A Very Excitingly Successful Cambridge Africa Day!

Sophia Mahroo and Pauline Essah

Cambridge THRiVE has been delighted to support and participate in the very successful, Inaugural ‘Cambridge-Africa Day’ at the University of Cambridge. This was the first ever University ‘Day’ focusing on a country or region in the world, and was organised by the Cambridge Africa Programme - which THRiVE is a precursor to, and part of. The full-day event took place on 30th October 2014 at Emmanuel College in Cambridge, and brought together African and Cambridge researchers (and students) from across disciplines to celebrate the wide range of ongoing, mutually-beneficial research collaborations and development initiatives between Cambridge and Africa.

The Vice Chancellor of the University, Professor Sir Leszek Borysiewicz, opened the programme to an audience of ~200 from >80 departments/centres/funding and development organisations in Cambridge and beyond, including some which are health-related, examples being the Wellcome Trust and the Royal Society of Chemistry. Sir Borysiewicz, who himself has a long history of health-related work in Africa, praised the achievements of the Cambridge-Africa Programme which he stated was now deeply embedded in the heart of the University of Cambridge. He presented engagement with the continent as a great opportunity to engage with a pool of people who could potentially be more able than those who are currently recruited to Cambridge; and an opportunity to enable those people to deliver their best and in turn to build those core opportunities in their own countries. He introduced the University’s commitment to funding a post in the Cambridge-Africa Programme and to funding Cambridge PhDs for African students that are linked to...
Dear Readers,

A look back at the last quarter of 2014 fills my heart with mixed reactions of anxiety and hope for the future of THRiVE. Anxiety is founded on the fact that our large Wellcome Trust grant will come to an end by the end of July 2015. True, grants start and end but the long march to research excellence is far from complete. There is a lot of hope however based on THRiVE’s vision by 2030.

We have built individual and institutional research capacities that will contribute to the development of both universities and research institutes into world class institutions. It is necessary to define what a world class university is and what processes and resources need to be in place to achieve and sustain that status.

The fact that THRiVE has built significant regional capacity in the last 5 years was further realized during the process of putting together the new proposals to the Wellcome Trust for the next round of possible 5 year funding. In this issue of THRiVE News this issue is emphasized in one of the lead articles. Thinking broadly this also calls for closer scrutiny on the appropriate matrix to measure impact of research capacity building. It is our desire that the research personalities developed with breadth of competencies and depth of understanding in their field will significantly contribute to development and refinement of this matrix. We should aim to utilize the products of our research to benefit human kind through social transformation processes that lead to improvement of health in our population.

Membership of the THRiVE Advisory Board

1. Prof. Wilfred Mbacham, Chair, Rest of Africa
2. Prof. Hannah Akuffo, Outside Africa
3. Dr. JPR Ochieng’Odero, Other Consortia
4. Prof. Jerome Kabakya, Uganda
5. Dr. Val Snewin, Wellcome Trust
6. Prof. Dominic Makawiti, Kenya
7. Prof. Ainory Peter Gesase, Tanzania
8. Prof. Nelson K. Sewankambo, Director, THRiVE
9. Dr. Saidi Kapiga, Deputy Director
10. Dr. Jean Baptiste Mazarati, Rwanda

in-country research. Sir Borysiewicz also strongly supported Cambridge’s role in advocating for African research institutions and influencing other globally leading universities to do the same.

The programme for the Day was packed with high profile speakers organised around 3 great themes and THRiVE took a central part (view the Programme of African and Cambridge Speakers and Session Chairs at https://cambridge-africa-day.eventbrite.co.uk). Professor Sheila Bird OBE spoke fervently and honestly about her experience of mentoring THRiVE Fellow Ronald Kiguba. She not only explained her aspirations for the research models developed by THRiVE to be taken up by other African nations, but importantly highlighted that the study methods developed in Ronald’s PhD had much merit for both Uganda and the UK.

THRiVE alumnus Dr Kennedy Amone-P’Olak gave a brilliant presentation about his THRiVE research, entitled “The mental health consequences of a protracted and violent armed conflict on youths in Northern Uganda”. He presented eloquently mentioning the input of both his Ugandan supervisor and Cambridge mentor (Professor Peter Jones, former Head of the Department of Psychiatry, now Deputy Head of the School of Clinical Medicine), and was an excellent ambassador for THRiVE. Cambridge THRiVE Coordinator, Dr Sophia Mahroo, also presented a poster about THRiVE for the very interesting poster session focusing on Africa-Cambridge links, and this was a great success too.

Interest in Africa (and THRiVE) is clearly growing exponentially and at a very rapid rate in Cambridge, as the free event was fully booked well in advance. The list of speakers was bursting at the seams and yet more potential speakers wanted to

Attendees networking and reading Cambridge-Africa-focused posters. A poster describing the achievements of THRiVE can just be seen on the main wall at the back.

Dr Kennedy Amone-P’Olak speaking on the Day
A Very Excitingly Successful Cambridge Africa Day!

participate. Interest was piqued and discussions and networking over the tea breaks, lunch and wine reception (with an African band playing) continued with excitement and passion well into dinner. The feedback from speakers and attendees has since been extremely positive and encouraging, with calls for another Cambridge-Africa Day in 2015. We think we have no choice but to do it all again, and will certainly showcase THRiVE at the next event, so do watch this space!

Watch and Listen to talks from the event on the Cambridge-Africa-Programme’s Youtube channel: https://www.youtube.com/playlist?list=PL2c4BuG8a98S8opKNeO2lgCZKPCj_dnnY.

(NB unfortunately a technical issue with the microphone during Kennedy’s talk only, resulted in the sound quality of the recording for his talk being less than ideal, but still audible.)

Photographs from the Day can also be viewed/downloaded at https://www.flickr.com/photos/cambridge-africa/sets/72157648928070138/.

ARAA 2014 Conference: Cont’d

Africa, Ethiopia, Zimbabwe and United States. The conference was graced by Professor John Shao former Provost of Kilimanjaro Christian Medical College and Professor Nelson Sewankambo, Principal Makerere University College of Health Sciences.

ARAA was inaugurated in November 2008 in Moshi, Tanzania and since then, conferences have been held on an annual basis in any of the East African countries: Moi University in Kenya (2009), Makerere University in Uganda (2010), Muhimbili University of Health and Allied Sciences in Tanzania (2012) and Kenya Medical Research Institute in Kenya (2013). ARAA is a hub of practical cases of excellence for research administrators in Africa. It provides a platform for discussions, training, capacity building initiatives, analysis and benchmarking of best practices and provision of solutions to research and development challenges in Africa.

Some of the lessons learnt and shared during the conference, which are pertinent to the growth of the profession include:-

- the importance of having champions in the field of research administration and management,
- attaching greater value to the creation of stronger regional linkages among institutions and research partners, participation in networks at institutional, national, regional and international levels, the need to professionalize research administration and management, appreciation of the value of research by management and creation of a clear career path.

Research administrators and managers were advised to ensure that their respective institutions develop research administration strategic plans. This plan should of focus on the key pillars that run research administration and management;

- Human resource capacity development, visibility and publicity, research ICT support, sustainable financial resources, innovation and knowledge translation and networks and partnerships. Generally the conference participants were satisfied with the conference arrangements and timely feedback from the organizers. The sessions were very interactive which enabled participants to exchange ideas and experiences. The diversity in country participation and cadres of professionals present not only showed the growth of the profession but also great interest and expanding popularity of research administration and management as a career.

ARAA acknowledges support from Makerere University College of Health Science through THRiVE (Training Health Researchers into Vocational Excellence in East Africa) which is supported by the Wellcome Trust and MESAU (Medical Education for Equitable Services Delivery to All Uganda) supported by the National Institutions of Health.

Overall rating of ARAA 2014 Conference

<table>
<thead>
<tr>
<th>Percentage of Delegates</th>
<th># Did not fill</th>
<th># Excellent</th>
<th># Fair</th>
<th># Good</th>
<th># Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>14.01%</td>
<td>25.16%</td>
<td>10.01%</td>
<td>50.19%</td>
<td>0.29%</td>
<td>0.34%</td>
</tr>
</tbody>
</table>
UVRI Core Laboratories gear for THRiVE extension period deliverables

By Jonathan Kayondo, UVRI Core Laboratory Coordinator

The last quarter of 2014 (October-December), a near mid-term of sorts in the THRiVE extension phase, was busy and equally critical at the UVRI Core labs as well. Preparations and plans to jump-start our year 6 project deliverables, namely: the establishment of additional laboratory assays/protocols and Bioinformatics workshop training, were well underway. Looking back, several developments of significant impact on the realization of those extension phase deliverables seem to stand out.

The UVRI Genome Center:

This is a state-of-the-art facility built by World Bank/IMF funding by extending and leveraging on the THRiVE capacity and Infrastructure investment at UVRI. It comprises of an extended wing to the Core lab, equipped by DETRA funding, with more specialized molecular biology and bioinformatics platforms. It houses an Illumina MiSeq (Fig 1) for next generation sequencing (NGS) capable of producing 30 million reads per run, various equipment for sequencing library preparation, BioAnalyzer and Real-time PCR machines for library validation, and a bioinformatics computer room with genome assembly and analysis super computers (Fig 2) connected to the expanded LAN earlier established with THRiVE co-funding as part of IT Infrastructure strengthening at UVRI.

Senior scientist at UVRI, is additionally benefiting from Los Alamos National laboratory’s technical expertise. This resource is open to THRiVE fellows and other UVRI collaborating partners and the knowledge will be shared during the planned UVRI THRiVE Bioinformatics workshop. Protocols and pipelines for several NGS applications are already being run. It greatly enhances UVRI’s capacity in molecular biology and bioinformatics research. It also facilitates information access, data management and storage. It also greatly contributes to genomic and bioinformatics growth across the region.

Genome research, with contribution from the THRiVE partially supported by Jonathan Kayondo, Senior Scientist at UVRI/Core lab coordinator, after the 63rd American Society of Tropical Medicine and Hygiene (ASTMH) Meeting in New Orleans, November 2014, traveled to the University of Notre Dame, South Bend, IN, USA for further networking and training in specialized mosquito vector genomics, bioinformatics and microbiological protocols. The University of Notre Dame is a leading research university in the US with world-leading scientists in many fields including Vector biology, computational biology and hosts a world-renowned Global Health research program. While at Snowy Notre Dame, the power of Restriction-site associated DNA (RAD) sequencing as an alternative to full-length whole genome sequencing (WGS), currently applied only to select well-funded model organisms, was demonstrated.

The associated bioinformatics analysis to establish how genetic diversity is partitioned into individuals, populations and species was explained and plans for joint investigations were considered. Discussions were held on potential areas of future collaboration including UVRI staff training at Notre Dame. As a result a staff, Mr. Martin Lukindu, a former THRiVE Msc. fellowship recipient, has subsequently applied for Ph.D. studies at the Notre Dame graduate school and is being considered for the 2015 fall intake. Protocols and some start up reagents, kits and supplies for specialized molecular protocols were donated. Some bioinformatics, statistics, and programming language reference books were purchased during course of the visit and will be valuable resources during the upcoming workshop and daily analysis applications.

Strengthening research links with the University of Notre Dame

Dr. Kayondo, Senior Scientist at UVRI/Core lab coordinator, after the 63rd American Society of Tropical Medicine and Hygiene (ASTMH) Meeting in New Orleans, November 2014, traveled to the University of Notre Dame, South Bend, IN, USA for further networking and training in specialized mosquito vector genomics, bioinformatics and microbiological protocols. The University of Notre Dame is a leading research university in the US with world-leading scientists in many fields including Vector biology, computational biology and hosts a world-renowned Global Health research program. While at Snowy Notre Dame, the power of Restriction-site associated DNA (RAD) sequencing as an alternative to full-length whole genome sequencing (WGS), currently applied only to select well-funded model organisms, was demonstrated.

The associated bioinformatics analysis to establish how genetic diversity is partitioned into individuals, populations and species was explained and plans for joint investigations were considered. Discussions were held on potential areas of future collaboration including UVRI staff training at Notre Dame. As a result a staff, Mr. Martin Lukindu, a former THRiVE Msc. fellowship recipient, has subsequently applied for Ph.D. studies at the Notre Dame graduate school and is being considered for the 2015 fall intake. Protocols and some start up reagents, kits and supplies for specialized molecular protocols were donated. Some bioinformatics, statistics, and programming language reference books were purchased during course of the visit and will be valuable resources during the upcoming workshop and daily analysis applications.

Change of personnel at the Core labs: Joseph has made a mark!

The UVRI Core lab technician, Mr. Joseph Kirangwa (Fig 4), at the facility since 2012 has internally changed station to fully focus on sequencing responsibilities. He has been very instrumental in the
The University of Rwanda has benefited tremendously from membership in the THRiVE consortium, as highlighted below.

**A) TRAININGS**

- Supported 4 Masters students: 2 in MPH, 2 in Masters in Pharmacy with 6 months' internship at Muhimbili University of Health and Allied Sciences in Tanzania
- Partial funding for 2 PhD student research projects
- Full tuition fees for one administrative staff to complete an MBA
- One staff member attended a workshop on research administration in Dar-es Salaam organized by Association of Research Administrators in Africa (ARAA)
- Training in budget management and financial reporting in South Africa for 1 person
- Short training in Masters and PhD supervision for 1 staff at Makerere University
- Seed grants awarded for 4 people for dissertations who have all conducted the research projects that have all disseminated the results
- Mini-sabbatical support for a lecturer to Makerere University College of Health Sciences

**B) EQUIPMENT**

- 48 desktop computers for a fully equipped the computer lab providing internet access and facilities for data entry for the research activities by staff and students.
- 6 laptops for staff
- 1 printer and 1 photocopying machine that are still currently in use
- Fibreoptic installation: this has increased the internet bandwidth available for intra- and inter-institutional communication as well as research, teaching and learning facilitation.

**C) Other support**

- 2 lecturers hired with THRiVE support: A biostatistician and

---

**UVRI Core Laboratories gear for THRiVE extension**

**Core Labs acquire an e-BioKit**

The UVRI core lab has continued to upgrade bioinformatics capacity, in this regard with the acquisition of an e-BioKit (Fig 5), thanks to H3ABioNet funding. The e-BioKit comes in handy when accessing online bioinformatics tools from an environment of poor internet connectivity. Recent investments in fibre optic cable in East Africa have increased internet speeds, though subscription costs for bandwidths ideal for advanced bioinformatics applications remain high and internet outage is still a frequent occurrence in the region. The E-biokit allows several users direct access, via their intranet, to in-built databases and tools locally assembled on the Kit (a mini-server of sorts). The kits have tools for alignment, phylogenetic analysis and genome browsing, in addition to assemblies of microbial, plant and human genome databases. Two UVRI members of staff have previously trained in the use of the e-BioKit, and will be leading this bioinformatics module during the upcoming training workshop. We have received this kit with great excitement as it holds great potential as a tool for rapid dissemination of Bioinformatics knowledge.
Benefits and activities realized by University of Rwanda under THRiVE

Epidemiologist, providing substantial contribution in research and teaching
- Strengthened school infrastructure to run projects through provision of allowances for finance, IT, co-applicants, small grant and education coordination personnel

D) Networking among THRiVE Consortium members:
- Established collaboration with Gulu University to develop a joint research capacity building project in post conflict cities
- Had lecturers from Gulu and Makerere to teach and participate in external examination
- Submitted joint application with KCMC- Tanzania

E) Other activities done by UR under THRiVE:
- Writing workshop partially funded by THRiVE to enhance capacity and confidence for scientific publication among College staff: 18 potential manuscripts developed and 3 already published (Sebatukura Simeon, David Nzeyimana and Kagisha Vedaste)
- Participating in Evaluation and Learning visits among THRiVE institutions (The UR has been visited, but also UR visited Gulu University)
- Participating in THRiVE different meetings including annual general meetings to share and learn from others’ experiences.
- Receiving THRiVE Auditors to enhance our project funds management
- Writing different reports requested by THRiVE and Participating in writing articles for THRiVE newsletter has improved our capturing and reporting of events and outputs.

If you ever need to enhance your career satisfaction then you need to expand. Often times we don’t pay much attention to duties that are not in our career path. Take a minute to think, what if I fuse my expertise with another profession? This will not only broaden your thinking but also create opportunities to learn new stuff and always think outside the box. Of recent there has been several changes in the grants offices including integrating basic functions of research administration in various departments including the IT department. As an IT officer, providing support was always interpreted as; making sure the different offices have an internet connection, working computer and above all the network is up and running. Until I started working closely with the grants office, this perception started to change. As I was being introduced to research administration activities, I started thinking how do I contribute towards the overall objective of the grants office of increasing the number of grants in the college besides providing the obvious IT support to the office. Attending the society of Research administration international (SRA) in San Diego California USA was an eye opener. Getting exposed to what other institutions have done, learning new skills through attending various sessions opened up a new thinking. It takes team work to have innovations. Sharing ideas and brainstorming on issues is a clear path to creating creative solutions. Every evening while at the hotel after the conference, I and the grants team had a reflection on the sessions and how best we can use to experience to improve things back home. Imagine we have a mobile app that that takes your research interests, searches in specific grants databases and pops up a notification on your phone, imagine you have a mobile app that monitors deadlines for grants a researcher has interest in, such and more ideas (although may not be unique but new in our setting) started to come up during these discussions. “A mind, once stretched by a new idea, never returns to its original dimensions.” - Oliver Wendell Holmes Regina Namirembe a grants officer gives her account how she managed to enhance local trainings by the grants office

........................................

Capacity built in THRiVE contributes

As it happens with all funding mechanisms, the excitement that comes with commencement of grant funding can be quickly replaced with anxiety as the funding cycle nears the end. This was true as we implemented the activities of our Health Researchers into Vocational Excellence in East Africa (THRiVE) which is one of the 7 consortia funded by the Wellcome Trust UK under the African Institutions Initiative (AII). We were always cognizant of the fact that the 5 year funding would come to an end. As a result we were always on the lookout for other funding opportunities to enable sustainability of the consortium. We were delighted when the Wellcome Trust issued a DELTAS (Developing Excellence in Leadership, Training and Sciences Excellence) call. This scheme “aims to support the African-led development of internationally competitive researchers working across sub-Saharan Africa, headed by world-class leaders” (www.wellcome.ac.uk). This presented an opportunity for the network to leverage the capacity that had been built over the years to contribute to the development and writing of a competitive grant application and thus putting the THRiVE-1 investments to good use.

The call for preliminary application came out very shortly before THRiVE held its scheduled 5th annual general meeting (AGM) at the National Institute of Medical Research (NIMR), Mwanza Tanzania from 19-21 August 2014. The THRiVE network participants spent the last day of the meeting deliberating about the future THRiVE proposal. These discussions were reinforced with online contributions and exchanges that culminated into a preliminary application which was later shortlisted by the Trust and we were given a go ahead to submit a full
Prior to the SRA Annual Conference in San Diego, I heard of SRA and reading their articles on the internet. Although I have been a member of the Senior Research Administrators for the past 2 years, this is the first time I have attended their conference. By attending this meeting I have learned so much, through the networking during the few days, and from the content of the presentations. As a research administrator I now have a better understanding for this field, and I am very excited to learn more about SRA and to see how it will assist me to grow in the field of research administration.

The five day event was held on October 18-22, 2014, at the Hotel Delcoronado in San Diego, California. The conference brought together research administrators from across the globe to learn, share and transform ideas into solutions with more than 135 innovative learning sessions. The Annual Meeting features a full slate of industry, government, Non-Governmental Organizations, Universities, consultancies and expert speakers, as well as the prestigious Senior Executive Institute, which focused specifically on the needs of high level decision-makers. I have attended the Grantsmanship session and this session open up my mind more than I thought, giving me innovative, new ideas for grants, that I can share with my colleagues. These ideas are not limited to health related ideas but focus on anything innovative.

The SRA Annual conference is part of having conversation with your peers, recognized experts, and leaders for five days of valuable, relevant, professional development, education and networking.
Reflections On The Way Forward for THRiVE Institutions

Emilio Ovuga
Gulu University

At a recent scientific meeting, a former classmate who is an influential academic and researcher informed the audience, as he reminded me, that he and I each conducted an undergraduate research during our first year at medical school. Unfortunately neither of us published our research findings. I for one did not even recall that I conducted research to “determine the concentration of sodium in urine” during my first year of medical school.

What I do remember though is that I applied for a competitive undergraduate British award for undergraduate medical students in my first year at medical school. Unfortunately I had no skill in what I was venturing into. There was of course no system in place to support undergraduate students at the time in 1971.

It is known that Sub-Saharan Africa (SSA) carries the greatest disease burden in the world. The continent also has the least number of health care providers and researchers relative to its population and health care needs. Improving the health situation in SSA through the creation of a critical mass of health researchers is indeed noble and urgent. The assumption that the health situation in SSA could be improved through the training of upcoming health scientists is based on the belief that a new generation of health scientists will hold steadfast to their newly acquired skills and knowledge in research in an environment marred with harsh and unfriendly economic landscape. A corollary to this belief and assumption is that the future generations of health sciences students will consider research as their career as my colleague and I did. In the case of our cohort that I have referred to, only 3.3% of us have taken on research as a professional career. This development to a large extent is based on our personal efforts.

Out of this lot, those who will eventually become professional researchers will do so because research will probably appeal to them.

Any cohort of students has an open career landscape to choose from: namely; clinical specialties, biomedical sciences, public health and or its sub-specialities, health professions education, business in health professions, forensic and legal medicine, health economics, research, etc. In order to encourage students that wish to consider research as their future career, opportunities for the students concerned to become researchers should be provided to them early. The environment that makes this possible should be created, and research should be made appealing, friendly and easy for students at all levels. In my days at medical school, adventure into research was stressful and highly discouraging; only those who had stamina persisted to become successful researchers. Research should be demystified and the values of research, dissemination of results and publications should be made apparent to students. In this respect, research could have personal benefits as well as benefits for institutions and health systems. Individuals that wish to contribute to social welfare through research would find their involvement in research particularly appealing and
Although researchers at the National Institute for Medical Research (NIMR), Mwanza have been collaborating with researchers from other institutions, the inception and implementation of the THRiVE project has increased the intensity, quality and focus of networking at the institution. The implementation of the THRiVE programme activities has motivated staff of various disciplines and with different roles (e.g. research and support) to contact, meet and work together.

NIMR Mwanza researchers have been awarded 7 pump priming grants which require that applications involve several THRiVE institutions. In preparation of the pump priming grant applications, NIMR researchers worked hand in hand with colleagues from other institutions to develop research ideas into high quality and winning grants. The research projects cover a wide range of areas from infectious diseases (such as HIV, malaria and schistosomiasis) to non-communicable diseases (such as hypertension). Two of the projects were implemented in collaboration with the University of Cambridge - a new phenomenon - as no NIMR researchers had directly collaborated with researchers from the University to apply for research funding before. One of the pump priming projects implemented in collaboration with the University of Cambridge (on the epidemiology of schistosomiasis and soil transmitted helminth infections in Mara Region) has resulted to Dr. Safari Kinunghi of NIMR and a colleague at Cambridge (Dr. Shona Wilson) and other institutions (Kenya Methodist University and Nelson Mandela University) to win two additional grants to conduct studies on Schistosomiasis in Mwanza region (GBP 9,236 and GBP 173,450 respectively). The first additional grant is funded through a University of Cambridge funding scheme and the second through the UK Royal Society. Contacts facilitated through the THRiVE network has enabled researchers at NIMR and colleagues at Makerere University, the Uganda Virus Research Institute, the London School of Hygiene and Tropical Medicine, the Kenya Medical Research Institute Wellcome programme at Kilifi and the University of Nairobi to develop regional short courses on qualitative research and clinical trials. Furthermore, NIMR researchers are in discussions with colleagues at the LSHTM and Kilimanjaro Christian College in Moshi to develop the Diploma course in Tropical Medicine into a Masters programme whereby the annual research methods course offered by NIMR will form a module of that programme. The networking has also involved joint supervision of PhD students (such as Humphrey Mazigo) and NIMR researchers being in advisory committee of students supervised by THRiVE colleagues at universities.

Research management and administration has also benefited from the networking through THRiVE. Administrators, finance officers and ICT staff have interacted with their colleagues through the web, face to face meetings during THRiVE annual meetings, and other specific meetings and workshops. The level of interactions between research support staff at NIMR and other THRiVE institutions has been at a scale never seen before the inception of THRiVE. Through THRiVE there has been an improvement in networking between NIMR researchers and THRiVE institutions in the East African region and Europe. This is not only in quantity (number of networks established or improved) but more importantly and uniquely the quality of the networking -mutual roles in application and implementation of research grants.

Reflections On The Way Forward

meaningful. Institutions that reward individual and institutional research contributions and outputs would be expected to attract young upcoming, and senior researchers. It would be beneficial if national governments introduce practical reward policies to encourage health-training institutions to value research contributions of their faculty members and students at all levels. For instance when I completed my doctoral studies, the Department where I contacted my research study received two thousand Swedish kroners as a reward for supporting my work. Mentorship programs in research should be established in health professions institutions with the primary aim of early identification of students with research interest and capability.

In order to improve the profile of health research in East Africa, additional policy issues should be considered. Research should be made part of institutional academic programs. Policies to share published work or approved research reports in the public domain should be established by national governments. Policies that recognize researchers, their mentors and institutions should be put in place. The value of research outcomes in terms of their impact on policy, and their utilization in the public domain should be apparent, as people feel valued if their contribution to social welfare is recognized through their research outputs being utilized or cited. To increase the chances that research outputs will be used in the public domain, researchers should have the opportunities to be trained in all aspects of doing research including writing policy briefs and talking to the press. Successful research enterprise is equivalent to successful marketing enterprise in business. THRiVE should therefore consider helping its research fellows at all levels acquire “business skills” in research.
LSHTM through THRiVE is Creating Opportunities and Building Research Capacity within KCMUCo

Innocent Mboya (KCMUCo MSc Student with a LSHTM MSc scholarship) and Jenny Renju (LSHTM)

LSHTM worked with KCMUCo to develop the content of the two-year full time Masters programme. The modules all adopt participatory learning techniques and encourage critical thinking and students to challenge each other. The materials have been carefully developed based on the LSHTM distance learning materials. In 2010 the first four students enrolled onto the course. Since this time applications and enrollment on the Masters programme continue to grow with more than 50 students applying and 28 having been enrolled. 15 have already graduated; four of these are now enrolled for PhD programs. The remaining 11 are all working within research in Tanzania; six work for either NIMR/NACP or MoH; three are teaching and conducting research within KCMC and two have full time positions within NGOs or research groups. Twelve are currently enrolled on the course. Innocent Mboya is one of these 12 and is a current 2nd year student on the MSc in Epidemiology and Biostatistics masters. Prior to 2013 he was working as a tutorial Assistant in the community health department at KCMC. In 2013 he was successful in his application for a THRiVE MSc fees-only scholarship from LSHTM to study MSc Epidemiology and Applied Biostatistics at the KCMU College.

During the course of my studies I have learned so many new things and was supported to develop my own research project titled; “The influence of alcohol on multiple sexual partners: is this a real effect, or due to the confounding effect of other factors? The evidence from Mwanza, Tanzania”

Multiple sexual partnerships (MSP) are a problem associated with several adverse sexual health outcomes like increased risk of STI including HIV and reproductive health problems. Evidence suggests that substance abuse contributes to risky sexual behaviour, including MSP. However limited population based evidence of the association between alcohol consumption and MSP would impair public health efforts in promoting good sexual health of both adolescents and adult population. My study therefore will answer the question “Is alcohol consumption an independent risk factor for MSP or its association is due to confounding effects of other factors?” A causal analysis will be employed in answering this question.

As part of my MSc. training course, I was attached at TAZAMA project NIMR Mwanza for field work where data for my research project will come from. I learned how these data were collected (data collection procedures) and methods used. One of the interesting activities was to participate in community engagement activity from the design, data collection and analysis stages. This was mostly to assess community perception of the strengths and limitations/ challenges of the project in order to inform the next round of the sero surveys.

This field attachment gave me first hand experiences in data management and analysis and the challenges involved. I learned that, the quality of data is influenced by each element of research project (i.e from proposal development, organization of data collection, data management, analysis, ethical issues, dissemination and many others).

Generally, the scholarship from LSHTM has enabled me to learn and acquire a lot more skills that cannot all be described in this short snippet. I look forward to finishing my studies and continuing my research career here at KCMC and connected with the wider THRIVE community. To LSHTM, THRIVE and all people involved in it, “Thank you very much.

Innocent kindly took some time off to tell us about his experience.

“I am one of many researchers from a developing country who wishes to further my career in the now growing field of medical research, epidemiology and biostatistics. However in the past I was always constrained by a lack of funds to finance my specialist education. THRIVE is a unique grant that focuses on identifying and
Inventions and Innovations and intellectual property management (IPPM) at MakCHS

By Dr. Daniel Semakula. MakCHS Innovations and Knowledge Translation officer.

“What should I do if in the course of my research I come up with a new invention or an innovation that I could benefit from beyond the scientific publication?” “What kind of innovation requires intellectual property protection?” “How can I position myself to earn from my innovation (commercialise my innovation)?” “Where can I get help in answering these questions?” Such and many more are some of the questions that go through a number of researchers’ minds in the course of conducting their research. Indeed a good number of us do not yet understand the value of our research in its entirety or are simply unaware of what more we could do with our innovations. Part of our mandate at the IKT Office is to provide information to researchers regarding intellectual property management.

As part of the activities to raise awareness about intellectual property we hosted officials from the World Intellectual Property Organization (WIPO), the United Nations agency that sets the standards for regulating intellectual property rights. This meeting held in October 2014 was organized by the IKT Office with support from the office of the Principal, in collaboration with the Uganda Registration Services Bureau (URSB) - the Uganda national body in charge of intellectual property rights management. The meeting served two purposes: (1). A lecture on the use of technology information to support scientific innovations, delivered by Dr. Ituku Elangi Botoy-WIPO’s Coordinator for technology and innovation support, and (2). A pre-inspection visit to explore the possibility of WIPO establishing a Technology and Innovations Support Centre (TISC) at Makerere University College of Health Sciences.

After this meeting Dr. Ituku and the delegation from URSB held a meeting with the Acting Deputy Principal at the time (Dr. Isaac Okullo) who expressed his gratitude for the visit and reiterated MakCHS’ commitment to advancing innovations for development and social transformation. Dr. Ituku was very grateful for the opportunity to visit Makerere University, an Institution (in his own words) whose products he had interacted with and read about for a very long time but which he had never had an opportunity to see and interact with on a personal level. He was impressed by what he saw and encouraged us to continue with this spirit.

Following up on the WIPO-URSB visit the MakCHS IKT office has started a process of establishing a TISC at MakCHS which is now in advanced stages. The WIPO Technology and Innovations Support Center (TISC) generally provides innovators in developing countries with access to locally based, high quality technology information and related services, and will help us to exploit our innovative potential and to create, protect and manage our intellectual property rights. Some of the services to be offered by the TISC include:

- Access to online patent and non-patent (scientific and technical) resources and IP-related publications;
- Assistance in searching and retrieving technology information;
- Training in database search;
- On-demand searches (novelty, state-of-the-art and infringement);
- Monitoring technology and competitors;
- Basic information on industrial property laws, management and strategy, and technology commercialization and marketing.

TISC will be established within the IKT office at MakCHS and will complement and strengthen existing capabilities and services the office renders to researchers on Intellectual property related issues. The IKT office will continue to organise more of such workshops to empower researchers in using available technology transfer information to support innovations in healthcare research and practice. The next workshop will be held in March 2015.
The MakCHS Innovations and Knowledge Translation (IKT) Office; exploring horizons in increasing research uptake.

By Daniel Semakula, IKT Officer

The MakCHS IKT office is mandated to find innovative ways of increasing the uptake of research findings and other innovations into policy and practice. To this end we organize several activities that are aimed at increasing the use of research. With funding from THRiVE we have been able to explore different horizons in increasing research uptake and use in Uganda, especially the research coming out of MakCHS. From supporting researchers to communicate their findings better, to engaging policy makers to appreciate the value of research and use research to guide decisions. In the last quarter we held several workshops aimed at training researchers in engaging with policy makers.

Between October and December 2014 we had trainings of 14 THRiVE and MESAU funded PhD candidates as well as up to 14 researchers, masters and PhD candidates from the Child health and Development Centre-MakCHS. The MakCHS IKT office, with support from the Africa Centre for Systematic Reviews and Knowledge Translation provided technical support in writing policy briefs and engaging policy makers to support the above groups of researchers. From these trainings we were able to obtain 8 completed policy briefs, all from the CHDC team. These workshops have produced 8 completed policy briefs and we are working on completing another 8 still in the pipeline in the coming months. Some teams that we have trained have gone ahead to organize stakeholder dialogues and dissemination workshops using the policy briefs as tools for the engagement.

The IKT office continues to support other researchers in different departments across MakCHS to develop products and strategies for engaging the non-academic public with their work. We are very grateful for the unrelenting support THRiVE has given us to be able to accomplish our goals.

During a training workshop with Child Health and Development Centre

Dr. Daniel Semakula training participants

Participants in a practical session
With the 100K Genomes Project and similar initiatives producing large quantities of data, the genomics world has exploded in recent years. Importantly for researchers worldwide, much of the data is freely, publicly available. The equipment required is low cost – just a computer and an Internet connection – making this a particularly promising area for African researchers to make a global contribution.

To help meet this challenge, two THRiVE partner institutions, Cambridge University and icipe, received £5000 in seed funding from the Cambridge-Africa programme (www.cambridge-africa.cam.ac.uk) to develop an advanced bioinformatics training initiative focused on the East African region.

The initiative was run in part as a THRiVE collaboration between the two institutions and as an initiative of the charity TREND in Africa (http://trendinafrica.org), which supports university level teaching and research in natural sciences through lab equipment donations and hands-on training programmes. The aim of the course was to teach programming and analysis skills for working with DNA sequencing data. Cambridge researcher Dr. Jelena Aleksic, who co-hosted the course, said “the long term ambition is to pass on the skills and help train a new generation of computational biologists in Africa”.

The course covered various topics ranging from basic programming skills such as Unix and R, the evolution of butterfly species, detecting disease causing genetic mutations in human DNA and using bioinformatics tools to repurpose drugs for novel therapeutic applications.

The trainers had very good interactions with the participants, as evidenced not just from the progress made, but also the free exchange of knowledge and skills and the networking availed. “This was a great opportunity to expand the skill set of African researchers, especially as we work to build local expertise in bioinformatics and genomics and to build collaborations with colleagues from UK,” said Dr. Dan Masiga, head of the Molecular Biology and Bioinformatics Unit at icipe.
Cambridge and icipe researchers launch cutting edge computational biology course in Kenya

This event is one part of a growing bioinformatics scene in Africa, boosted by the five-year H3Africa Initiative (h3africa.org) and H3AbioNet (h3abionet.org, the associated continental bioinformatics network), which are building a strong foundation for genomic research based on collaboration among African scientists. The collaboration between young trainers from Cambridge and icipe sets a super stage for holding similar and more advanced courses in future. In her closing remarks, the icipe Director-General, Dr. Segenet Kelemu, suggested that this should be an annual event. Together with icipe's head of Capacity Building, Dr. Rob Skilton, we want to take up the challenge.

The strategic importance of computational biology training is widely acknowledged in both academia and industry, and the course has received broad support. More than 170 participants applied, with only 24 slots available. The participants came from seven countries: Congo Brazzaville, Ethiopia, Uganda, Tanzania, Rwanda, Nigeria and Kenya.

Trainer institutions: University of Cambridge, Imperial College, University College London and icipe.

The organisers are grateful to the following organisations who sponsored the course:

- icipe: www.icipe.org
- Cambridge-Africa programme: www.cambridge-africa.cam.ac.uk
- THRIVE: www.thrive.or.ug
- TReND in Africa: http://trendinafrica.org
- Inqaba Biotec: www.inqababiotec.co.za
- Kentros Biosciences: www.kentrosunlimited.com
- Stevenage Bioscience Catalyst: www.stevenagecatalyst.com
- Helix3: www.helix3-inc.com/
- The Genome Analysis Centre (TGAC): www.tgac.ac.uk

Bioinformatics approaches for NGS analysis
Held at ICIPE Campus Nairobi on 24th-28th Nov. 2014
Publications arising out of THRiVE funded Work in 2014

The following publications have been so far realized in 2014:


18. Liya M. Assefa, Thomas Crenlen, **Stella Kephà**, Jimmy
Publications arising out of THRiVE funded Work in 2014


21. SW Wachira, S Omar, J W Jacob, M Wahome, HT Alborn, DR Spring, DK Masiga, and B Torto. Toxicity of six plant extracts and two pyridine alkaloids from Ricinus communis against the malaria vector Anopheles gambiae. I. Parasites & Vectors 2014, 7:312 http://www.parasitesandvectors.com/content/7/1/312


