LIVERPOOL SCHOOL OF TROPICAL MEDICINE

Since 1898

Lead

ISSUE NUMBER ONE — 2019

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DIRECTOR'S WELCOME

It is my absolute pleasure to have the opportunity to preside over LSTM's first graduation ceremonies. We are celebrating this historic milestone in a particularly auspicious year, as it is 120 years since the founding donation was made to establish us as the world's first dedicated School of Tropical Medicine.

LSTM has come a long way since then, but the spirit of developing innovative science which saves lives, and training future generations of global health leaders, has always prevailed.

There are brilliant minds working across the world to develop new solutions to health inequality; however, globally, we are not producing the future leaders quickly enough. Failure to address this deficiency, coupled with the enormity of the health challenges, will perpetuate the massive health inequalities which affect billions of people worldwide.

LSTM remains committed to train the future global health workforce, and to continue to innovate in teaching to ensure that our students get real-life experience from the field into the classroom.

The 2018 graduating class includes a record number of scholarship recipients following the launch of our Merit Scholarships programme in 2017. This year, we were delighted to open the new Weston Active Learning Laboratory, designed to develop problem solving and decision-making through real-life scenarios and interaction with experts from across the world. We also announced our very first blended Masters programme, the flagship MSc in Global Health, which will be partially delivered in-country to provide students with a curriculum tailored to the regional context, supported by local professionals.

It is a particularly proud moment for all of us at LSTM to see the very first cohort of graduands and future leaders receive our own degrees this year. We have a vibrant and diverse alumni community, which is making a real difference to the health and lives of the world's poorest people, and it is inspiring to think what our class of 2018 will go on to achieve. We sincerely hope you will continue to stay in touch as a valued member of the LSTM family.

Congratulations to all of our graduates; as our first cohort you are part of LSTM's rich history, and I am sure will go on to make your mark on society.

find our more about our work and impact **www.lstmed.ac.uk**

Professor Janet Hemingway
Director of Liverpool School of Tropical Medicine

1898 — 2018

LSTM's inaugural graduation ceremonies mark a significant achievement, and the story of this journey conveys a fascinating, proud and rich history of the world's first institution of its kind.

1898 A donation from Sir Alfred Lewis Jones, Head of the Elder Dempster Shipping Line, supports the creation of the world's first research and education institution dedicated to tropical medicine – the Liverpool School of Tropical Medicine, initially based within the facilities of the Royal Southern Hospital on Liverpool's waterfront and the University of Liverpool.

This was in response to the number of sailors returning to the Port of Liverpool with diseases such as malaria, dystentery, beri-beri and tropical anaemia. The shipowners recognised the serious threat these diseases posed and took action through the founding of LSTM.

1899 LSTM appoints Ronald Ross (pictured above) as its first lecturer, and the first scientific expedition was undertaken to Sierra Leone, where scientists studied malaria.

1902 Ronald Ross becomes the first British recipient of the Nobel Prize for his work in describing the transmission of malaria by mosquitoes.

1909 Alfred Lewis Jones dies and leaves a large bequest to LSTM. Thanks to his and other donations, LSTM was able to set up its own laboratory and teaching premises in Pembroke Place, separate from the University of Liverpool.

1914 The building of these laboratory facilities was completed, but due to the advent of the war, occupation was deferred, instead used as a Tropical Diseases Hospital and offering courses to officers of the Royal Army Medical Corps.

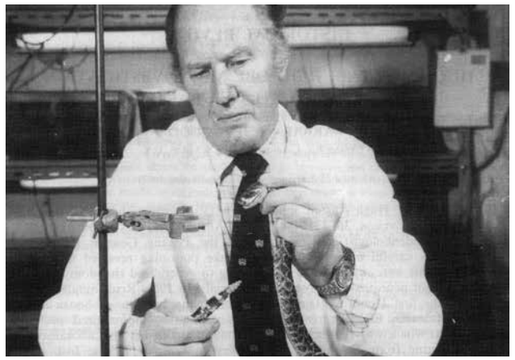
1920 Teaching resumed, and LSTM finally moves into its own building.

1921 LSTM opens an overseas research laboratory in Freetown, Sierra Leone. This laboratory functioned continuously until the early stages of World War II and made many important discoveries in West Africa, including demonstrating that a species of black fly was responsible for the transmission of filarial worms to humans, causing river blindness.

Also in 1921, Dr Alwen M. Evans is appointed as LSTM's first female lecturer.

1945 Post World War II, many former Far East Prisoners of War (FEPOWs) are sent to LSTM on their repatriation to the UK. In addition to suffering from tropical diseases, LSTM's clinicians were the first to describe 'FEPOW Syndrome' (post-traumatic stress disorder), the first time the psychological effects of conflict had been studied. This work has influenced how these conditions are treated today.

1946 The appointment of LSTM's longest serving Dean, Brian Maegraith, marking a broadening of the LSTM's size and curriculum. Maegraith famously declared 'Our impact on the tropics should be in the tropics!' which resulted LSTM forging links with other research institutions across the globe, including the creation of the Faculty of Tropical Medicine at Bangkok.



1973 The Alastair Reed Venom Unit is established, developing new anti-venoms for the treatment of snakebite.

1991 Building upon long-standing relationships with Malawi's Ministries of Health and Education, LSTM is invited to develop the College of Medicine in Blantyre (CoM). Despite opposition from critics claiming a medical school was a luxury Malawi couldn't afford, LSTM helps to sway the argument demonstrating that CoM was essential to the future health and economic development of the country. Upon the establishment of CoM, LSTM placed senior personnel in leadership roles to develop the curriculum and initially run the operation, with the aim of developing Malawian leadership for the future. Since then, CoM has grown from an annual intake of 10-15 students with a handful of faculty, to 80+ students annually and 110 staff.

find our more about our work **www.lstmed.ac.uk**

1995 The Malawi-Liverpool-Wellcome Centre in Blantyre is established; a partnership between LSTM, the University of Liverpool and the Wellcome Trust (the primary funder). MLW is currently home to more than 680 staff, and conducts internationally-excellent science which aims to improve the health of people in Sub-Saharan Africa and train the next generation of health leaders in Malawi.

2000 Janet Hemingway takes over as Director and over an 18 year tenure, leads LSTM through a period of significant investment and expansion, including increasing the research portfolio from £23m to more than £500m.

2004 LSTM celebrates 100 years of the Diploma in Tropical Medicine and Hygiene (DTM&H) programme.

2013 LSTM receives higher education status.

2016 Bill Gates visits LSTM with then UK Chancellor George Osborne to announce the £1bn Ross Fund to combat diseases in developing countries.

2017 Privy Council awards LSTM degree awarding powers.

2018 LSTM holds its first graduation ceremonies at the Liver Building and awards its first honorary degrees to Dr Letitia Obeng and Professor Victor Mwapasa.

2019 Professor David Lalloo takes over as Director of LSTM, leading the organisation towards it 125th anniversary in 2023.

An intense bonding

The award of an honorary degree by her alma mater, LSTM, is just one of many national and international honours bestowed on Dr Letitia Obeng. They include the Order of the Star of Ghana and her unanimous appointment as the first female President of the Ghana Academy of Arts and Sciences. The honours are representative of a life of excellence, determination and dedication, often against the odds.

Letitia with her three children on one of their weekend trips sampling the rivers and streams of North Wales during her time at LSTM.

As you listen to Letitia Obeng recount fascinating stories from her long career, the overriding sense is of many challenges having been met. This is one determined lady. You are also struck by how humble and down to earth she is, but maybe that is no surprise given her fascination with freshwater ecosystems and the countless hours spent in, on or near them.

The inspiration for Dr Obeng's career was cherished childhood visits to her father's farm in rural Ghana. "I constantly marvelled at the many different kinds of plants, each distinctly different! I remember watching grasshoppers and butterflies… quite amazing!"

That early love evolved into a Zoology & Botany degree from Birmingham University in 1952, Dr Obeng becoming the first Ghanaian woman to graduate with a bachelor's degree in science. On her return home, she secured a job teaching zoology at the College of Science & Technology in Kumasi, helping to produce of many of Ghana's early pharmacists, agriculturalists and doctors. However, both of these achievements came with substantial personal challenges, not least the death of her husband in 1959, leaving Dr Obeng to raise three small children.

The watershed in her professional life came in 1962 when Dr Obeng was invited to undertake a PhD at LSTM:

"I, with my three kids and the baby's nanny, sailed from Ghana to Liverpool. The School had been expecting us and the excellent welcome we had lay a fine foundation for our three year stay for a most exciting study!"

Dr Obeng's focus was the black fly, coincidentally the same "…infuriating fly which made a whining sound and was always trying to bite me..." at her father's farm as a child. The fly, which breeds in fast-flowing fresh water, carries the onchocerciasis parasite, the cause of river blindness in large parts of West Africa.

"For three years, with my children and their nanny in tow, I roamed the hills and plains of North Wales, and knew the rivers, streams, brooks, permanent and temporary water within my area of study… We visited every Saturday, come rain or shine… I have no doubt that there were residents who wondered what on earth I was up to!"

"My work at LSTM equipped me with a valuable understanding of important aspects of freshwater ecosystems… That charged me to work towards promoting a better understanding and protection of freshwater systems... I think I did my best to get attention for our water system."

Those three years of hardship and intensive study at LSTM introduced Dr Obeng to the "fascinating and totally amazing world of freshwater," and was the period when her lifelong passion for freshwater ecology emerged – what she has described as "an intense bonding". By the time Dr Obeng and her family returned home, Ghana's hydroelectric project had been launched, the River Volta had been dammed and a lake that would eventually cover 4% of the country was forming. Given her expertise in freshwater studies, Dr Obeng was "sharply conscious of the potential ecological disturbances and environmental problems that could come from this huge project". Driven by desperation, and after much personal petitioning, approval was finally given for the creation of an Institute of Aquatic Biology, with Letitia Obeng at the helm. It would monitor, study and manage the country's inland water systems, including Lake Volta, for the good of people and wildlife alike.

Dr Obeng stayed at the institute for ten years, describing its growth as "an exciting and worthy challenge… thrilling and fulfilling". She directed multidisciplinary research on Lake Volta, producing many studies and publications on invertebrates and aquatic weeds. However, it is obvious that her main source of pride from that period was the lake itself:

"from the extended monitoring, research and various studies, the Institute was able to keep Volta Lake productive and free from aquatic weed infestation for the first decade of its life..."

Dr Obeng's reputation grew in this time, leading to an invitation to take part in the 1972 UN Human Environment Conference in Stockholm and then 11 years with the United Nations Environment Programme (UNEP). In her role as the Director of the UNEP Regional Office for Africa, she worked with the 53 Environment Officers of the Africa Region. She describes this time, promoting sound environmental management, as "a daunting task". These states, "each with its own cultural, religious, political and other characteristics", faced many different problems, but by encouraging cooperation Dr Obeng produced a Program of Action for the African Environment.

Dr Obeng's passion for fresh water ecology is undiminished and she remains an outspoken campaigner, even personally berating the President of Ghana for the current state of Lake Volta. "We need more research, freshwater research!" she stresses.

Her accolades are numerous. Dr Obeng was the first female President of the Ghana Academy of Arts and Sciences; was awarded Ghana's highest honour, the Star of Ghana; has a laboratory named in her honour and has even featured on a postage stamp. Now, she is being honoured with what we hope is one of her most cherished awards – one of the first honorary degrees awarded by LSTM. The School is certainly proud to be able to name such a dedicated, influential and committed advocate among its graduates, and to have made a small contribution to Dr Obeng's success and the freshwater ecosystems of Africa. ›

Professor Victor Mwapasa is sure about the secret to his success.
"What drives you, even when you've got serious impediments, is the passion to face and address a problem."Where does a person who has led so many important studies and interventions on HIV and malaria in Malawi find his inspiration, his passion?

Professor Mwapasa's early life in rural Malawi was a major influence. He recalls his mother travelling long distances to reach a health facility and also his own recurrent illness with malaria. His education then reinforced his determination to make a difference, and led to him training as a medical doctor. However, what he saw while working in a hospital changed the trajectory of his career:

"If you come to our hospitals you will see people with basic diseases... I became a doctor to treat those conditions, but later on I realised that most of the problems are easily preventable - you can prevent them by doing some interventions in the community… that's why I left the hospital to work as a public health expert."

Another major influence on Professor Mwapasa's life, and the beginning of his link with Liverpool, came with the arrival in Malawi of British doctor and research scientist, Professor Malcolm Molyneux, who had dedicated his life to beating malaria and established a research and clinical facility in Blantyre. It was a move which surprised the young Dr Mwapasa who was working in a nearby hospital:

"I thought, why is he working in Malawi, a poor country? He can easily go back to his country to lead a good life… if a British national, who is well-qualified and can work anywhere in England, can dedicate his life to treat a condition that is not there in his country, why can't I?"

And so began a commitment to the treatment of malaria and a lifelong friendship with the man who mentored him through his PhD. Professor Mwapasa says of Molyneux, "My drive to work even harder was inspired by him".

Since then, Professor Mwapasa has focused on both HIV and malaria. Malawi has a population of about 17 million with 5 million new cases of malaria each year and 1 million HIV cases, and he conducts research on how to encourage and enable access to preventative measures and effective treatments. His biggest victory, and source of greatest pride, is his work to prevent mother-child transmission of HIV. Before interventions began, 3 out of 10 HIV+ mothers in rural areas were transmitting the virus to their children. However, after several studies helped improve access to preventative measures, the picture has changed dramatically:

"We have gone from about 30% transmission rate in 2000 to about 6% at the moment, and we are within the range of eliminating the problem of HIV mother-to-child transmission. Malawi has led the rest of the world in developing different strategies to prevent mother to child transmission of HIV."

Through his research and public health experience, the professor has led the formulation of Malawi's revised 2018-20 HIV Prevention Strategy. He describes three of several main strategies for preventing HIV:

"The young people are the ones who are predominantly getting HIV, and most of these are women, girls between the ages of 15 and 24. They are engaging in high risk sexual behaviour but they are not using condoms. So, part of the strategy makes condoms more accessible to young people… Another of the strategies is to increase the number of young men who are circumcised, because if they are circumcised they will significantly reduce their chances catching HIV and if they do not catch HIV they will not transfer HIV… Also, 6 out of 10 female sex workers are HIV+, so one of the strategies is to increase their HIV testing and treatment."

Professor Mwapasa has strong links with Liverpool. They began with Professor Molyneux and continued through The Malawi-Liverpool-Wellcome Trust Clinical Research Programme in which LSTM is a partner. The professor worked at the precursor facility (Malaria Project) during his PhD and was later appointed Associate Director of the project, helping transform it into "a centre of excellence in Malawi and the African region".

Since then, Professor Mwapasa has collaborated with LSTM scientists in studies on the treatment of patients with both HIV and malaria, and research strategies to identify better interventions to prevent and treat malaria in pregnant women. He is very appreciative of the relationship that has developed:

"For me, it is the dedication that Liverpool has had for Malawi. It is just amazing… before Liverpool was only really focused on conducting research but now it's transitioned to building capacity, making sure Malawi has the infrastructure and the local expertise to do high quality research that generates results to solve Malawian problems."

Just as he is keen is emphasise that he is one of many people contributing to the HIV and malaria fields, Professor Mwapasa is also adamant that the award of an honorary degree by LSTM is an award for the people of Malawi, not for himself:

"It is an honour because it shows appreciation from LSTM for the contribution made by local people toward international research… this award shows that they want the credit to go to the locals who spend most of their time in these settings and make sure the research work is done at an international quality. So, for me it is a demonstration by LSTM that us local people are doing great work that brings great credit, not only to Malawi but also to LSTM."

Honorary degree

LEAD — Issue No.1 2018

"I REALISED THAT MOST OF THE PROBLEMS ARE EASILY PREVENTABLE - YOU CAN PREVENT THEM BY DOING SOME INTERVENTIONS IN THE COMMUNITY. THAT'S WHY I LEFT THE HOSPITAL TO WORK AS A PUBLIC HEALTH EXPERT."

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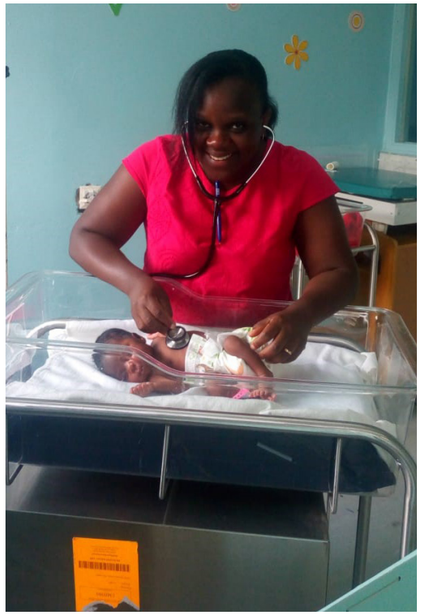
SCHOLARSHIP SPOTLIGHT

NELLY DINDI

MSc Tropical Paediatrics
2017/18



I have a real interest in working with children, especially newborns, and when I saw this course I saw the chance to develop more skills and knowledge in evidence-based paediatric practice.

Hi, Nelly. First, can you tell us a little about your life before you came to LSTM?
Yes, I'd been working as a Medical Officer in the new born unit in Pumwani Maternity Hospital which is located in Nairobi. It's the largest maternity hospital in the country with the largest new born unit. I had worked there for three years but I've had a passion for paediatrics for much longer.

It must have been a big step leaving your job and home. Why did you come to LSTM?
I have a real interest in working with children, especially newborns, and when I saw this course I saw the chance to develop more skills and knowledge in evidence-based paediatric practice. I'd been a clinician all the way through my career and wanted to spend some time in research, especially in the area of maternal and child health. I had a strong interest in research - at the Pumwani newborn unit I was conducting the monthly neonatal mortality audit and my undergraduate thesis had been published – so applied to study in Liverpool.

And yes, it was a big step. I had to leave my two sons and husband in Nairobi for the year. It wasn't easy but it was worth the sacrifice.

Tell us about your experience in Liverpool. What did you get from your course?
I loved the experience. I learnt so much. Before, when managing a patient, I was really clinical in my approach, but the focus on evidence-based medicine has encouraged me to think about what we can do better. What evidence can we gather to support a specific cause? I've also developed my research skills, from knowing nothing to having a dissertation that people are amazed at!

Also, my class was very diverse, with people of different cultures, skills and knowledge. I learnt so much from them and have come to know that the problems we have in health care in Kenya are not peculiar or unique – we share a lot with other developing countries and can learn from and work with them.

The course has really widened my perspective, and I feel that I'm ready to venture into maternal and child health research.

Have your experiences impacted on your community?
That has definitely happened, yes. As part of my scholarship year I learnt about quality improvements in global child health, and now understand that there's a lot we can do to make things run better with the few resources we already have. I've actually been appointed to the training and research committee at the hospital and pick up quality improvement projects, so I can improve service delivery while I'm passing on my knowledge and skills to others.

Also, colleagues have done some data collection and analysis but did not know how to write up their findings. I have been through that as part of my master's degree so have been able to support them. They were actually looking forward to my coming back so I could help them develop their own proposals and papers.

And personally, how has the experience affected you?
It has really changed me. It's made me a better clinician. Being at LSTM has really opened my eyes to how much I can contribute to child health care, especially in the area of research. My confidence is better and my networks are much wider.

Finally, how important was the scholarship to you?
Without it I wouldn't have done my masters at all. It was an amazing opportunity for me and I am really grateful. It would be great if more of such opportunities could be opened up for more people who have the passion and determination to improve clinical practise through research.

SCHOLARSHIP SPOTLIGHT

ADIL BHATTI

MSc Biology and Control of Parasites and Disease Vectors
2017/18

Can you tell us a bit about what led you to study vector biology?
Sure. I studied medical entomology for my Master's degree at home in Pakistan, and after graduation took a 5-month job in dengue fever control during the epidemic season. It was there I got to learn about public health and how communities are facing big problems with very limited resources. When you see people's emotions, people suffering, first-hand experience, it really affects you. I realised then that this is what I really want to do, something to help the community.

Why did you leave Pakistan and come to LSTM?
When I looked at published research I realised that I had a big knowledge gap, a hole in my understanding that I needed to fill, so a Master's seemed the right option. However, I live in a country where there are very few people who are working in medical entomology and vector biology. There wasn't much focus on education or research and limited resources. I found LSTM online and thought, "This is Harvard or Princeton for me! I should go there!" Then I got a scholarship and thought, "This is it - Liverpool is final!"

What did you get from your course?
I learnt so much. When I came here all I was thinking about was mosquitos, but LSTM does a lot of different vector biology research which is good in terms of capacity building. I looked at sandflies but my classmates did snakebites, tsetse, black flies – you can choose. The course has given me knowledge on all sorts of aspects of vector biology - entomology, parasitology, everything, and most things were really new to me. For example, I'd never done lab work before I came to LSTM and wasn't looking forward to it, but I really liked it.

Also, everybody in LSTM, from professors to students, collaborate to provide you with knowledge. The people are from all over the world and they have experiences from all over. Many are working in different sectors of global health and so we talk, sharing ideas and knowledge. You learn a lot.

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Is studying in the UK very different to studying in Pakistan?
Definitely. People always said to me, "Studying in Pakistan your whole life is something very different to studying in the UK." I used to think it was just their opinion about things but now I know it's not – it's true. It was a different experience living here.

Has it changed you?
It has definitely changed me - this one year has changed me a lot! I'm not the person I was when I arrived in Liverpool last September. I think it has made me more… I can't explain it! People say to me "You're not the person you were before" and I agree.

What is the next step for you?
I'm looking to do a PhD, possibly on sand flies, and then get into research. My Master's dissertation was on molecular markers of resistance in sandflies [the spreaders of the disease leishmania] – it's a big issue in India. Many people are doing research with mosquitos but sandflies are hardly looked at, especially in Pakistan. There's a lot of research that should be done. The other possibility is snakebites. India is progressing but Pakistan… I have no idea what they are doing. It needs more research!

How has your scholarship impacted on you?
It allowed me to come here and that's the most important thing. When I first looked at the costs of fees and housing I thought, "that's too much for me", but the scholarship helped me come here and I am very grateful. My recommendations for LSTM are high!

Discover more about the impact of LSTM scholarships
www.lstmed.ac.uk

Students amaze us!

TEACHING ON THE FRONTLINE OF THE TROPICAL DISEASE 'ARMS RACE'

"Shall I wipe a bit of poo on it? It's what it's usually covered in!" jokes the photographer's subject, referring to his currently spotless lab coat. It's an unusual start to an interview but then James LaCourse does not do what most people would call a normal job. Yes, he is a lecturer and Director of Studies for both of LSTM's master's courses in tropical disease biology, but he also spends a fair amount of time looking down a microscope at stool samples.

Dr James LaCourse

Senior Lecturer in Parasitology, Director of Studies for Masters in Tropical Disease Biology Programmes

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"LSTM is famous for really pushing the boundaries in research which is then transferred back into our teaching."

James came to LSTM in 2010 to take up the post of Lecturer in Parasitology. This was a period when LSTM was striving to achieve independent institution status and shifting from being almost entirely research focused to seeing teaching as a core objective. "There is a great deal of expertise here and it was, and still is, essential for us to make it transferable to students, both here and in the tropics."

Today, about 80% of James' time is spent teaching with the rest given to research ("I couldn't do just research – I'd become grey and boring.") Much of that research is through the students' research projects although he is also involved in work with colleagues from both LSTM and other institutions. James' focus is largely upon disease-causing parasitic worms which infect billions of people and animals worldwide. These often-neglected worm diseases can be devastatingly life-changing, and disproportionally affect people living in the world's poorest regions.

" There's no average day for me ", James explains. " I've gone from chairing a board of studies in snowy Liverpool, to next day finding myself in baking heat in rural Uganda looking down a microscope. One of the reasons I love this job is because there is so much diversity."

The students on the master's courses are similarly diverse, coming from a range of backgrounds, but James is sure about why they are all attracted to LSTM." The jewel in the crown of a lot of the education here is the fact that we take our students overseas. A great deal of our students come here specifically because they get opportunities to work in tropical regions. It's being able to go out and see the challenges in the real world – there's nothing like it. Field work transforms people's careers and their view of those problems."

James is also certain that the School's research is essential in the classroom." LSTM is famous for really pushing the boundaries in research which is then transferred back into our teaching. Our students can get involved in, and hear about, the latest research developments 'hot off the press'; in many cases before it's even been published."

The environment James describes is a very dynamic one, where both student and lecturer are challenged to stay at the cutting-edge." Everything is constantly changing. Climate change, civil unrest, natural disasters etc affect resource-poor areas of the tropics and interventions change the prevalence and intensity of disease. We can't roll out the same lectures each year - our teaching must respond to those evolving challenges. Our students must be ready to work in those areas and in labs, so we have to keep on our toes."

The opportunities afforded by new technologies are also changing teaching and encouraging lecturers like James to reflect on their own, as well as their students' performances." It's not just what we teach but also how we teach it. For instance, we're looking at using video links to contact students and field workers in hard to reach areas - live feeds from the field. In the classroom we are using anonymous mobile response software to test learning which has really made us think about how we teach, making us better teachers and improving students' results. We also try to make learning fun - I've even worn a poo emoji hat as part of a teaching evaluation."

So, given that this is an ever-changing field, how does James see his courses and research developing in the coming years? Unsurprisingly, given its coverage in the press, anti-microbial and insecticide resistance are hot topics." A great deal of our research will continue to be pushed in these directions. However, lab work is not enough – we need to communicate this work and educate people as to the dangers. " James explains," Many of the fantastic gains we've made in tackling diseases have been driven by chemotherapy but we rely on very few drugs and need to ensure there are new drugs in the pipeline alongside better diagnostics. We need to up our game – this is an 'arms race' between the parasites, the vectors and us - we need to stay ahead."

When asked about his favourite aspect of the job, James' answer in unequivocal." The interaction with students - in the lab, in the field and in lecture theatres. They can be great fun. Sometimes we underestimate what students are already capable of, but if we pose them a problem and allow them the flexibility to solve it we can be taken by surprise. Students amaze us! They bring an infectious enthusiasm (pun intended), year after year, that keeps everyone going. It's easy to get up in the morning to come to work when you have that. "

PROGRAMME BENEFITS:

- Investing in professional and personal development of staff will enhance your organisation and improve retention.
- Students will benefit from a highly flexible course structure across leading educational institutions with established humanitarian, medical and public health programmes.
- The course integrates work and study. It can be completed in conjunction with work commitments in the field and/or headquarters, and is expected to sharpen the skills and capacity of staff to take on leadership roles.
- LEAP students will have critical distance for reflection on professional challenges. This will allow humanitarian organisations to benefit from the insights of operational research.
- The programme will offer various entry routes leading to a Postgraduate Certificate, a Postgraduate Diploma or a Master of Science (MSc). Students will have up to 5 years to complete the MSc in Humanitarian Practice which will allow them to study whilst continuing to work in the humanitarian sector.

The LEAP Master's Programme in Humanitarian Practice is a collaboration between the Liverpool School of Tropical Medicine (LSTM), the University of Manchester's Humanitarian and Conflict Response Institute (HCRI) and international medical charity Médecins Sans Frontières/Doctors Without Borders (MSF) to develop a flexible higher educational programme for humanitarian workers around the world.

It offers tailored content and opens access to an exciting and broad range of courses across the two academic institutions.

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Since 1898

MANCHESTER
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Discover more about the LEAP Master's Programme – humanitarianleap.org

Professor David Lalloo was announced as Janet Hemingway's successor earlier this year, taking up the reins as Director from 1 January 2019.

Professor Lalloo is currently LSTM's Dean of Clinical Sciences and International Public Health. He has focused on clinical trials in the tropics, particularly in HIV related infections, malaria and envenoming. He currently has collaborations and studies in a number of countries including Malawi, Uganda, Sri Lanka, Vietnam and South Africa. He holds an appointment as Honorary Consultant at the Royal Liverpool University Hospital and is Clinical Director of the Tropical Medicine Directorate, and Director of the Wellcome Trust Liverpool Glasgow Centre for Global Health Research and Wellcome Trust Clinical PhD programme.

Professor David Lalloo

LSTM's new Director from 2019

Q&A

First question, Everton or Liverpool? (or Tranmere?)
Liverpool because of my son's passion; I'm afraid that I prefer rugby.

Looking back a few years, when and why did you choose tropical medicine?
I had always been interested in infection and fascinated by different cultures. I spent my medical school elective in Papua New Guinea which further sparked my interest, but a chance meeting as a junior doctor led to me being offered a post to help set up a Clinical Research Unit in Port Moresby and set me on the path to a career in Tropical Medicine.

You came to Liverpool from Oxford in 1999. What drew you here and what changes have you seen at LSTM in that time?
The major attraction of LSTM at that point was that they offered me a job! Clearly LSTM has changed considerably over the years and it has been incredibly rewarding to be part of its growth and success and to see the enormous impact it now has on addressing health issues of poor people in the tropics

You've worn several hats at LSTM – what have been the highlights?
I'm lucky that I tend to enjoy most things that I do - having a variety of roles has meant that I have never been bored! I think the highlight for me has been my involvement in the successful growth and development of the MLW programme which now employs over 680 people in Malawi, has substantial funding and is addressing a number of key research questions in the region.

LSTM is, by its very nature, an outward-looking, internationally-minded organisation. What does Brexit mean for the School?
I think at the moment it is incredibly difficult to predict what the long term effects of Brexit will be but I am relatively optimistic that some avenues of European funding will remain open. What I am sure about is that LSTM will remain committed to doing as much as it can to support its existing staff from Europe and will look for every opportunity to continue its highly successful collaborations with scientists and institutions from all over Europe.

2023 is a big year for LSTM as it will celebrate its 125th birthday. What will LSTM's main message be then?
I hope that LSTM will be recognised as a great place to work, where scientists of different disciplines and nationalities work in partnership with researchers and institutions in disease endemic countries, to find solutions to important health problems.

THE FUTURE OF TEACHING

Progress made in tackling inequity in global health

Progress made in tackling inequity in global health, over the last 50 years, is undeniable. Focussed overseas aid and research funding, greater collaboration with health ministries and NGOs, and major scientific breakthroughs in the discovery of drugs, vaccines and diagnostics has led to a dramatic reduction in child mortality and substantial progress in the control of many deadly diseases.

Dr Martha Chinouya
MSc Global Health
Programme Director

Professor Phil Padfield
Dean of Education

Many of the biggest and most complex challenges that remain have proven to be stubbornly resistant to existing interventions, and gains that we have made are levelling off. Rather than shrinking the disease map, issues which previously have been limited to the Tropics are now becoming of broader global significance. The World Health Organization lists a number of diseases which have the potential to cause public health emergencies, but for which there are currently no efficacious drugs and/or vaccines; global pandemics do not respect geographical boundaries, and a globally focussed effort is needed to combat them.

Globally, we are not producing enough future health leaders equipped to tackle the enormity of these health challenges that face the world. Never have health threats, previously confined by geography, been of such critical global significance; meaning that our work has international relevance for today and in the future. Our industry partners have identified skills gaps in the health and research sectors that urgently need to be addressed to meet these needs:

- Rapid assessment and swift response in pressurised situations
- Reacting to rapidly changing contexts and remaining cool under pressure
- Understanding risk and being able to take informed decisions based on the analysis of data/ information
- Cultural sensitivity and empathy and the ability to communicate clearly and effectively
- The ability to inspire others

We therefore need to develop and train a new generation of health leaders, providing them with the ability to apply their skills in home and international contexts.

At LSTM, we believe the answer lies in creating an education offering which is globally relevant and accessible, and responsive to the needs of our students and the communities they serve. We are embarking on a transformational growth strategy, with the expansion of our Education programmes and the innovative use of technology as key pillars.

An example of this is the opening of the Weston Active Learning Laboratory. This new technologically-advanced facility, is designed to create a student-centred approach to learning, offer a dynamic environment which can be used for both formal teaching sessions and informal social study.

Dean of Education, Professor Phil Padfield, says: "This is a key example of LSTM's commitment to education, and represents a significant investment in our physical teaching and learning environment in support of our teaching expansion. Allowing our students to simulate scenarios and learn directly from leaders in the field enables them to develop the critical skills required for a career in global health in a much more effective way than traditional classroom models alone. We are proud that LSTM is leading the sector in this innovative approach to teaching across all programmes in our campus-based portfolio."

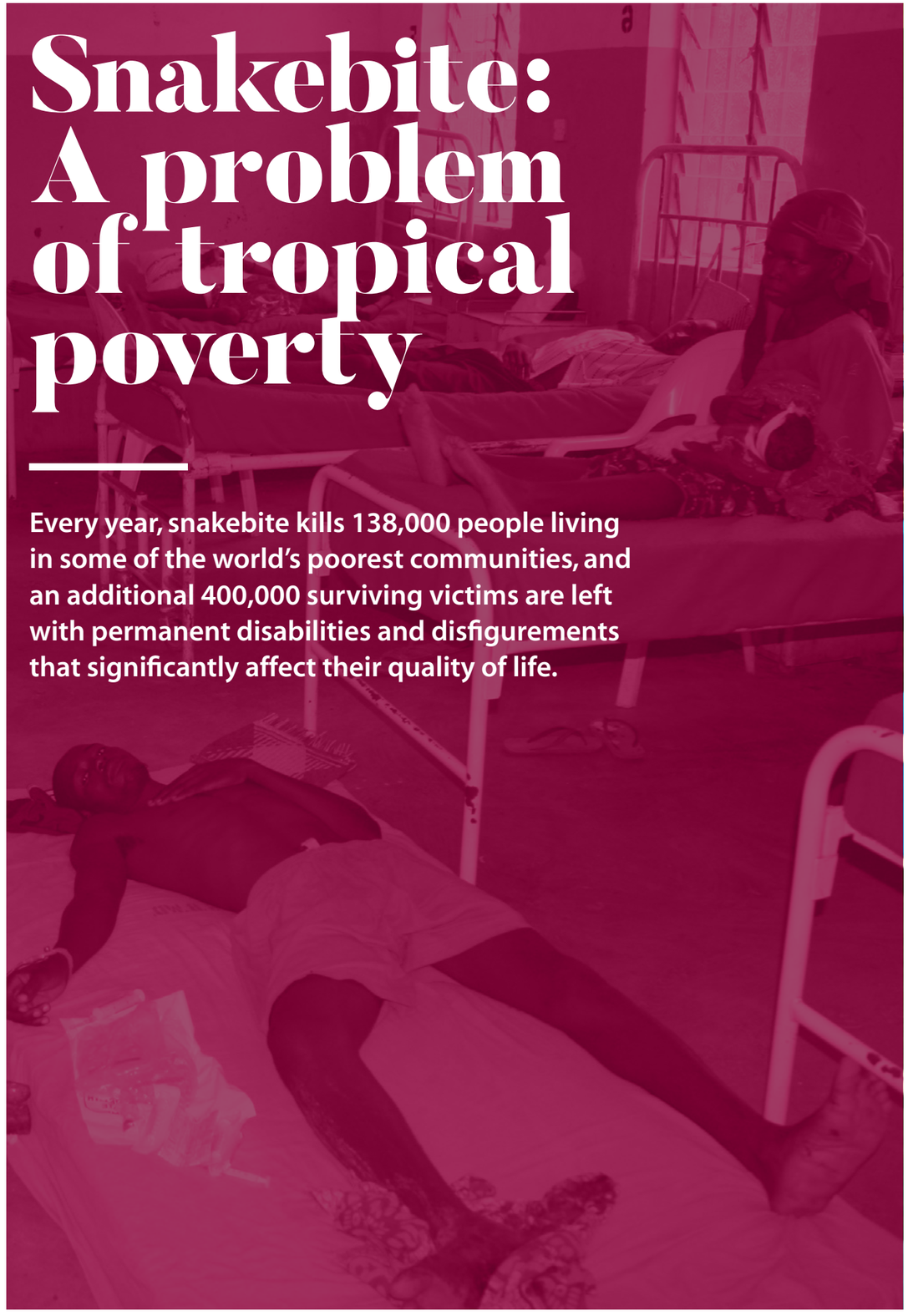
Reflecting LSTM's ethos of partnership and learning from in-country experts, LSTM's new MSc Global Health has also launched this year. Designed as an innovative blended programme, with online and in-country delivery with regional partners, the programme will train students to work collaboratively across borders in preventing and responding to health threats.

MSc Global Health Programme Director Dr Martha Chinouya is leading the development of this pioneering new programme:

"Our flagship MSc Global Health programme is innovative in its content and delivery model, and distinctive in its field-led and research-informed approach. The opportunity to study part of this programme outside of the UK is a key element of the course and supports our ethos of working with regional partners. Our students will benefit from a truly international experience".

To stay up to date with further developments in our teaching activity, visit **www.lstmed.ac.uk/study**

Snakebite: A problem of tropical poverty



Every year, snakebite kills 138,000 people living in some of the world's poorest communities, and an additional 400,000 surviving victims are left with permanent disabilities and disfigurements that significantly affect their quality of life.

Rural African and Asian communities are most affected, particularly 10-30-year olds; those people who should be supporting families or going to school. For this reason, snakebite is both a cause and a consequence of tropical poverty.

LSTM's Centre for Snakebite Research & Intervention (CSRI) is committed to addressing the danger posed by snakebite. The centre firmly believes that poverty should not be a barrier to health and so is working to design and deliver effective and affordable snakebite treatments.

PROBLEMS POSED BY POVERTY

The centre's focus is on sub-Saharan Africa where the need is greatest. These communities are especially vulnerable for several reasons: food and water stored in their mud & thatch homes attract rodents which in turn attract snakes; people sleep on the floor without bed nets; poor electricity supplies mean that snakes can't be seen at dusk/night when they are active; and whether farming, herding livestock or collecting food or wood, both adults and children are at risk outdoors.

Access to treatment is also a problem. People typically live far from a facility with effective treatments, and ambulance services are often non-existent. Also, antivenoms are prohibitively expensive for most victims ($200-1,500), and more than 90% of those available are weakly effective or dangerously ineffective.

CSRI SOLUTIONS

The CSRI team is looking at a number of possible solutions to the problem of snakebite. One helped increase the supply of effective antivenom to Nigeria, where snakebite is a major health problem. The team imported the most medically-important Nigerian snakes to the LSTM herpetarium (home to Europe's largest and most diverse collection of tropical venomous snakes), and then, by linking up with its network of antivenom manufacturers, designed, produced, tested and delivered more than over 37,000 vials of two new antivenoms to Nigeria.

The team is also optimistic that the 'holy grail' of snakebite-treatment – universal antivenoms - can one day be achieved, and has several staff and students undertaking lab-based research. Through grants from the Medical Research Council, the Wellcome Trust and the Department for International Development, the centre is working to develop treatments that can rapidly neutralise all venom-induced pathologies, irrespective of snake species and geographic area. They will also be safe, affordable and readily available to at-risk communities.

While these studies have the potential to revolutionise snakebite treatment, the CSRI is very aware that their delivery is 5-10 years away,

and that in the meantime people in Africa are dying and suffering from snakebites. The African Snakebite Research Group, which the CSRI leads, is therefore substantially supporting new centres of snakebite expertise in Africa. The Snakebite Research & Intervention Centres in Nigeria and Kenya are enabling scientists to act on the findings of their research, with strategies that include: community education to reduce the incidence of snakebites; testing the effectiveness of a motorcycle ambulance giving victims rapid access to hospitals with effective antivenom and trained staff; establishing regional antivenom-efficacy testing centres to ensure that ineffective antivenoms are not distributed; conducting clinical research of envenomed patients to improve treatment and diagnosis, and epidemiological research to accurately targeting antivenom delivery to at-risk areas.

It is hoped that together, these CSRI plans will dramatically and sustainably reduce snakebite as a global health concern, and especially in the world's poorest regions.

For more information on the global snakebite crisis visit **minutestodie.com**

LSTM's Centre for Neglected Tropical Diseases work on *lymphatic filariasis* (LF) in Malawi is a real success story

Treating a country to cure a disease

Ask someone in the street if they have heard of lymphatic filariasis, or elephantiasis as it is also known, and you won't get many affirmatives. Show an image of a vastly swollen lower leg and you will probably get a few more positive answers, but still not as many as might be expected for a disease that affects around 120 million people in 73 tropical and subtropical countries and impacts on millions more.

Lymphatic filariasis (LF) is caused by thread-like nematode worms (2-10cm long) that live in the lymphatic vessels of humans. The disease is spread by infected mosquitos which transfer the worm larvae when they bite. People suffering with LF can develop swollen limbs (lymphoedema) which resemble the legs of elephants (hence the name). The skin on the legs thickens and folds, lesions can grow to give the skin a blistered texture. Hydrocoele (scrotal swelling) is another clinical manifestation of LF affecting men.

As well as extreme pain and fever, sufferers can also endure reduced mobility, poor quality of life and social exclusion, which in turn impacts on their dependents and community. LF has a major economic and social impact on people who are already living in the world's poorest regions.

To stay up to date with current research projects online **www.lstmed.ac.uk**

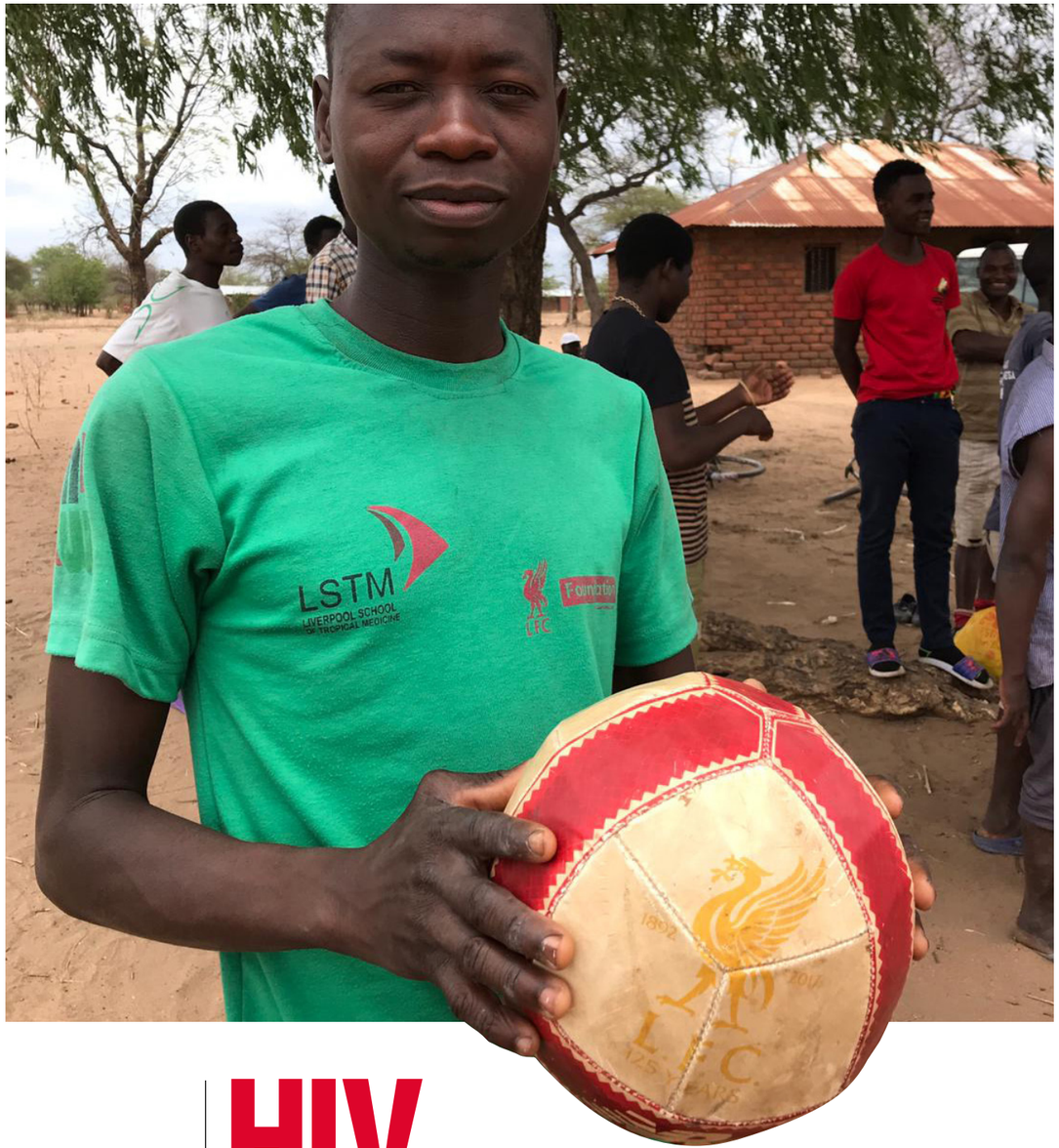
In 2010, when LSTM's Centre for Neglected Tropical Diseases (CNTD) began working in Malawi, LF was considered endemic in 26 out of 28 districts in the country, putting millions of people at risk of infection. Since then, working in partnership with Malawi's Ministry of Health, significant progress has been made towards achieving the components of the World Health Organisation (WHO) Global Programme to Eliminate LF. Transmission of the disease has been halted through mass drug administration (MDA), with 28,644 purposely-trained community drug distributors delivering 58,821,237 treatments over a 5-6 year period. The team has also supported the training of local health workers treating the clinical manifestations of LF through lymphoedema management and hydrocoele surgery.

The first two nationwide transmission assessment surveys (TAS) have been successful in showing a reduction in infection and now, in 2018, the final TAS is underway. Sarah Martindale, Programme Manager for Malawi at CNTD, is optimistic:

"CNTD's work on LF in Malawi is a real success story, and there is now a very low risk of LF infection. If progress continues, and Malawi passes TAS 3, the country looks set to become one of the first in sub-Saharan Africa, after Togo, to eliminate LF as a public health problem. This bodes well for LF control in other affected countries, and we are also supporting LF elimination programmes in 11 other African and Asian countries."

As exciting as this news is, it is important to ensure that LF stays eliminated. CNTD is also working with the Ministry of Health in Malawi to develop and deliver a post-TAS surveillance strategy to ensure that the disease does not return. »

This programme has been funded by the UK government through the Department for International Development.



HIV SELF-TESTING

Throughout 2018, there have been intensive global efforts to increase the proportion of people who know their HIV status, facilitated by the scale up of new testing approaches and technologies. In 2018, UNAIDS reported that 75% of adults globally were aware of their status, short of the 2020 target of 90%, and masking disparities in status awareness.

HIV self-testing, where an individual collects their own sample and conducts and interprets the result, is a relatively new intervention that has been recommended by WHO as an additional testing strategy able to improve uptake and frequency of testing among both general populations and men.

Remote rural populations, men, young people and key populations, including female sex workers and men having sex with men, tend to be less well-served than other groups by standard clinic-based HIV testing. HIV self-testing, where an individual collects their own sample and conducts and interprets the result, is a relatively new intervention that has been recommended by WHO as an additional testing strategy able to improve uptake and frequency of testing among both general populations and men. HIV self-testing has high acceptability among general populations, young people, and key populations and has the potential for major health impact among people in sub-Saharan Africa and assist efforts to end the global HIV epidemic.

LSTM researchers, including Dr Peter MacPherson, Dr Miriam Taegtmeyer and Professor Frances Cowan and their teams, have led a decade's worth of research into HIV self-testing, spanning from initial feasibility studies in Malawi in 2009 to large trials of effectiveness and multicounty evaluations of implementation across Southern Africa.

Preliminary research studies showed that HIV self-testing was feasible and acceptable when offered through community members and had high potential to reach groups not otherwise well-served by HIV testing interventions, including men. LSTM has also led innovative research into improving access to HIV care and prevention services following HIV self-testing. In the first study of its kind, people in Blantyre, Malawi who self-tested positive for HIV were three-times as likely to start treatment when offered at home. LSTM researchers have also been instrumental in showing that HIV self-testing is likely to: be cost-effective if introduced at scale; increase access to HIV treatment and prevention services; and have a low risk of adverse outcomes and of perpetrating stigma.

MALAWI HEALTH GOALS

To break down barriers to access, and to raise the profile of the importance of HIV self-testing, LSTM is partnering with the Liverpool Football Club (LFC) Foundation, who funded a project to test the power of football as a community convenor to support self-testing.

Coaches from Malawi came to Liverpool in March to undertake an intensive coaching week alongside the LFC Foundation coaches, and supported by LFC player Sadio Mane, who is an ambassador for the project. The visit was then reciprocated as the LFC Foundation coaches travelled to Malawi to run community sessions, and a tournament and carousel of activities at the Kufukufuku Science Festival, run by the Malawi-Liverpool-Wellcome Trust Clinical Research Programme.

MLW Science Communication Manager, Rodrick Sambakunsi, said "The use of football at this year's event is an example of how MLW uses different innovative strategies to engage the public on health and health research. We are extremely happy to partner with LFC Foundation and use Sadio Mane as the face of the campaign, helping us to reach out to the youth of Chikwawa."

This first year of the project saw an increase in attendance at the festival from circa1,500 in 2017 to 6,500, and the team were able to engage more than 600 young males in footballing activities, over four sessions, which included a self-testing station. The project is due to run for another two years.

To stay up to date with current research projects online **www.lstmed.ac.uk**

Industry

Many of the biggest and most complex health challenges facing the world, such as malaria, have proven to be stubbornly resistant, and gains are levelling off. Within our lifetime, the tried and tested drugs and insecticides developed in the last century that have had a positive impact on health have seen significant reductions in their efficacy.

Insecticide resistance presents a major threat to the major gains made in malaria control over the last two decades. If left unchecked, insecticide resistance could lead to a substantial increase in malaria incidence and mortality.

IVCC has led the way in this area by initiating 'ZERO by 40', a multi-stakeholder partnership which will support product innovation through collaboration.

The Innovative Vector Control Consortium (IVCC) is playing a lead role in the global malaria community in addressing the urgent need to prevent an increase in insecticide resistance, and to maintain the effectiveness of existing vector-control interventions.

Started by the Liverpool School of Tropical Medicine in 2005 through a $50m grant from the Bill & Melinda Gates Foundation, IVCC has evolved into a standalone Product Development Partnership (PDP) with multiple funding partners and supported by its own Board of Trustees.

The focus of IVCC - a registered UK charity - remains the development and delivery of vector control tools to combat malaria and other neglected tropical diseases (NTDs). To do this IVCC works with industry to identify and develop effective public health insecticides for use on range of interventions such as bed nets to combat the growing threat of insecticide resistance.

The original mission of IVCC was to maintain the gains in malaria decline made since 2000. This was predominantly focussed on replacing current active ingredients in bed nets and indoor residual spraying with new or repurposed chemistries to manage resistance and improve performance. However, to eradicate malaria we need to go much further and make available an integrated toolbox of solutions that include new active ingredients and repurposed chemistry, resistance management, vector management and improved technology.

IVCC's industry partnerships are already having an impact, with two key partners, BASF and Sumitomo collaborating with IVCC on the introduction of two new insecticides; one for use on a bed net (BASF's Interceptor® G2), and another as an indoor residual spray (Sumitomo's SumiShield® 50 WG). Together they represent a major step in the battle to manage insecticide resistance.

Malaria eradication will rely on a range of solutions in which vector control continues to play a leading role. However, innovation cannot just be about new product development; rather, it is the responsibility of the entire global health community to accelerate pathways to approval and implementation, identify key enabling technologies, and identify innovative new funding, partnership and delivery models. IVCC has led the way in this area by initiating 'ZERO by 40', a multi-stakeholder partnership which will support product innovation through collaboration.

ZERO by 40 originated at the World Economic Forum in Davos in January at a meeting of the CEOs of the major research-based agrochemical companies, hosted by Bill Gates and IVCC. A few months later at the Commonwealth Heads of Government Meeting in London these same companies made a public commitment on a world stage to work collaboratively to play their part in advancing vector control innovation, with the goal of eradicating malaria by the year 2040. ›

For more info about the work of IVCC visit **www.ivcc.com**

ZERO 40

ALUMNI

As a graduate, partner, member or supporter of LSTM, you are a part of a global community of world-changing alumni and friends. We are proud to attract the best talent from around the world, and prouder still of what they go on to achieve. Since 1898, LSTM has fostered a community of future leaders, working to break the cycle of poor health and poverty all over the world.

"My time at LSTM was totally instrumental in shaping my future."

Professor Kevin Marsh studied the Diploma in Tropical Medicine and Hygiene (DTM&H) at LSTM in 1981 after graduating in Medicine from the University of Liverpool.

He went on to begin his research career at the Medical Research Council Unit in the Gambia, then from 1985-89 he was at the Institute of Molecular Medicine in Oxford, and from 1989 to 2014 he directed the KEMRI Wellcome Trust Research Programme in Kenya. He is a senior advisor at the African Academy of Sciences, and Professor of Tropical Medicine at the University of Oxford. He directs the Africa Oxford Initiative and is chair of the WHO Malaria Policy Advisory Committee and a member of a number of international advisory committees relating to malaria and to global health research.

He is a fellow of the Academy of Medical Sciences and the African Academy of Sciences, was awarded the Prince Mahidol prize for Medicine in 2010 and the Al Sumait prize for African development in 2016. Kevin was also awarded the Mary Kingsley medal by LSTM in 2015 for his contribution to the field of Tropical Medicine.

"My time at LSTM was totally instrumental in shaping my future - as a direct consequence of the teaching and contacts made there I decided to apply for a research fellowship to work on immunity to malaria, and that in turn shaped my entire career."

To stay in touch and become part of our global community, visit **www.lstmed.ac.uk/alumni**

Dr Ifeanyi Nsofor came to Liverpool in 2006 as a Ford Foundation International fellow, obtaining a MSc Community Health.

Following his time here in Liverpool, Ifeanyi went on to work on a variety of projects in the health sector in Nigeria, including work with Pathfinder International, the TY Danjuma Foundation, and the Micronutrient Initiative.

Most recently, Ifeanyi has worked with EpiAfric, a health consultancy service which works on public health emergencies, including the Ebola outbreak; Ifeanyi has been CEO of EpiAfrica for just over a year, while simultaneously serving as the Director of Policy and Advocacy at Nigeria Health Watch.

"LSTM shaped my future tremendously. The quality of the faculty, self-directed format of learning, focus on evidence-based learning and my overseas research experience in Zambia all helped to make me a thorough global health professional. I am very proud to be an alumnus of LSTM."

"My overseas research experience in Zambia all helped to make me a thorough global health professional."

Julia Fedec completed her Nursing degree in her home country of Canada where her interest for tropical medicine was ignited following a trip to India in 2010, during which she worked in a leprosy and snakebite clinic, and primary healthcare centres. Following her graduation in 2011, Julia worked in Intensive Care for three years, before coming to Liverpool in November 2013 to complete the Diploma in Tropical Nursing (DTN).

"Studying at LSTM and living in Liverpool was truly some of my favourite months of my adult and professional life. "

After a short period working in Tanzania she went on to undertake the Master's in International Public Health (MIPH) from which she graduated in October 2015. While in Liverpool, Julia was engaged with the LSTM community, serving as Student Representative during her Masters studies.

After graduating, she returned to Canada for a period where she taught part time at Cambrian College, before going on to pursue her interest in global health. In the Democratic Republic of Congo, Julia was Hospital Nurse Manager with Medecins Sans Frontieres (MSF) for a team of six Nurse Supervisors and 120 nurses at Mweso General Reference Hospital in North Kivu. Nursing work there involved a host of challenging issues, including programs to manage malnutrition, Cholera and HIV. Julia then went on to another position with MSF as Head Nurse at POC Hospital in Bentiu, South Sudan - a hospital in a refugee camp with a population of more than 130,000 people.

"Studying at LSTM and living in Liverpool was truly some of my favourite months of my adult and professional life. I was challenged on a daily basis and stimulated to continuously learn and grow as an individual and part of a team."

LIVERPOOL SCHOOL
OF TROPICAL MEDICINE

Since 1898

MSc GLOBAL HEALTH

Join the innovators.
Lead the way.
Make an impact.

Our MSc Global Health programme is underpinned by LSTM's vision of decreasing the disease burden in resource poor settings through research, education and building capacity. The programme contributes to the global health agenda articulated in the UN's Sustainable Development Goals.

The programme will train global health leaders to collaboratively work across borders, preventing and responding to health threats whilst interacting with stakeholders in various contexts. Through a flexible blended approach, the programme will directly support health professionals working in different environments and contribute to education and capacity strengthening in diverse global settings.

The challenge starts here. To find out more information about the MSc Global Health programme at LSTM, visit:

www.lstmed.ac.uk/MScGH

Call **+44 (0)151 702 9590** Email **mylstm@lstmed.ac.uk**

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This programme is subject to final approval. Some details of the programme may therefore change.