wellcome Trust-funded projects. Participants were a mix of biomedical



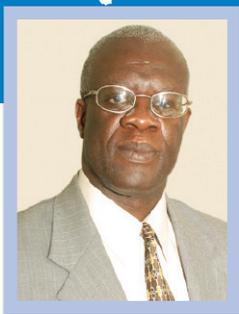
Daniel explaining the moral compass of engagement

researchers, public and community engagement practitioners, social scientists, journalists and others from across Africa (Uganda, Kenya, Tanzania, South Africa, Ghana, Malawi, Zimbabwe, Nigeria and Botswana); Asia (Vietnam, India and Nepal) the UK and USA. Also in attendance were members from the African Academy of Sciences-AESA secretariat. The workshop used participatory engagement methods to stimulate thought-provoking and enjoyable discussions, and provided space for new engagement methodologies and skills to be shared. Over three days we explored options for navigating complex realities including the links between community engagement and the ethics of understanding science and consent, and the extent

to which tools of public engagement, such as metaphor and simple hands-on experimentation, are useful or risk being misleading.

IN THIS ISSUE

Experience from Mwanza research methods course	Pg.3
Using poetry as a medium for explaining difficult concepts	Pg.3
THRiVE-2 Gives me a push to Live my Dream	Pg.4
Short and Long Term Perspectives on East Africans Studying Abroad	Pg.6
Creating Value for Money in detecting Low-Level HIV-1 drug Resistance	Pg.7
THRiVE Reaps Big at the 67th Makerere University Graduation	Pg.10
Mwanza research methods course still going strong in THRiVE 2!	Pg.12



Dear Readers,

The demand for doctoral training in East Africa is growing at an

amazingly rapid pace and calls for evidence driven reflection to facilitate planning for how to accommodate it. There is an obvious need to offer high quality training to produce a critical mass of scientists that is fit-for-purpose and with capabilities to contribute to national development in an expanding knowledge economy driven by very productive innovative professionals. Through a highly competitive three-step process in 2016 THRiVE selected a truly promising group of eight upcoming researchers to be supported for a four-year PhD training. Five other researchers were also awarded two-year Post-doctoral training fellowships. Both groups will present their proposed research during the 2017 Annual General Meeting at the Sagana Gateway Resort, Murang'a in Kenya on May 11 and 12. They hold great promise that in due course they will become international research leaders who can compete with their peers trained in the high-income settings that are extremely research-intensive and are endowed with abundant resources.

We need to open new frontiers for our trainee researchers through cutting-edge course work, mentorship and partnerships with world class scientists and participation in international research conferences and networks. One upcoming researcher summarised this well in this issue of THRiVE News stating that, ".....The meeting certainly demonstrated that the future of young African scientists is bright, provided they continue to be offered the opportunities to demonstrate their potential". A fascinating development is how our young researchers have embraced the idea of public engagement in science. One approach taking root is for each to adopt a secondary school and engage its students and teachers in explorations of how science impacts human life. The sky is the limit.

It's complicated: navigating scientific complexity in public and community engagement.

Amid the busy workshop schedule I managed to secure a "one-on-one" with Mr. Imran Khan, the Head of Public Engagement Programs at the Wellcome Trust, who reiterated the Trust's commitment to public engagement. Some of the reasons for the Trust's emphasis on public engagement revolve around concepts of 1) the public participating in or informing the research design process and 2) the public understanding and using research outputs. Mr. Khan believes that the science of research and the experience of implementing research projects will potentially be better if you engage with the communities where research participants come from. Public engagement provides opportunities for researchers to interact with their research participants and understand their contexts. This enables the researcher to understand how much participants know about their research topic or how they feel about science and research. Public engagement also helps researchers answer the questions "what cultural considerations do I need to be mindful about in designing this study?", "How does my presence influence the responses I get from my research participants?" This not only helps researchers to contextualize their research design but it also helps them understand their findings better.

Looking beyond the scientific journal publication, public engagement augments the impact of research to society. It brings research to the forefront of social, technical and political discussions, which are often the precursor to research adoption and impact. The full value of research to society becomes realized when it improves understanding of a phenomenon to the point that people start to use the research findings to inform their practices.

The main challenges discussed at the workshop were 1) the ethics of sharing participants' information with other researchers, 2) the ethics of sharing information with participants and 3) evaluation of public engagement initiatives.

The workshop was closed on 8th March 2017 with a call for participants to explore innovative methods for keeping the public engaged in discussions about science and research and helping them understand difficult ideas that scientists are often working on. Public support is very crucial in ensuring the successful implementation and funding of research. All researchers in their own ways need to create opportunities for engaging the public with their research, beyond provision of recruitment information and dissemination of research findings.

Using poetry as a means of science. Excerpts from engagement with science

At the recently concluded Wellcome Trust workshop on public engagement with science, we explored a multitude of methods for engaging the non-academic public with complex ideas in science and research. One method we explored was the use of poetry to explain the difficult concepts of genetics. Working in groups we were tasked with writing a poem on genetics and genomics in 15 minutes. We challenged ourselves to write a poem on genetics but also include numbers and languages. As you can imagine 15

Experience from Mwanza research methods course

By Robert Kaaya, *THRiVE* PhD fellow, March 2017

Mwanza research methods course came at the right time when I had just registered for my PhD and seemed like a touchdown and the beginning of my 4 years fellowship. The aim of the course was to introduce the fundamental principles of epidemiology, clinical trials, bioethics and biostatistics. Exactly what I needed to help me plan for my upcoming activities.

Course facilitators had practical experience on the subject they were teaching, most of them are doing research relevant to the subjects they handled. Mode of teaching was very interactive and gave room for participants to give out their own experiences and challenges from their respective working environment.

The course in Mwanza not only gave me the knowl-



The author (extreme right) working with a group of other fellows during the training.

edge for conducting a good research project, but also a good network with fellow scientists across East Africa of whom we share similar challenges. I would like to recommend that modules focusing on scientific writing skills and research management be included in this course.

Medium for explaining difficult concepts, and interesting the public in science in the Wellcome Trust's International workshop on public and community science- 2017

By Dr. Daniel Semakula (Innovations and Knowledge Translation Officer – *THRiVE*-2)

minutes was not sufficient to complete the poem but on my return journey I secured time to refine it, complete it and write an article about it.

The approach and rhetoric I have used is “explanatory” narrative poetry as opposed to “abstract” poetry. Using poetry as a medium of public engagement with science I have made a daring attempt to introduce an uninitiated individual to a few basic concepts of genetics and the human genome, and how these relate to who we are as



Daniel Semakula enjoying a discussion with a group of other workshop attendees

Using poetry as a medium for explaining difficult concepts, and interesting the public in science.

humans. The poem uses words from Swahili, Luganda, Zulu, Vietnamese, English and Science. As you read this please bear in mind that I have no previous experience with poetry or with the liberal arts. I would appreciate your contributions to make this better. Here below is a more complete version of the poem.

A rail road? A Library?
A blue print? A nest? A map? What would you name her?

3 billion blocks, A quarter of a million pages yet 3 meters long

The quest for her origins and her gorgeous expressions abounds forever

In unfathomably sacred crevices - so deep and so dark, albeit not unreachable

From the depths of each enthralling micro galaxy emanated two gorgeous long strands

Coiled like yarn, entwined like vines, but pointing opposite ways

With a passionate affection they hugged so tight, like a new bride onto her long-lost love

But this was no love. It was a call of duty - a sacred mission to maintain the engine of life

A revered secret undertaking to maintain and propagate species and preserve world order

Beautifully choreographed and serenading

music emanated from segments of the vines

A melody so audible and unmistakable, like the trumpet of an elephant

“Wutu, Ubuntu, Abantu, Con nguoi, homo sapiens”

99.9% similar. The reason we are humans

In these two long strands we are all the same

“Mimi, Mina, Nze, Toi, Me”

0.1% different. The reason we are individuals

In these two long strands we are all different

“Ukoo, Uzalo, Mumusayi, cogen, lineage, blood line”

30,000 – protein coding genes. The reason we share similarities and differences

In these two long strands we all convene, to drink from the pot of life

“Watoto, izingane, Abaana, Bon tre, Offspring, children”

46 chromosomes. 23 from each parent.

We are all a product. We are all a factor - a seed waiting to germinate.

In these two long strands lies our heritage and destiny

And the beautiful music continues to this day, and forever will

Because in these two long strands lies the original ingenious gift that keeps on giving.

THRiVE-2 Gives me a push to Live my Dream

By Richard Kwizera, Makerere University THRiVE PhD fellow

I have a dream of developing my research career in medical mycology and infectious diseases on top of having a passion for teaching. Personally, the THRiVE PhD fellowship presents a great opportunity to convert my dreams into reality. It is a major turning point and foundation to my future research career. THRiVE has continued to empower me in learning and developing skills that will enable me to become an independent researcher capable of carrying out high quality research and win internationally competitive grants. In the last four months following my offer of the THRiVE PhD fellowship, I have noticed that realising my dreams will require a lot of hard work, high level of commitment, sacrifice and a high level of self-motivation. My experience with THRiVE has been an interesting one so far. I was initially impressed by the help I received from the THRiVE Coordinator at the University of Cambridge (Ms. Corinna Alberg) during my application. It was not easy getting me a mentor in my field of research, but she tried her best and got me one towards the deadline. I am really grateful for this. I have made new professional contacts through meeting various researchers from UK and East Africa with different backgrounds. Our interactions and sharing have helped me get a new and better perspective of conducting

independent research. The Mwanza research methods course was also a very helpful course. In particular, it taught me how to use different statistical software to analyse and interpret my own work without the help of a statistician. Its timing was perfect; when we were polishing up our concepts especially the tools, methods, design, objectives and statistical analysis plan. The THRiVE Secretariat has also been very helpful in giving us a push in the right direction and the timely provision of funds and training opportunities. However, in any normal situation, challenges always arise. As a student, registering at Makerere University poses a number of challenges that you need to learn to troubleshoot as soon as possible so as to meet the set timelines and deadlines. This needs a lot of tolerance. There are a lot of unforeseen circumstances that could slow down your progress in registration. You need to work closely with the supervisors and seek some advice from people who have passed through the system before. As a student, you need to be self-driven and self-motivated to initiate and push forward every step of the registration process from the department through the IRB to the University. You have to set the pace for yourself. You need to revise the edits from the supervisors and IRB, and re-submit to them as soon as possible. There is no room for relaxing. My sincere gratitude goes to the THRiVE consortium for this great opportunity.

Wellcome Trust Bloomsbury meeting Report

21-23 March 2017

By David Meya, THRiVE Postdoctoral Fellow

The Bloomsbury center meeting this year took place in a serene setting on Lake Malawi. We landed in Lilongwe on a cool Monday afternoon having stopped over in Nampula in Mozambique. The road trip to the venue was a 3-4 hour drive. However, it turned out to be more like a 5 hour ride after the driver made several wrong turns.

After a good night's rest, we took a 5-minute drive to the Makokola resort and had a decent morning session with several interesting papers presented on Maternal & Child health and HIV. I gave my talk on my previous PhD work, which focused on the Immunopathogenesis of Immune Reconstitution Inflammatory Syndrome secondary to CNS disease and touched briefly on the project I plan to do for my Postdoctoral fellowship.

I was pleased to listen to another Ugandan postdoc fellow, John Kitayimbwa, supported by the MUII-Plus program presenting on Fine scale HIV transmission dynamics in a heterogeneous Ugandan population using structured coalescent models. This was particularly impressive for me because for a long time

now at most international meetings, it has been routine for African scientists to present on epidemiological studies with a paucity of presentations on mathematical modeling or basic science. Reflecting on this made me realize the significance of research funding from the Wellcome Trust and other partners on higher education in Africa on this transition in African-led scientific scope that is emerging.

The afternoon was focused on Helminths & Allergies, with presentations from Prof. Alison Elliott and a few of her students. Alex Aiken, an epidemiologist from the London School of Hygiene & Tropical Medicine presented on the worm wars, a topic that has become controversial. The gist of the presentation was that when his group reviewed the data through a rigorous meta-analysis on the impact of large scale drug administration against helminths, they showed that this intervention did not have an impact on school-going children. The publication of their findings generated a war of words in the media against the pro-dewormers and those who thought the intervention was not useful. Some lessons to take away

from this talk included the importance of having a good institutional press office, which handled the publicity surrounding their publication, the importance of learning how an academic scientist deals with the media.

Day 2 was mainly focused on HIV/TB interactions with several PhD and postdoc studies being highlighted in presentations from students both in Africa and in the U.K. Two specific clinical trials were highlighted in the afternoon session: the first was the MORDOR trial, which is looking at decreasing mortality in children using mass administration of azithromycin to children; the second was the STAMP trial, which is a randomized trial looking at whether sputum GeneXpert compared to sputum GeneXpert and urine LAM are comparable in TB diagnostics. This randomized trial was established by Professor Steve Lawn, a prolific TB/HIV researcher from the London School of Hygiene & Tropical Medicine who died last September from a brain tumor. The last event of the day was a tribute to Professor Steve Lawn, with speeches from Liz Corbett, his first PhD student in Cape Town and from his wife.

The final day had several presentations focused on health economics, dengue fever, eye infections including a presentation by an Ethiopian who had recently completed a clinical trial on best practices for surgical interventions to treat complications of trachoma as part of his PhD. His results have influenced WHO recommendations. A clinical trial, the AMBITION trial on cryptococcal meningitis was also presented. The Infectious Diseases Institute will be one of the clinical sites for this clinical trial to evaluate the non-inferiority of single-dose liposomal amphotericin vs 14 days of Amphotericin deoxycholate against a background of fluconazole.

Overall the meeting was excellent with very interesting presentations especially in the areas of basic science and genomics all of which were previously a preserve of Western scholars in the past. The meeting certainly demonstrated that the future of young African scientists is bright, provided they continue to be offered the opportunities to demonstrate their potential. However, more African-led science needs to be African funded and I hope that the future political landscape will view this as a priority.

Short and Long Term Perspectives on East Africans Studying Abroad

By Corinna Alberg

A personal highlight for 2017 so far for me was my visit to Uganda in February. I was delighted to have the chance to visit THRiVE and meet with three generations of THRiVE in one day – the alumni from THRiVE-1, those who had recently been awarded fellowships as part of THRiVE-2 and applicants for the second round of THRiVE-2 fellowships. The achievements of THRiVE-1 alumni must be an inspiration for the new THRiVE-2 fellows who can see how the opportunities afforded by THRiVE open up an exciting career in academia. Many of the research projects have also contributed to enhanced professional and personal development of the THRiVE-1 fellows that can be incorporated into routine ways of working.

The partnerships with the Northern Institutions provide further opportunities, not just for the period of the fellowship when new skills and techniques are being learnt. Important as this is, the collaborations developed at these UK partners can also mature into long lasting programmes of joint work. This requires enthusiasm and effort, as well as a commitment and investment of time to sustain these relationships. I look forward to THRiVE-2 fellows' visits to Cambridge and to following how the time they spend in Cambridge will impact on their research skills and to seeing how new relationships develop.

Another impression from my visit to Uganda was how lucky THRiVE fellows are to have such a skilled and dedicated team of staff at the THRiVE Secretariat to guide them through this key transition time in their careers. Too often, one

encounters people who have lost enthusiasm for their work or are going through the motions while being focused on other aspects of their lives. However, this is not the case at THRiVE. Given my regular interactions with the THRiVE secretariat over the past six months, I know that this is not a 9-5 activity for the staff. From the relentless timetable set by Nelson for himself, to responses to emails by Harriet as well as Ugandan bank holiday IT support provided by Dickson. Such a work ethic is contagious and will set a pattern for THRiVE fellows to emulate. While the focus of this piece has been on THRiVE fellows and the work going on in Uganda, I look forward to also meeting the Kenyan and Tanzanian THRiVE fellows at May's AGM. I am sure the THRiVE spirit inspires their activities too.

In Cambridge while I have been busy supporting the matching of THRiVE applicants to potential mentors and arranging expert reviews of applications, there has been much work highlighting some of the great projects across Africa that Cambridge – Africa and African colleagues are engaging in. In February 2017, Cambridge University's quarterly publication that focuses on pioneering research

had, for the first time, a special edition dedicated to Africa. Dr Pauline Essah, the Manager of the Cambridge-Africa programme (and former THRiVE Cambridge co-ordinator) was a key editorial adviser who supported the publication of this edition. The edition can be downloaded at http://www.cam.ac.uk/system/files/issue_32_research_horizons.pdf. In addition there are a series of articles on Africa that can be found at <http://www.cam.ac.uk/research/spotlight-on/africa> which are appropriately called Spotlight on Africa and we hope they will continue to shine a spotlight on Africa in the coming months.



And here is the long term perspective from 1890!

Creating Value for Money in detecting Low-Level HIV-1 drug Resistance mutations in the THRiVE -2 supported Laboratories at UVRI

By Dr. Jonathan Kayondo and Rose Naluwuge –UVRI-Core Laboratories

Research in developing countries is limited by lack of funding, equipment and expertise. Continuing genetic research in HIV Drug Resistance is essential to understand HIV and to develop strategies for treatment and prevention. We are developing a simple, cost effective polymerase chain reaction based technique as a research tool in the detection of the single nucleotide polymorphisms-the Allele-specific polymerase chain reaction (AS-PCR).

The Allele-specific polymerase chain reaction (AS-PCR), also known as PCR amplification of specific alleles (PASA) is a PCR-based method which can be employed to detect the variable positions in DNA sequence known as Single Nucleotide

Polymorphisms. The concept of AS-PCR was initiated by Newton and others approximately six years after PCR was invented. In this approach, the specific primers are designed to permit amplification by DNA polymerase only if the nucleotide at the 3'-end of the primer perfectly complements the base at the variant or wild-type sequences

The experiment (assay) is being optimized to detect single nucleotide polymorphisms in the main circulating Human HIV genomes in Uganda DNA samples targeting reverse transcriptase Inhibitor Mutations i.e. K103N, M184V, G190A, Y181c, and K103S. This strategy combines two reactions; a discriminatory mutation specific reaction and a non-discriminating total copy reaction amplifying from both wild type and mutant genomes adoptable to a real time PCR. Primers for both reactions have been designed by using ap-

propriate software to permit the PCR amplification only if the nucleotide at the 3'-end of the primer complemented the base at the wild-type or variant-type DNA sample. After the amplification, electrophoresis is performed at 100 V for 30 min in 0.5X tris-acetate-EDTA buffer on 1% Agarose gel stained with Ethidium bromide (0.5 µg/µL). The amplified PCR products are visualized under UV light. This work is all done in the THRiVE supported laboratories Core Laboratories at the Uganda Virus Research Institute, under the mentorship and supervision of Dr. Jonathan Kayondo.

The plan is to fully optimize the assay against 19 already selected primer sets from about 124 primer combinations with real time PCR. This method will enable researchers to carry out genetic polymorphism studies for genetic risk factors associated with HIV-1 without the use of expensive instrumentation and reagents while creating value for money.



THRiVE Fellowship Thrusts me into Exciting training in Mwanza

By Mary Vincent Masha (THRiVE PhD Fellow)



The THRiVE fellowship has become a cornerstone for my success. The year started with a Research Methods Course in Mwanza “The Rock City”. This was an amazing opportunity for meeting new friends and building networks. It was a pleasure to meet my THRiVE colleagues from Kenya and Uganda, and many people from different institutions.

The course was very well organized and packed with

lectures and practicals. I was inspired to see young, competent, and energetic leaders in research with an amazing array of research skills, sharing their expertise. The course has advanced my knowledge and skills and prepared me for takeoff in writing my proposal. The environment was supportive and stimulating for learning and early engagement in research ideas.



THRiVE-2 Brings Mendeley Reference Manager to Gulu University

By Emilio Ovuga and Onen Waleter Yago, Gulu University

Among the key factors inhibiting research and scientific publications is lack of skills to access scientific literature. The cost of accessing literature is often frustratingly high. The emergence of several open access journals has not helped the situation much particularly at Gulu University. Thanks to THRiVE-2 that recently introduced faculty staff and students of Gulu University, and health care providers at Gulu Regional Referral Hospital (GRRH) to Mendeley reference manager.

In his opening remarks, the THRiVE-2 Co-Applicant at Gulu welcomed participants to the three days course at GRRH conference room. The Co-Applicant commended Elsevier for offering Mendeley reference manager for free. Describing the reference manager as user-friendly, he said that the software could be used to access a wide range of references, cite references as one writes, and to help health managers and policy makers to use e-data to improve their decision-making processes. What’s more, Mendeley keeps track of researchers downloads and makes suggestions for personalized reference materials based on the collections in their online Mendeley library.

The Co-Applicant appealed to participants to not only use their new knowledge and skills to do research but also teach their colleagues and students the knowledge they were about to receive. The trainers at the course were Alison Kinengyere, PhD, of Makerere University College of Health Sciences, and Mr. Onan Mulumba of Makerere University College of Agricultural and Environ-



Participants at a Mendeley training workshop in Gulu

this module by participants ranged from good to excellent, indicating that they achieved -to a greater extent- what they wanted to learn. It was excitement among participants after completing training. One of the academic/researcher had this to say: “...the module was a nice one, helpful and educative. I now know how to effectively search literature online...I find it interesting to have discovered free databases where I can get articles and books more easily and timely”.

mental Sciences.

The training was opportune because academic staff, librarians and researchers at Gulu University had for some time been yearning for their online literature search skills to be sharpened. THRiVE came in timely to provide the desired training. Part

of the training modules was developing online search strategies and techniques. These techniques were practiced in searching HINARI and other free online databases including booksc.org, bookzz.org, directorate of open access journals (DOAJ) and PubMed to allow participants have hands-on experience. The ratings of

A strong recommendation is that “Participants should continuously do practice after the training so that they sustain the skills learned. Librarians who participated should scale - up the training to cover every faculty, including students and other researchers”.

My Experience Participating in the Mwanza Research Methods Course

By Caroline Tigoi

The THRiVE fellowship award is such a unique opportunity that has given me a chance to advance my career to the next level. It is an amazing opportunity to be part of the THRiVE community. I have very supportive mentors who are highly experienced in my research area. The fellowship has given me the opportunity to work at *icipe* under the supervision of highly experience researchers and this is a learning opportunity for me.

Recently, I had a chance to attend the Mwanza Research methods course in Mwanza Tanzania that is offered by National Institute of Medical Research (NIMR) and London School of Hygiene and Tropical Medicine (LSHTM) on 26th February to 11th of March 2017. This was a very good opportunity of training and since then I have acquired knowledge and understanding of

the principles underlying research techniques. This includes the different types of study designs and their application in research. This was a very insightful session with a lot of practical sessions. I also learnt how to conduct literature review which I have now applied in my project proposal writing, improving the quality of my work. We learnt a lot about epidemiology and public health and the skills gained will be applicable in my day-to-day work. The most useful session to me was on statistical methods, more importantly, the practical session on actual data analysis using EPI info and Excel packages. I have gained a lot of skills that I will use during analysis of my data. The laboratory and field methods session was very timely because my project is field and lab based. Training on Good Clinical practice, Good Clinical and Laboratory practice was very useful and is applicable daily in clinical and laboratory research. I also learnt how to develop a lab budget for a research project. The

research ethics session covered all ethical issues in research projects which I will use, given that I am currently working on my proposal and I expect to apply the skills gained as I seek ethical approval for my work. The Mwanza RM course also gave me opportunity to network with highly experienced facilitators as well as meet with other researchers and more importantly other THRiVE PhD fellows. We were able to exchange ideas that will be useful as we progress with our PhD studies.



The author working with her colleagues during the training

THRiVE Reaps Big at the 67th M

By Harriet Nambooze

Makerere University's 67th graduation saw 8 of the 14 THRiVE-1 funded PhD fellows graduating on 23rd February 2017 at the Makerere University Freedom Square. The College of Health Sciences (CHS) graduated 19 PhD students and 8 of these were funded by THRiVE. Another THRiVE fellow, a faculty of College of Business and Management Statistics also graduated at the same occasion. Yet another PhD student received partial support from the Consortium. Two fellows graduated at the 66th Graduation Ceremony, one has already successfully defended his PhD thesis while the remaining 3 are expected to defend theirs this year. We present below the abstracts of the fellows who graduated that day:

Ms. Allen Kabagenyi- Degree of Doctor of Philosophy (Population studies)

High fertility rates in Uganda: is low contraceptive prevalence responsible?

She investigated whether there is stalled fertility in Uganda and sought to explain the low contraceptive prevalence and high fertility levels. Her research showed no evidence of a fertility stall for the period 1973-2011, challenging the notion that socio-economic growth stalls fertility. Also, low contraceptive use was not the sole predictor of persistent high births, but a combination of education, age at marriage, age of respondents and partner characteristics. Furthermore, the study established negative misconceptions and beliefs related to low use of modern contraception including: fear of side effects, stigma associated with use, domestic violence, preference for large families and polygamy. At the health facilities, regular stock-out, limited choices, partner opposition and lack of provider expertise were barriers

to Family Planning utilization. The study recommended education of females beyond secondary, late entry of females into marriage, small family size, training more health workers, and use of effective contraception would reduce the high fertility rates. She was supervised by Prof. James M. Ntozi, Assoc. Prof. Lynn Atuyambe, and Dr. Alice Reid.

Dr. Moses Galukande - Degree of Doctor of Philosophy (Medicine)

Breast cancer: molecular subtypes, risk factors, delays in diagnosis and survival experiences at Mulago Hospital, Uganda

He investigated breast cancer molecular subtypes, risk factors, delays in seeking treatment, and survival among women in Uganda. The study revealed an over representation of poor prognosis breast cancer molecular subtypes. Breast-feeding was a protective factor against breast cancer. There were excessive delays of over 12 months from noticing symptoms to seeking appropriate medical care. Thirty per cent of women who sought care did not return after the initial contact to complete treatment, while over 75% of women presented with late disease. The 5-year survival was much lower than other societies. However, the 5-year survival rate of the few that presented with early stage disease very high. The findings provide opportunities to reduce breast cancer related mortality and the need to fill the knowledge gaps. He was supervised by Prof. Henry Wabinga, assoc. Prof. Florence Mirembe, other mentors included Prof. Alexander Asea and Prof. Mike Stratton.

Ms. Stella Kepha - Degree of Doctor of Philosophy (Public Health)

Effect of repeated anthelmintic treatment on malaria in school

children in Kenya: a randomized, open label, equivalence trial

She investigated the impact of repeated deworming on the risk of clinical malaria among school children in western Kenya. The purpose of the study was to better understand the impact of deworming on malaria and soil transmitted helminthes (STH), and epidemiology of malaria among school children. The study demonstrated STH infections are still prevalent, despite the ongoing national deworming programme in Kenya, malaria parasitaemia is widespread, such that coinfection of malaria and STH occurs among a significant proportion of children. Finally repeated deworming does not alter risk of clinical malaria or malaria parasitaemia among school children and suggests that school-based deworming in Africa may have no adverse consequences for malaria. She was supervised by Prof. Fred Nuwaha and Prof Simon Brooker.

Mr. Ronald Kiguba- Degree of Doctor of Philosophy (Health Sciences)

Pharmacoepidemiology of medication errors and suspected adverse drug reactions in the Ugandan Health Care System

He evaluated the pharmacovigilance system in Uganda, specifically, the attitudes and practices of health-care professionals (HCPs) towards the recognition and reporting of suspected adverse drug reactions (ADRs) and medication errors (MEs). He established that patient ADR-complaint in the previous month was a dominant factor in the recognition of suspected ADRs and most HCPs valued patient involvement in ME reporting. Previous-year ADR reporting was higher at hospital-level staff and in medicine, but lower for private for-profit health

Makerere University Graduation

facilities. He observed an extensive antibiotic prescription rate in Mulago national referral hospital, with rampant missed-dose days, the first day was the most abused; and a high risk of suspected ADRs linked to the use of ceftriaxone, levofloxacin and metronidazole that are safe. Empowering patients to communicate ADR-complaints to HCPs or directly to relevant medication safety bodies can promote medication safety. The hospitals need to sort out the logistical bottlenecks that cause inpatients to delay initiation or miss continuation of prescribed medications. This study was funded by THRiVE, African Population and Health Research Centre. He was supervised by Prof. Paul Waako, Assoc. Prof. Charles Karamagi, and Prof. Sheila Bird.

Dr. Joseph Matovu- Degree of Doctor of Philosophy (Public Health)

Demand-creation for couples' HIV counseling and testing among married or cohabiting individuals in Rakai, Uganda: Trends, motivations, barriers and intervention outcomes

His research aimed at developing an intervention to improve HIV counseling and testing among couples in Rakai, south-western Uganda. The study found low levels of couples' HIV testing. An intervention was developed to engage married individuals in small group, interactive sessions reinforced with testimonies from previously tested couples study.

findings show that individuals who were reached by the intervention were more likely to test with their partners than their counterparts. These findings will inform the implementation of the national couples' HIV counseling and Testing strategy. He was supervised by

Assoc. Prof. Fred Wabwire-Mangen, Prof. David Serwadda, Assoc. Prof. Rhoda Wanyenze and Prof. Jim Todd.

Dr. David Meya Bisagaya- Degree of Doctor of Philosophy (Medicine)

Immunopathogenesis of immune reconstitution inflammatory syndrome secondary to central nervous system infections in HIV- infected patients

He studied the function of the immune system in HIV-infected patients with meningitis caused by a fungus. He sought to understand why one third of patients treated for this meningitis tend to get worse after starting antiretroviral drugs. his findings suggest that, despite the immune system improving after starting antiretroviral drugs, the immune system sends certain types of cells to the brain that are abnormally active, causing recurrence of the symptoms of meningitis even in the absence of the actual fungus. He identified these cells and how they function. His work has enabled scientists to understand what happens in those patients who seem to get worse after treatment for fungal meningitis and who initiate antiretroviral drugs. The findings will be useful in developing treatment for patients with fungal meningitis who get worse after starting antiretroviral drugs. He was supervised by Prof. Moses Joloba, Prof. Yuka Manabe, Dr. Steve Cose and Prof. Edward Janoff.

Dr. Doris Mwesigire- Degree of Doctor of Philosophy (Medicine)

Quality of life in HIV patients attending an urban clinic in Uganda: a cohort study

He studied how the availability of

antiretroviral therapy has transformed HIV into a chronic illness, and people living with HIV can now live longer; and she also studied quality of their life and how it changes over time. she found the following to negatively affect quality of life: not receiving antiretroviral therapy, having depression, old age, late disease stage, female gender, other infections, none or low level of education and consumption of alcohol. Patients on antiretroviral therapy have better quality of life compared to those who are not on therapy. However, patients on antiretroviral therapy require more psychosocial support to improve their mental health. The current first line treatment drugs had comparable quality of life scores change in CD4 cell count does not reflect change in quality of life. despite the depiction of good quality of life from the patient narratives, they still suffer from stigma, non-disclosure and uncertainty about the future that may negatively affect quality of life. She was supervised by Dr. Achilles Katamba and Prof. Janet Seeley.

Dr. Sam Ononge- Degree of Doctor of Philosophy (Medicine)

Management of postpartum haemorrhage in rural Uganda: perceptions, risk factors, and effectiveness of antenatal distribution of Misoprostol to women to self-administer after childbirth

Postpartum haemorrhage is responsible for one quarter of all the maternal deaths in Uganda.

He investigated the management of postpartum haemorrhage in rural Uganda; perceptions, risk factors and effectiveness of antenatal distribution of misoprostol to women for self-administration after childbirth. He found a third of pregnant women were anaemic, and identified multiple pregnancy, caesarean

THRiVE Reaps Big at the 67th Makerere University Graduation

section delivery, and a big baby and HIV infection as risk factors for postpartum haemorrhage. Furthermore, he found that antenatal distribution of misoprostol (a drug that prevents excessive bleeding) to women for self-administration after childbirth was acceptable, safe, and increased uterotonic coverage. The study recommends distribution of misoprostol to pregnant women for self-administration after childbirth as a strategy to increase the number of women who access drugs that prevent excessive bleeding after childbirth and reduce the burden of postpartum haemorrhage among Ugan-

dan women. She was supervised by Assoc. Prof. Florence Mirembe and Prof. Oona Campbell.

Dr. Miriam Nakalembe - Degree of Doctor of Philosophy (Medicine)

Antibody responses elicited by the ASO4-adjuvanted HPV 16/18 vaccine among girls aged 10-16 years in Western Uganda

Dr. Miriam investigated antibody responses elicited by the cervical cancer vaccine among girls aged 10-16 years in western Uganda. Her study was motivated by the high burden of cervical cancer in the country with little progress in secondary preven-

tion. The findings showed that the vaccine was highly immunogenic hence generating confidence in the cervical cancer vaccine in Uganda where there were concerns that prevalent immune compromising infections (HIV, helminths and malaria) may affect the immune response to the vaccine. The study supports continued use of the cervical cancer vaccines at the primary level of cervical cancer prevention. She received partial funds from THRiVE for the shipment, handling and carrying out quality control of your PhD study samples in a reference laboratory in South Africa. She was supervised by Assoc. Prof. Florence M. Mirembe, Dr. Cecily Banura and Prof. Deborah Money.

Mwanza research methods course still going strong in THRiVE 2!

By Gerry Mshana

The Mwanza research methods course run annually by the National Institute for Medical Research (NIMR) in Mwanza, Tanzania continues to be popular among early career researchers in the East African region. The course was designed to cater for the needs of researchers in the early stages of their careers. It complements what is offered in formal training institutions (such as universities) by focussing on both theoretical and practical training covering the key stages in research process i.e. project design, implementation and analysis of data.

Since its inception in 2011, the course has been delivered consistently with the same high quality. The course tutors are expert researchers at NIMR and the London School of Hygiene and Tropical Medicine who ensure quality teaching and suggest practical solutions to problems that the participants present from their projects. The costs for attending the course has also been kept down in order to give an opportunity to as many participants as possible to attend from the different countries in the East African region and beyond.

The course was one of the highlight achievements of THRiVE 1 having trained 123 researchers between 2011 and 2016. Course graduates have utilised the knowledge in different ways – some to complement their post graduate training at Masters, PhD and post doctoral levels. Efforts to establish alumni of the course are underway to enhance networking – another objective of THRiVE.

This year the course was ran from the 27th of February to the 3rd of March 2017. Demand for the course is increasing – evident by the record number of applications received for this year's course! A total of 84 applications were received – unfortunately we

could only accommodate 41 out the total! The participants came from a diverse of countries: 9 from Uganda; and one each from Kenya, Malawi, Zambia and Ethiopia. Out of these, 11 were PhD students some from the recently recruited THRiVE cohort and others with different sources of sponsorship.

Due to the increasing demand for the course, NIMR Mwanza is considering running it twice a year. Moreover, discussions with some universities in the east African region and the UK to explore the possibility of accrediting the course as a module within their curricular are ongoing.



Mwanza research methods course class of 2017