



Editorial

Dear Reader,

Most articles in this Issue of THRIVE News are from our fellows. This past November we completed the six-monthly progress reviews of all THRIVE doctoral and postdoctoral fellows through 2-hour online meetings every week. The next reviews are due in the last week of January 2021. During this quiet period, in between these reviews, is time to deeply reflect about our aspirations of maintaining very high-quality training during the continuing COVID-19 pandemic and thereafter.

Gundula Bosch who directs the R3 Graduate Science Initiative at the Johns Hopkins Bloomberg School of Public Health argues for a rethink of how doctoral training should be in order to produce “the big thinkers and creative problem-solvers that society needs”. In her article “Train PhD students to be thinkers and not just specialists” in Nature 2018 she argued for a need to “put the philosophy back into the doctorate of philosophy: that is, the ‘Ph’ back into the PhD”. In this regard students should not only apply rigour to their research but view their work through the lens of social responsibility. In addition, student’s participation in “interdisciplinary discussion series would encourage broad and critical thinking about science”. Other very useful courses may cover “the anatomy of errors and misconduct in

[Continue to page 2](#)

Dr. Gerald Mboowa wins 2020 Anglophone Young Investigators Award



By Racheal Ninsiima

“I am so excited to be awarded the Anglophone prize for the Young Investigators Award – 2020 by the African Association for Research & Control of Anti-Microbial Resistance (AAAMR),” reads a statement off Dr Gerald Mboowa’s twitter handle.

Mboowa, a bioinformatics scientist at the African Center of Excellence in Bioinformatics & Data Intensive Sciences of the Infectious Diseases Institute, Makerere University, was awarded €10,000 (approximately UGX 44.5M) by the Mali based African Association for research and control of Anti-Microbial Resistance (AAAMR) with funding from Institut Mérieux. This was in recognition of his innovation, the Rapid Microbial Analysis Pipeline (rMAP). rMAP is an automated bioinformatics tool for analyzing, interpreting and tracking antimicrobial resistance (AMR). It is

able to exhaustively decode bacterial resistance with minimal hands involvement.

Additionally, this tool is able to perform a number of functions including: downloading raw sequence data from the National Center for Biotechnology Information (NCBI)-Sequence Read Archive (SRA); run quality control checks; detect antibiotic resistance using a comprehensive reference database as well as novel antimicrobial resistance genes and virulence factors and create results in standard bioinformatics file formats as well as HTML reports, among others.

rMAP is available on GitHub, an online hosting platform for bioinformatics software development. It is envisioned that the application of this tool for real-time detection of drug resistant pathogens is essential to combat their (resistant pathogens) increasing threat. Globally, drug-

[Continue to page 2](#)

MUST READ

Scientist wins big by sharing his research with the public

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[Story on page 3](#)

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[Story on page 5](#)

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[Story on page 7](#)

Editorial ... from Pg. 1

scientific practice” and “how to dissect the scientific literature”.

Moving forward THRiVE should continue to attract the brightest and most creative minds in the Consortium, mentor and nurture them to become excellent researchers and research leaders. The Consortium

should scale up offering courses that lead to strong acquisition of transferrable skills including leadership, rigorous research, scientific integrity, logic, mathematical skills and scientific citizenship integrated into students’ research work. We should escalate our focus on encouraging and supporting more women in science and create conditions that cultivate interdisciplinary or multidisciplinary approach to research.

Dr. Mboowa Award ... from Pg. 1

resistant infections could cause 10 million deaths each year by 2050. In Africa, AMR has already been documented to be a problem for HIV and the pathogens that cause malaria, tuberculosis, and gonorrhoea.

Nonetheless, various independent research shows that AMR can be accurately predicted from analyzing a sample of DNA for many bacteria, a process known as genomic sequencing. However,

the sequence-based approach to AMR detection requires robust bioinformatics tools to analyze and determine the genomic structure of the drug resistance conferring genes. In this regard, the rMAP is a timely innovation to offer comprehensive profiling of drug resistant bacteria with precision. This tool will undeniably lead to a paradigm shift in the way that scientists conduct AMR surveillance and compare results internationally.

On the other hand, the Young Investigators Award will

enable Dr. Mboowa to continue conducting research on AMR. It was presented to him during

a webinar on antimicrobial resistance organized by AAAMR on December 14 2020.



Dr. Mboowa Gerald

Dr. Bargul’s Community Engagement Project lands him on school management board

Ms. Andrea Ouma- Communications Intern, THRiVE-icipe



Dr. Joel Bargul making a presentation on his research findings to livestock farmers and various stakeholders during data dissemination workshop in Laisamis, Marsabit county, Northern Kenya.

Over the last three years, Dr. Joel Bargul, a THRiVE-2 Postdoctoral Fellow has catalogued blood-borne pathogens infecting camels in northern Kenya and has sought to understand the role of biting flies commonly known as camel keds in the transmission of these pathogens. Throughout the research, Dr. Bargul and his colleagues at icipe profiled camel diseases circulating in northern Kenya as a basis to guide in designing appropriate disease control measures to be adapted

by the farmers at Laisamis, Marsabit. To achieve this, the team were fortunate to engage with the local community, particularly the livestock farmers, as an integral part of his research work.

“The camel farmers being with their livestock all the time understand best the challenges they face with their livestock including diseases and pests and thus they shaped my research towards finding a scientific solution to these problems,” said **Dr. Bargul** in an

interview.

As a result of community engagement, the research team envisioned better management of these diseases which would lead to improved livestock production in terms of meat and milk production. Eventually, this would lead to better livelihoods of marginalized nomadic pastoralists of northern Kenya.

In October 2020, the research team visited Laisamis with the purpose of organizing a workshop to discuss livestock diseases and their transmission by biting flies. Additionally, they wanted to conduct surveys to understand the pastoral community’s perception towards gender equity in education and leadership. The survey was conducted among parents and students of Laisamis Secondary School, the school Dr. Bargul identified for his community engagement project.

The workshop was attended by various stakeholders from the County’s Ministry of Education; Ministry of Agriculture, Livestock and Fisheries; representatives from local administration and livestock farmers. The team from icipe highlighted the objectives

of the education survey plan and highlighted expected impacts the study will have in promoting improved access to higher levels of education in order to produce critical mass of future leaders in research and innovation for development. The team reported their findings on livestock diseases and the role of biting keds in disease transmission and effective control measures for vector-borne diseases.

The research revealed that these flies (known as Dakar in the Samburu language) are vectors of anaplasmosis disease (Ndiss in Samburu) caused by a new type of bacterial pathogen that has just been detected in Kenyan camels for the first time. However, Dakar flies do not transmit Trypanosomiasis (Saar - Samburu; Omar - Rendille) as earlier proposed by most camel keepers during an interactive mutual engagement session with the livestock-keeping community.

Fruits of Community Engagement

Dr. Bargul’s research has continued to have a strong component of community and public engagement. The research

team's collaboration with Laisamis Secondary School (LSS) has contributed to the success of the ongoing THRiVE-2 and the African Academy of Sciences-funded research projects. This partnership has enabled Dr. Bargul and his team to strengthen the community's perception towards gender equality in education and leadership.

"I aim to motivate school going girls and boys to motivate them in research relating to the subjects they are taught in school such as biology, chemistry, physics, mathematics, among others in order for them to be future leaders in research and innovation for development", he explains.

As a result of this successful engagement with Laisamis Secondary School, Mr. James

Maina Joseph, the school's Principal, has requested Dr. Bargul to join the School Board of Management as a member for the period of three years. Dr. Bargul says this position will provide him with a unique chance to offer leadership support to advance the goals of this school, especially in encouraging careers in the sciences.

The other stakeholders, including farmers, appreciated the work undertaken by the research team and thanked them for providing feedback on diseases affecting

their livestock.

The findings of the study will guide relevant stakeholders to put in place appropriate interventions to improve equitable access to education

by both boys and girls in the community in line with Sustainable Development Goals 4 and 5 which advocate for quality education and gender equality.



Laisamis Secondary School students after engaging with Dr. Joel Bargul in focused group discussions on gender equity in formal education and gender roles in leadership.

Scientist wins big by sharing his research with the public

Racheal Ninsiima, Communications Officer-THRiVE

After you've spent months and maybe even years on your academic research and finally have it published, what's next? Will the general public read and understand your research? Will the research sit on a shelf and gather dust or will it actually spark interest from the general public? For Dr. Emmy Okello, a consultant cardiologist and senior researcher at the Uganda Heart Institute, involving community members at all levels of the research process, and from the start is critical. He did so and his research has thanked him for it.

When THRiVE awarded him a post-doctoral research grant to study acute rheumatic fever (ARF) in 2017, he made sure his results reached the community that stood to benefit from them. His strategy was to involve communities in Gulu and Lira districts, the study sites, to discuss the importance of this research and dispel any

misconceptions. So, Dr. Okello, designed a community and public engagement (CPE) project targeting community volunteers, primary health care workers and the general public.

The objectives of his engagement included: gaining public and community acceptance for his research, gather community views to guide in study design and improve retention of study participants. To achieve this, he held radio talk shows with the area's local leadership and organized town hall meetings with primary health care workers and community volunteers.

"Public engagement via radio helped to change community perceptions about research in general. Where people previously thought research as exploitative, they now saw it as beneficial to the individual and community," he says.

By engaging non-scientific communities in Gulu and Lira, the researcher found it much easier to recruit and retain research subjects, who were children. His study enrolled 916 children to be administered penicillin injection monthly for two years. Therefore, acceptance by district and school leaders was critical to adherence and follow up. By the end of the research, his study had about 90% retention of the children recruited.

Moreover, conversations with local leaders, primary health care workers, community volunteers and parents helped Dr. Okello to generate feedback on how the study should be implemented. For example, participants watched an

animated video of the entire research process before individual consents were given and this helped to modify the consenting process. The norm in consenting is that participants are debriefed about the study and later a consent or assent form is read to them before they can sign on it.

"As a researcher, I had not foreseen that participants would request to watch a video about the research and consenting process. When they did, I had to revise my study protocol and resubmit it for approval to the Ethical Review Board," Dr Okello recalls.

Thus, by the time consent and assent was obtained, study participants were knowledgeable about the research and what was required of them.

Community and public engagement has brought out the best in Dr. Okello as a researcher. He told THRiVE that since he initiated his community and public engagement project on ARE, many community members have reached out to him, wanting to understand the disease process and how they can protect their children.

He observes that if any research is to succeed, researchers ought to engage their communities early, including a representative sample of the intended study population. This allows one to receive early guidance that may help him/her to modify their study.

By engaging non-scientific communities in Gulu and Lira, the researcher found it much easier to recruit and retain up 90% of research subjects, who were children.



Dr. Emmy Okello (c) shares a photo moment with participants at a Rheumatic Heart Disease Workshop

Dr. Emmy Okello's postdoc experience: Responsibilities, Opportunities & Hope



Dr. Emmy Okello is a consultant cardiologist and senior researcher at the Uganda Heart Institute

Tell us about your current position, your research background and experience. I am a consultant cardiologist and senior researcher at the Uganda Heart Institute where I direct the adult cardiovascular division.

What is your favorite aspect about doing research? And your least favorite too. I like research because it allows us to ask questions about conditions that we see in clinical practice. During research, we design studies that seek to answer those questions. There is a lot of education that one gains when they perform research at the highest level, including new science, ethics and administration.

What motivated you to pursue a postdoc? Having completed my PhD in rheumatic heart disease

in 2015, many questions remained unanswered, including how one progresses from a simple sore throat to a debilitating heart condition that leads to premature death. I therefore took a step back to better understand acute rheumatic fever, the condition that progresses to rheumatic heart disease.

Tell us more about your postdoctoral research work. My work sought to understand how children and young adults who get infected with bacteria called Step A go on to develop a febrile illness that eventually leads to heart disease. As you can imagine, there are many causes of fever, sore throat and joint pain in the community and these can result in missed opportunities. Our study used an innovative method that employed

enhanced community education, heart testing, on spot laboratory testing that enabled us to delineate other causes of fever and joint pain in the community within 24 hours. This was done to make it easier for the health workers to quickly work out the different causes of fever and joint pain and pick out cases of acute rheumatic fever.

What were the main findings of this research? We found that there are many cases of acute rheumatic fever in the community and that a combination of tests that are locally available can lead a health worker to a diagnosis so that early treatment is started.

What did you particularly enjoy about your postdoctoral experience and why?

THRIVE consortium, the sponsor of the grant, made available and exposed us to many training opportunities including leadership training. We therefore gained new knowledge in science but also had capacity building to handle our day-to-day work.

Please tell us about the main accomplishments you have had on your postdoctoral journey. Oh several, mainly in the research space. We have been able to develop several positional statements that will lead to guideline changes and

hopefully better care for patients with RHD. I was also part of the team that drafted the Addis Ababa communique by the African union that was key in supporting the WHO resolution that made RHD a global priority.

What difficulties did you encounter during your postdoctoral fellowship and how did you overcome them? At this level you end up with so many things to do that time becomes a scarce resource. A good way to overcome it is to train and mentor others to take up some of the work. At the end, you have a bigger, better performing team and the country and research community gains by having more skilled people.

How many publications do you have and what are the top journals you have published in? I have had over 100 publications over time. Most of them have been the result of collaborations and training so we have new colleagues coming through all the time. The breadth of work has also expanded. I have been lucky to publish in top Journals such the British Medical Journal (BMJ), Journal of the American Heart Association (JAHA), European Heart Journal (EHJ), American Journal of Cardiology and

the Cardiovascular journal of Africa (CVJA).

Has this post doctorate helped you reach your professional goals? If yes, tell us more.

Oh yes, plenty. My broad aim for this postdoctoral fellowship was to launch into population health research which I think has gone very well. I have also expanded my research network to more institutions and experts around the world.

Please tell us about your volunteer work within your profession. I do a lot of professional charity work aimed at preventing heart disease in the population. This, I do through the Pan Africa Society of Cardiology where I'm a secretary for Eastern Africa, the Uganda Heart Institute, the Uganda Heart Association and the World Heart Federation.

What does success mean for you in life? I think everyone defines what they call success. For a clinician researcher like me, 'one successful' opportunity leads to more questions. So, it's remains work in progress.

Where do you see yourself in 5-10 years? I see myself continuing to do population health research, building teams and institutional clinical and research capacity in Uganda and abroad especially in early detection and prevention of heart disease.

Lessons from the mentorship training in scientific writing at UVRI

Nyanzi E; Kayondo J; and Seeley J;

The Uganda Virus Research Institute (UVRI) is mandated to give expert advice, publish scientific evidence, provide policy guidance and inform practice for the Ministry of Health, partners and World Health Organization. To be able to address this mandate, senior and junior scientists must be able to present research evidence

in a clear and simple form. The UVRI with support from the Training Researchers into Vocational Excellence (THRIVE-2) supported an online mentorship training in scientific writing on November 3 and 4 2020. The training aimed to introduce trainees to the mentorship program in scientific writing and pair junior scientists (mentees) with senior scientists (mentors) so that they are able

to publish their research work. The training was also used to inspire, share skills and best practices by senior experienced scientists in order to enrich the skills of junior scientists in writing abstracts for presentation at national and international scientific conferences and manuscripts for publication in peer reviewed journals. The expected output of the training was to create a pool of paired mentors and



Some of the participants from departments and projects at UVRI that attended the training standing in front of the Training building at UVRI

mentees to support one another on the journey of scientific writing and publication.

The training was attended by 26 participants from Makerere University, UVRI, MRC/UVRI and LSHTM Uganda Research Unit and UVRI-IAVI. The training targeted PhD and MSc students with on-going research work and existing data sets that they could use for practice during the training. The methods of instruction involved on-line presentations with shared screens, sharing experiences and life time challenges faced by trainees and trainers during

scientific writing. The training was facilitated by Prof. Harriet Mayanja Kizza from Makerere College of Health Sciences, Prof. Janet Seeley from MRC/UVRI & London School of Hygiene and Tropical Medicine (MRC/UVRI/LSHTM Uganda Research Unit and Co-PI THRIVE-2 at UVRI); Dr. Tom Lutalo an experienced epidemiologist and chairman of the UVRI Research Ethics Committee, Ms. Ann Kapaata and Ms. Christine Amito - PhD students from Makerere University and Mr. Hudson Onen, PhD student and UVRI-THRIVE-2 MSc alumni. Dr.

Jonathan Kayondo -Coordinator THRIVE-2 and Mrs. Emily Nyanzi the Monitoring and Evaluation Assistant -THRIVE-2 also facilitated some sessions. The PhD students were involved to inspire trainees because they already have published work.

The training covered areas in collaborative research and publication, introduction to abstract writing (TIMRD and IMRD formats), identification of target journals for publication, qualitative research findings, identification of research problems for manuscript writing, formatting documents for research and scientific publication among others. The sessions were designed in such a way that all the participants participated in the discussions and the facilitators engaged the participants and encouraged them to share experiences and challenges. Presentations and guidance was provided on writing and presentation of data and graphics in a manuscript, presentation of qualitative findings and presentations on the formatting and general lay out of documents using Microsoft

Word. The participants were excited and exchanged contacts including email and phone numbers with facilitators.

The two-day training was concluded with an on-line evaluation using google forms. Eighteen (70%) out of the 26 respondents participated and returned forms. Summary results showed that most of the participants (91%) felt that the guidance from the experts was sufficient, while 9% thought the time during was too short [when asked if the training was beneficial]; and when they were asked if they could recommend the training to a friend the participants indicated that they would recommend fellow junior scientists (99%) since they found the training useful. A follow-up training is planned in the first quarter of 2021 for mentees that will have draft abstracts and manuscripts to show progress with their work.

Materials about the mentorship training can be found on this link: <https://www.uvri.go.ug/mentorship-and-grant-writing-training>

Scientist worried the accuracy of malaria testing kits could be compromised

Racheal Ninsiima, Communications Officer-THRIVE



Robert Kaaya is a THRIVE-2 PhD fellow and malaria scientist with the Pan African Malaria Vector Research Consortium (PAMVERC) at the Kilimanjaro Christian Medical University College (KCMC).

Since the adoption of the Malaria Rapid Diagnostic Tests (MRDTs) by Tanzania's government in 2009, malaria testing and diagnosis in health facilities has more than doubled. The test's short turn-around time, ease in use and less demand for expertise have proven a perfect substitute to the previously used method of examining malaria parasites in a patient's blood using a microscope; also known as microscopy. MRDTs detect specific proteins produced by the malaria parasites in the blood of infected individuals. Majority of the testing kits in Tanzania are used to detect the histidine rich protein-2 (HRP2) found in the malaria causing parasite, *Plasmodium falciparum* (pf).

However, Robert Diotrephe Kaaya, a malaria scientist with the Pan African Malaria Vector Research Consortium (PAMVERC) at the

Kilimanjaro Christian Medical University College (KCMC), is worried that change in the genes responsible for the production of the proteins may distort accuracy of the tests.

"Whenever there is a change in the gene, there will be impaired or low production of the proteins and this distorts diagnosis. Parasites lacking the protein, HRP2 cannot be detected by the Rapid Diagnostic Test and this may lead one to report false-negative results," says Kaaya, a PhD fellow with THRIVE (Training Health workers into Vocational Excellence).

False-negative MRDT results lead to underdiagnoses of malaria, and if patients who are infected but test negative do not receive antimalarial treatment, severe disease and even death may result.

Premised on this, Kaaya, through his PhD research, is examining prevalence of the lack of the pfhrp2 gene in malaria patients in Tanzania. Currently, he is conducting community-based surveys in Hadeni located in Tanga region and Lower Moshi found in Kilimanjaro.

Preliminary findings show that there is evidence of the malaria parasites lacking the HRP2, a phenomenon called gene deletion. This poses a serious threat to malaria control especially in areas of the country experiencing a high malaria burden.

"This concern warrants wide scale surveillance by government to monitor gene deletions and their impact in relation to MRDTs performance," Kaaya advises.

Through his PhD, he is also going to understand what the drivers for the deletions are.

Malaria parasites with HRP2 deletion were first reported from the Amazon region (Peru and neighboring countries) in 2010 and,

more recently, at high prevalence in Eritrea. Consequently, different research groups have recommended these countries to cease use of the pfhrp2 based MRDTS.

He is also a co-author of a novel protocol detailing the methodology of detecting gene deletions published in the National Center for Biotechnology Information Journal in May 2020. He is the only scientist from Tanzania featured in the protocol.

On publishing scientific papers from his PhD study, Kaaya says he is yet to because his research ought to undergo several rounds

of validation to ascertain that deletions are true. Nonetheless, he says that the THRiVE PhD fellowship has afforded him immense opportunities.

“It is helping to build me into becoming an independent researcher able to set timelines for myself and plan my field activities. I have also been exposed to various professionals in my field including my supervisors from LSHTM. Together, we are thinking of putting up research programs and writing research grants together,” he says.

In fact, 10 years from today, Kaaya sees

himself as an independent researcher holding several grants regarding malaria and arboviruses.

He appeals to academic institutions to establish communications offices in order to support scientists to liaise with and communicate their research with various audiences. To the scientists, he advises that it is important to streamline community and public engagement programs with their research from the beginning in order to expand the impact of their research projects on different communities.

THRiVE unveils state-of-the-art Graduate Resource Centre at Gulu University

Tabo Geoffrey and Racheal Ninsiima

Gulu University THRiVE-2 in September 2020 unveiled a state-of-the-art graduate resource centre for science students at Multifunctional Research Laboratories at Gulu University. Research capacity building is critical at higher institutions of learning for developing models for teaching and learning based on research outputs. This Centre is equipped with computers, software for data analysis, reference management software, and other equipment to support research. This resource centre doubles as a research ideation, research presentation and knowledge sharing environment for researchers in biological and life sciences. Additionally, it provides an interactive research atmosphere for peer learning and mentorship amongst researchers.

The center contributes to improving the research environment at Gulu University by providing high-end ICT infrastructure, equipment, and services for researchers. Working on improving ICT is a fundamental step to enhancing research capacity in science disciplines as stipulated in THRiVE-2 fourth Strategic Objective “Research Management and Environment”. Therefore, with such investments, THRiVE-2 is providing a foundation for research excellence at a partner institution and through academic

writing workshops, research completion grants and career development awards among others.

The centre is a much-needed resource because Gulu University operates in a resource constrained environment that presents the institution with challenges beyond its ability to increase access to required information by graduate students. Thus, this initiative is contributing to developing IT infrastructure for learning

“The resource centre is fully equipped with ICT infrastructure, a fundamental step to enhancing research capacity and research excellence in disciplines related to THRiVE thematic areas and beyond,” Prof Elizabeth Auma Opiyo told Prof David Owiny, the Deputy Vice Chancellor (DVC)-Academic Affairs, Gulu University, during the official launch of the centre. Prof. Opiyo is the Co-applicant of THRiVE research at Gulu University.

In his remarks, Prof. Owiny acknowledged contributions of THRiVE-2 to Gulu University and appealed to other projects to emulate what THRiVE has done.

On another occasion, during a visit by the National Council for Higher Education (NCHE), the DVC said that the Graduate

Resource Center had substantially added to university’s readiness for research and teaching. He pledged to support the center and ensure that all equipment needed in the server room and electricity challenges are addressed by the university management.

It is important to note that with the Covid-19 pandemic currently in play, ICT infrastructure and services through virtual environments are at the forefront providing enabling environment for research and learning.

It is envisioned that graduate students, Career Development Awardees and other researchers will use the centre to make weekly presentations to peers; group seminars, workshops and conferences and to execute manuscript development and review.



Prof. Elizabeth Opiyo (R) and other dignitaries during the official launch of the graduate resource centre at Gulu University

Remote working at Cambridge

Corinna Alberg, co-ordinator-THRiVE-2 at Cambridge, UK

The Cambridge-Africa team continues to work remotely as we have done since March. The novelty has worn off and a bit more social contact would be welcome even if that appears unlikely in the short to medium term. Today we are waiting to hear what social distancing measures are to be reinstated as the second wave of virus is mounting in the UK. As a result, it is unlikely that we will have African fellows visiting for a while. Laboratories are currently functioning again although with very strict distancing

arrangements in place and everyone who can work remotely is required to do so. In many ways, this was an easier transition for us than for many others, as we are very familiar with working effectively with African colleagues via virtual platforms but we look forward to the day when we can welcome African fellows back to Cambridge. Universities have been grappling with how they provide a high quality student experience safely where learning is not adversely impacted by this pandemic and we will wait to see the effect as students start or return to their University experience. Our COVID-19 testing capacity is already being severely tested!

The last couple of months have been focused on contributing to the DELTAS Africa II applications as DELTAS Africa I comes to an end. All the THRiVE partner organisations worked very hard to produce an excellent application and there was a real sense of the THRiVE family working together and appreciating all the important contributions that each partner made. We are very grateful to the secretariat and of course our Director, Prof. Sewankambo, for all their hard work on this as well as maintaining the effective functioning of THRiVE in these difficult times.

In Cambridge-Africa the annual cycle of activities continues. In my last newsletter article, I mentioned the COVID-19 specific ALBORADA call that funded over 15 COVID-19 related joint research projects between African researchers and Cambridge researchers. In the previous two months, we have convened expert panels to select which proposals will receive ALBORADA funding for 2020-1. Most of the applications were not related to COVID-19 in recognition that it is important for non COVID-19 research to continue also. Applications have ranged from those on archaeological research in Nigeria to fall army worm management to malaria and P.Vivax in Mauritania. We have also had applications from Cambridge and African researchers undertaking collaborative research in Uganda, Kenya

and Tanzania. The research programme is heavily oversubscribed and so many of the proposals cannot be awarded funding. Part of the selection criteria is how collaborative the research is and whether there will be an ongoing impact on research capacity in Africa. This year around 30 proposals are likely to be funded.

During September the new cohort of Cambridge-Africa PhD students are arriving in Cambridge and we look forward to welcoming them. This will be the sixth group of 5 Cambridge-Africa PhD scholars. Depending on the focus of their research, many scholars will spend their time in both Cambridge and Africa but are registered with the University of Cambridge. This year will provide particular challenges for the students as they settle into the University in light of the

pandemic. Although the Cambridge-Africa scholarship scheme has been a success, we recognise that we can always do things better. Currently Damilola Adebayo has joined the Cambridge-Africa team. He is a Cambridge-Africa PhD scholar who has recently submitted his thesis and is undertaking a review of the scholarship scheme with current and graduated Cambridge-Africa scholars. Over the summer, Dr Carol Ibe also joined the team for 3 months to look at how a similar scheme could be developed for Cambridge-Africa post-doctoral researchers. Currently applications are invited for the seventh cohort of Cambridge-Africa PhD scholars – please see our [website https://www.cambridge-africa.cam.ac.uk](https://www.cambridge-africa.cam.ac.uk) for more details on this and the other activities of the Cambridge-Africa programme.

Dealing with Kilimanjaro's growing childhood obesity numbers, research by research

Racheal Ninsiima

Childhood overweight and obesity in Kilimanjaro-Tanzania may seem paradoxical at first. After all, this is a region combating poverty and nutritional deficiencies. However, a recent study by Mary Mosha, a THRiVE PhD fellow, is showing overweight and obesity are growing problems here. In 2017, with a PhD fellowship offer in hand and determination at heart, she set out to examine claims regarding the health conditions among primary school children. Her study is titled, 'Understanding modifiable factors associated with childhood overweight and obesity in Tanzanian primary schools: establishing a foundation for evidence-based obesity prevention intervention.'

As part of her PhD research, Mosha conducted a pilot study to validate self-reported physical activity by accelerometry among primary school children in Kilimanjaro. Here, she assessed children reporting accuracy on their physical activity levels, and used accelerometers as a reference method. Accelerometers operate on the principle that they measure change in velocity over time (acceleration) enabling intensity of physical activity to be quantified.

In this pilot, Mosha enrolled 51 children, aged 9-11, and each wore an accelerometer for a week. These children

were supposed to remove the accelerometers when involved in water activities and when going to bed because the study did not aim to track the sleeping levels. Instead, they would put them on in the morning when going to school and remain with them throughout the day. At the end of the seven days, data from the accelerometers was downloaded using software and physical activity levels tracked.

"For long, people who want to assess levels of physical activity use self-reports and thus children have had to report their physical activity levels. From my pilot study, I found that self-reports were moderately relating with accelerometers," Mosha said in an interview.

She added that if one wants to understand physical activity as a modifiable factor, they should consider using self-reports and accelerometers if it is feasible. But for now, one can still use self-reports as a substitute for understanding physical activity levels.

For the main study, Mosha employed the Socio-Ecological model of overweight and obesity which illustrates how the health and well-being of an individual is determined by multiple influences that interact at macro and micro-level environments.

"There are a lot of factors surrounding a child that may predispose him/her to being overweight or obese. So in

my main study, I examined various factors associated with overweight and obesity at different influence levels such as the home, neighborhood and school environments. I focused on those areas in order to understand what could be done if we wanted to develop an intervention," Mosha said.

Preliminary findings indicate that prevalence of overweight and obesity in Kilimanjaro is about 15%, an increase from 8% in 2015. This implies that childhood obesity is a growing trend in Kilimanjaro and should be given attention. Ironically, she also found thinness among some children, implying that two forms of malnutrition exist in Kilimanjaro namely: overweight/obesity and thinness. Therefore, if someone wants to understand the nutritional status for children in Kilimanjaro, he/she has to focus on these two forms of malnutrition.

Starting Out

Mosha is no stranger to studies that focus on nutrition and body weight. She did a Bachelors of Home Economics and Human Nutrition at Sokoine University of Agriculture in Tanzania. Later, she pursued her first master's degree in Public Health from the Kilimanjaro Christian Medical College (KCMUCo) and second in Nutrition for Global Health from the London School of Hygiene and Tropical Medicine (LSHTM). It's during her second master's degree that she nurtured the idea of pursuing a PhD study on overweight and obesity in children. This is because she realized that it was a burgeoning problem in low and middle income countries, and Tanzania is among those.

"For my master's research, I found that the prevalence of childhood obesity in Moshi municipal district was about 8%.



Mary Mosha engages primary school children who were her study participants

However, this study was largely descriptive. This pre-empted me to seek understanding for the correlates of childhood obesity at different levels," she said, commenting on why she decided to pursue a PhD.

Engaging the public with her research

Mosha acknowledges that a meaningful relationship between science and society should exist and one way scientists may do this is by engaging a non-scientific audience with their research. On her part, she engaged secondary school students to think

about healthy lifestyle towards childhood overweight and obesity prevention.

"Secondary school students designed an exercise for primary school children. They gave the students an eating plate exercise 'healthy plate' where they told us what they ate and it's upon this that we taught them about healthy and unhealthy food. Later, they made a guide showing food rich in all nutrients," she says, adding that the students were also given healthy plate wall stickers to remind them of good eating behavior.

For young and upcoming scientists,

Mosha's advice is that they should persevere in hard work amid the heavy work load and tight deadlines.

About Mosha

She is a lecturer in Community Health Department at Kilimanjaro Christian Medical University College (KCMC) and coordinates medical students' community health programs at the Institute of Public Health. Additionally, she is a Principal Investigator of the "Uzima project: Places for Nourishment and Healing", a collaborative project between Cornell University, Ithaca New York and KCMC.

Journalists trained to report on the science of COVID-19

Racheal Ninsiima, Communications Officer –THRiVE



Dr. Alison Kinengyere leads a training session on Searching for Evidence

The Africa Center for Systematic Reviews and Knowledge Translation under the "Rapid Evidence Syntheses for Covid-19 pandemic policy decision making in Uganda (CoVPRES-Uganda)" project, which is funded by the Makerere University Research and Innovations Fund, together with THRiVE Consortium conducted a training for science journalists to report on new COVID-19 research or use existing scientific knowledge to report issues surrounding the pandemic.

This five-session training was held between September and November 2020 and involved journalists from various media stations namely: NTV, The New Vision, Daily Monitor, The Observer, UBC TV, CBS Radio, Chimp Reports, PML

Daily and Globe News. The primary objective of this training program was to improve the quality of media reporting on COVID-19 with reference to existing scientific knowledge. Journalists were trained in four thematic areas of: searching for COVID-19 evidence; critical appraisal of research reports; evidence synthesis and reporting uncertainty.

In the searching for evidence session, Dr. Alison Kinengyere shared with participants search techniques and the steps in the scientific information search process. These include: scoping a search topic; breaking down the question into key words; identifying information sources; combining search terms with different Boolean operators to come up with search string and

testing it. The session on critical appraisal was led by Dr. Ekwaro Obuku and he emphasized to journalists the need to identify the research question and examine whether the study in question answered the question. Additionally, he advised them to always look out for the study's sample size and what the results mean for the community.

Dr. Moses Ocan led the training on evidence synthesis and he told journalists that synthesis of evidence is achieved through searching, identifying, assessing and compiling research findings into a coherent body of work. The training ended on November 6 2020 with Dr. Daniel Semakula leading on the training topic of reporting uncertainty. During his presentation, he introduced the concept of 'Risk Communication' which is the exchange of real-

time information between experts and people facing threats to their health, economic or social well-being.

Journalists report major takeaways from this training.

"What I found most useful about the training is the ability to report science stories using evidence that has been synthesized from different research reports rather than basing on people's opinions," testified one of the journalists through a self-administered evaluation.

Another noted that the ability to understand biases in scientific reports was a big lesson learned during the training.

As a result of the training, journalists are now publishing research-based science articles on COVID-19 in national media.



Dr. Ocan leads a session on evidence synthesis



For More Information about THRiVE

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