



**LIVERPOOL SCHOOL
OF TROPICAL MEDICINE**

Since 1898

**INTERNATIONAL YEAR OF
THE NURSE AND MIDWIFE**

A celebration of vital global
health professionals — **P.12**

LOOKING TO THE FUTURE

An organisation at the
forefront of global health
— **P.06**

A GLOBAL KILLER

Our leading
multidisciplinary research
to tackle TB — **P.18**

Lead

ISSUE NUMBER 02 — 2019/20



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Nurse teaching participants how to use notebooks.

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A global community working to break the cycle of poor health and poverty all over the world

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Working towards our 125th Anniversary in 2023



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Intersecting inequalities in Democratic Republic of Congo

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How our research is saving millions of lives every year



I am delighted to share with you the second edition of Lead Magazine. I am especially delighted to welcome the class of 2019 in to LSTM's alumni family.

In this 2019/20 edition we share with you a mixture of fantastic stories about our alumni, and the excellent research that is taking place here in Liverpool and around the world. As graduates and friends, we hope you take real pride in LSTM and its impact in the field of global health.



UPCOMING EVENTS:

LSTM will have a presence at the following upcoming events:

Health Systems Global, Dubai
8 – 12 November, 2020

ASTMH – Toronto
15 – 19 November, 2020

REGISTER YOUR INTEREST:

alumni@lstmed.ac.uk

This edition comes at an exciting time for us, as our Director, Professor David Laloo, sets out his vision for the future of LSTM and we begin to plan for our 125th anniversary in 2023.

As we approach our anniversary, we are asking our alumni and friends to join us as we celebrate 125 years of global impact. We want to hear from as many alumni and friends as possible to tell us your ideas of how we should celebrate and what you think have been LSTM's (and its extended community's) greatest achievements.

Over the last three years, much work has been undertaken to reconnect with our lost alumni.

Efforts to reconnect with lost alumni and friends received a positive response with almost 2,000 individuals now signed-up, the majority of whom are based in the UK, North America and Australia. We know there are many more LSTM alumni and friends around the world and are keen to connect with them. We are particularly keen to find and reconnect alumni living and working in Africa and Asia and to ensure that their voices are heard in our 125th anniversary celebrations.

If you can help us to reach our lost alumni, either through personal or professional networks, please get in touch.

We are proud to have such a rich and diverse community of alumni and friends. You are some of the most powerful advocates we have, and we are dedicated to working with you to create a vibrant, representative and engaged global LSTM community.

James McMahon

Alumni and Donor Relations Officer
alumni@lstmed.ac.uk



Join our alumni and friends' network

www.lstmed.ac.uk/signup

01 LSTM's community health quality improvement model demonstrates the value of integrating community healthcare workers (CHWs) in expanding healthcare access and has been used by national governments and shifted the global debate on quality for CHWs.



LSTM alumna Karilyn Collins MBE (DTM&H, 1995) pictured with the HIV-positive Mothers' Club at Muheza Hospice Care, Tanzania.

02 LSTM researchers have developed cost-effective methods of tsetse control (transmitters of sleeping sickness) including Tiny Targets and insecticide-treated cattle, leading to vector control becoming an essential component of the WHO-led elimination efforts.

03 Our Centre for Snakebite Research and Interventions was instrumental in organising global advocacy efforts that resulted in key policy changes in National and International Health Agencies, including WHO's recent classification of snakebite as a priority NTD.

04 LSTM's research and advocacy to highlight the public health threat of insecticide resistance, has led to the development and deployment of new classes of Insecticide Treated Nets, with the potential to save thousands of lives. Many African countries are now deploying these 'next generation' nets in their national net distribution schemes.

05 LSTM's research has led to the development of a successful approach to the rapid scale-up of HIV testing and counselling (HTC) services in high prevalence countries, a vital component of the global HIV response. This impact is reflected in WHO policy, Ministry of Health guidelines in sub-Saharan Africa, the work of non-governmental organisations and in community HTC in the UK.

06 LSTM alumna Karilyn Collins MBE (DTM&H, 1995) founded the independent NGO, Muheza Hospice Care in Tanzania to improve quality of life to thousands of people with life limiting diseases. The hospice provides morphine and other palliative medication for pain relief and other debilitating symptoms.

07 Along with several partners, LSTM's work in cryptococcal meningitis has generated clear, policy-relevant knowledge on mortality prevention which has led to new WHO guidelines and changes to clinical practice across sub Saharan Africa.

125th anniversary

20

LSTM celebrates its 125th anniversary in 2023 and we want you to help us do it!

LSTM has pioneered many achievements in its rich history as the first institution of its kind in the world.

There are many ways LSTM's impact has been felt in the world – through discovery of parasites, treatments and cures – to the incredible work of alumni and partners.

To mark our anniversary, we want to celebrate 125 ways that LSTM has changed the world. We are asking you to tell us what you think have been the major impacts of LSTM and its wider community over our 125-year history.

Get involved by visiting www.lstmed.ac.uk/125

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08 Researchers at LSTM have carried out the first ever scientific review about menstrual cups and found them to be safe and potentially as effective as other products, while also being beneficial in terms of cost and waste savings.

09 Our partnership work with Malawi-Liverpool-Wellcome Trust Research Programme saw the trial of a modern rotavirus vaccine in Africa cut infant deaths from diarrhoeal disease in Malawi by 39%, leading to a global vaccine recommendation by WHO.

10 Researchers at LSTM have taken significant steps in understanding the way that the anti-malarial drug primaquine (PQ) works, which they hope will lead to the development of new, safer and more effective treatments for malaria.

11 LSTM's Professor Janet Hemingway, the youngest woman to ever to become a full professor in the UK, became the first woman to receive the prestigious Sir Patrick Manson Medal from the Royal Society of Tropical Medicine and Hygiene in 2019.

12 Our Alistair Reid Venom Research Unit hosts the largest research collection of venomous snakes in the UK, with research focusing on the discovery of a universal antivenom, which could deliver lifesaving treatment to hundreds of thousands of snakebite victims.

13 LSTM alumna Dr Letitia Obeng was the first Ghanaian female to achieve bachelor's and doctoral degrees in science and was the first female president of Ghana Academy of Arts and Sciences. She spearheaded the foundation of Ghana's national water research institute and was twice awarded the Order of the Star of Ghana.

14 LSTM has launched the HiVE (Health Innovation in a Virtual Environment) a pioneering virtual incubator, aiming to identify and test new ideas for global health by bringing together virtual teams across borders, sectors, and disciplines.

15 Researchers at LSTM discovered a species of black fly is responsible for the transmission of the filarial worm which causes river blindness.

16 LSTM collaborative work has led to the creation of a world-leading product development partnership, IVCC, dedicated to bringing new insecticides to market within the next five years.

17 LSTM alumnus Dr Charlie Easmon (DTM&H, 1995) co-founded Global Health Action Strategies and Solutions (GHASS), established to provide effective and rapid independent response to global disasters.

18 LSTM based A-WOL consortium developed the first single new drug to treat onchocerciasis (river blindness) and lymphatic filariasis (elephantiasis). This has potential to shorten that timescale of treatments from weeks to days which could significantly impact the international timetable for the elimination of these two neglected tropical diseases.

*Portrait of FEPOW
Charlie Proctor in
Changi (1944).*



19 In partnership with WHO, we have developed a smartphone app to help health workers understand why circa 5.3 million babies each year are stillborn or die in the first month of life. The majority of these deaths are in low- and middle-income countries.

20 Our work with Far East Prisoners of War (FEPOW) has spanned seven decades, leading to pioneering treatment of their medical conditions and the Secret Art of Survival Exhibition; showcasing hidden FEPOW art work for the very first time. ▶



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An organisation at the forefront of global health

It is a real pleasure and privilege to write my first Lead article as Director following another highly successful year for LSTM. Thanks in large part to Janet Hemingway's leadership, I have taken over an organisation at the forefront of global health research with a clear mission and considerable impact in its work in resource poor settings.



That does not mean that there are not challenges. LSTM has been well positioned to take advantage of the considerable expansion in global health funding over the past few years and we continue to grow our research income, but this cannot be at the expense of other critical income streams such as our education and charitable activities. The political uncertainty over Europe has not only affected funding streams, but has had a major influence on perception of the UK as a place that does not welcome foreigners, something that is both at odds with our culture and highly detrimental to an organisation such as LSTM.

One of our first actions as a management team has been to look forward and consider how we can ensure that LSTM is best equipped to succeed in this changing environment. Ensuring robust succession planning is one of our strategic aims and this year has seen the beginning of a specific initiative to recruit junior lecturers and the focus on developing the next generation of research leaders. Alongside our expanding teaching portfolio, including the launch earlier this year of our MSc Global Health programme and LEAP, a joint partnership with MSF and the University of Manchester, LSTM is continuing to build on its longstanding reputation for developing the researchers, policymakers and healthcare professionals who are on the frontline of dealing with the global health challenges facing the world.

The scientific environment is also changing. The scientific capacity of many of the countries in which work is rapidly growing and funding is increasingly flowing directly through those countries. Much of LSTM's success has been built on equitable partnerships but the nature of those partnerships is evolving and we need to focus on how we grow the number and breadth of our overseas partnerships to respond to changing needs, ensuring that LSTM becomes an even more international organisation.

A flagship example of one of LSTM's longest-established partnerships is that of the Malawi-Liverpool-Wellcome Programme (MLW) in Blantyre. Having worked in Malawi and been involved first-hand with the impact of MLW's work, I am looking forward to seeing the development of an exciting initiative, the new CREATOR project, over the next 18 months. Malawi has one medical school and no specialists trained in-country. The Clinical Research Excellence and Training Open Resource will be the first specialist clinical and postgraduate training facility in Malawi, providing the first in-country opportunity to develop the full potential of young doctors trained by the College of Medicine.

LSTM is joining the University of Liverpool and the Wellcome Trust in funding this project and we are appealing to donors to help us reach our £10m target. We expect the CREATOR to be finished in summer 2021 and that it will be a game-changer for Malawi's health system, catalysing more high-impact research and creating a sustainable medical workforce.

Our major focus will always be on poor populations in tropical regions. However, as a public health institution it is important to explore how LSTM can use its expertise to better engage with the considerable public health issues that face our home city of Liverpool and I am keen that we ensure that we take our place alongside other Liverpool institutions as the Life Sciences becomes a major driver for the Liverpool economy.

Over the coming year I look forward to meeting more of our alumni, friends and partners in Liverpool and around the world as we look towards LSTM's 125th anniversary celebrations in 2023. I am delighted that we will be holding more events than ever to ensure that we maintain our connections with the extensive LSTM community and as Director, would like to extend congratulations from all at LSTM to the newest members of that community; the class of 2019. ▶

How can one focus and work without a salary? Or when bombs are exploding nearby? Or when you worry that your staff won't make it home? Or that a cholera epidemic could compromise your hospital?

Heroine's mission to save wartime Yemen's children



2019 HONORARY GRADUATES

Left image
Dr Najla al-Sonboli got
her PhD in Liverpool.

Credit: UNICEF

For the past four and a half years, LSTM alumna, Prof. Najla Al-Sonboli has dedicated her life to helping some of the most vulnerable victims of war-torn Yemen, the children. Every day she sees innocent children come through the doors of her hospital, victims of a war that has ravaged her home country. "I see children suffering and dying right in front of my eyes, I needed to do something to help."

While at LSTM, Prof. Al-Sonboli initially studied for a Masters in Tropical Paediatrics, graduating in 1999. She then later went on to complete the Diploma in Tropical Child Health. Following that she completed her PhD in paediatric health at LSTM with supervision from Professor Luis Cuevas and research in her home country of Yemen.

Now a leading paediatrician and researcher, Prof. Al-Sonboli is the head of the Paediatric Department at Al-Sabeen Hospital for Maternity and Children in Yemen's largest city of Sana'a and Head of the Paediatric department – Sana'a University.

"I love kids, I can't bear the thought that anything could hurt them. So, I decided to study paediatrics and help children in Yemen. Because of war, they are dying from diseases, hunger and cross fire. They are suffering too much; many have lost their parents, and many are displaced and separated from their families and their homeland."

In the face of war and grave personal risk, Prof. Al-Sonboli and her team work tirelessly providing essential and much needed medical care to thousands of children, whilst organising staff to provide voluntary services with minimal resources and coping with new challenges her paediatric department faces. "Every day brings new challenges. We are facing the spread of many epidemics and diseases such as measles, cholera and severe malnutrition."

"We are admitting cases even on the floor, on chairs, inside their cars with IV stands to prevent them from getting shocked. It is a real disaster"

"At times we have had to work under fire. Parts of our hospital have been destroyed, and once, one of the rockets hit inside the hospital. This meant our medical staff couldn't come to work."

After years of brutal conflict, many of the doctors and nurses are tired. For years, staff have received no salary, many being left without enough money to feed their families. "Some of my colleagues are struggling to buy food for their own children. When this happens, we all come together and make sure we can support them by collecting small amounts of money to help them"

For some time now staff at LSTM and the broader Liverpool community have been raising vital funds to support colleagues to provide essential medical care to save children's lives in an incredibly difficult situation. This has since seen the formation of the 'Liverpool Friendship Group' which has supported six voluntary nurses, two doctors and extended the Paediatric Intensive Care unit (PICU) and Emergency services for children, bought equipment and developed a new cardiopulmonary resuscitation point.

"The toughest challenges that I faced are to work without salary, if it wasn't for the generosity of LSTM alumni, staff and the Liverpool community, we don't know what we would do."

Outside from her day-to-day work, Prof. Al-Sonboli remains a close research partner of LSTM and together with Dr Nasher-Al-Aghbari (another LSTM alumnus); Profs Cuevas and Theobald have held awards from TB REACH on strategies to enhance case findings amongst vulnerable groups.

When asked for the best advice she has ever received, she said "To be a good leader, you have to lead by example – you have

to become a symbol." Prof. Al-Sonboli is a living example of true leadership. Her work and determination have inspired her hospital staff to persevere when things become ugly and simultaneously inspired the international community to recognise her achievements.

"For me, I had the chance to fly out of Yemen as many did but I preferred to stay and help my people. I thought "if I run away and I am the head of the department, then who will stay? No one will come to work." So, I decided to go to my hospital under fire and to try to encourage my colleagues to come, too."

In 2018, Prof. Al-Sonboli was recognised as a Heroine for Health at the World Health Assembly meeting in Geneva, for her tireless work in her home country of Yemen.

Nominated for the award by LSTM's Professor Sally Theobald, Prof Al-Sonboli was recognised by Women in Global Health in association with GE, who celebrated the contribution of nine Heroines for Health, presenting each with an award for leadership in their communities. Unable to leave Yemen, Professor Theobald accepted the award on her behalf.

"Sadly, war and fragility are not going away. We need to recognise, honour and learn from Najla and all the heroes and heroines that work alongside her, in continuing their efforts to bring hope and save lives. This award reflects the respect and support from the global health community for all that they do."

When interviewed for her Heroine of Health Award, Prof. Al-Sonboli credits her strong relationship with LSTM for keeping the hospital running, including providing much needed funds to rebuild destroyed wards and to treat increasing numbers of patients. ▶



On the side of joy and delight

“Sickness is enormously challenging, and tackling that challenge can be exhilarating.”

2019 HONORARY GRADUATES

If you ask Professor Malcolm Molyneux about his biggest source of pride he will talk about his family. Ask him about the many clinicians and researchers he has inspired and he will tell you “they are first-rate people - it’s a privilege to have them as friends”. Talk about his love of music and he will tell you about the Malawian choir he conducted, “getting people together and producing something that is surprisingly better than the sum of the parts”. The unifying theme is other people – collaboration - a power in which Malcolm Molyneux is a firm believer.

He is also very humble. “Have I done anything useful for mankind? I don’t think so,” he laughs. “Little bits here and there...” However, that modesty belies a lifetime of achievement and a legacy which will be felt in Malawi and the UK for a long time to come.

The first thirteen years of Professor Molyneux’s life were spent in the jungles of what is now the Democratic Republic of Congo, before going to school in the UK where he was fascinated by secondary school science lessons. These are experiences which, he concedes, may have influenced the direction his life later took. A medicine degree at Cambridge, training at St Bartholomew’s Hospital in London and various registrar jobs followed, before Professor Molyneux and his wife, Elizabeth, embarked on a move to Malawi.

“I think we were both keen to get back to the environments we’d lived in as youngsters in the tropics, where poverty was considerably more than we’d experienced in the UK.”

A period at a mission followed by several years as a clinician for the government ultimately led to a return to the UK where Professor Molyneux had secured a post at LSTM. This began an enduring association which has now led to the school awarding him an honorary degree, recognising the significant contribution he has made to both the school and his field of expertise.

“When I got to LSTM I was actually more interested in hepatitis than malaria, but Professor Gilles, who was Dean at the time, said ‘I think it might be more sensible if you get into malaria.’” A couple of months in Thailand, during which he “inevitably became fascinated by malaria”, were followed by starting a research programme in Malawi, and later returning to that country in 1995. There began research into severe and fatal malaria at the new medical school’s paediatrics department, an unusual step for someone who had trained as an adult doctor.

“Malaria is a very big problem in Malawi. It is the most disadvantaged people, the poorest and least accessible, who suffer the most. It mainly affects children - my wife is a paediatrician and sees a lot of malaria.”

Again, Professor Molyneux is keen to emphasise the collaborative nature of his work rather than focusing on his own notable successes, which have included a method to score the depth of a child’s coma and monitoring the development of an imminent malaria vaccine. “All medical science is collaborative, but something like malaria has a special kind of collaborative nature in that we’ve really got to work together - the very basic scientific laboratories of the industrial countries working with colleagues in endemic areas and huge populations most affected by the disease...”

That ethos is evident in two LSTM collaborations in which Professor Molyneux has been heavily involved: the Malawi-Liverpool-Wellcome Trust Clinical Research Programme (MLW) and a new Accident and Emergency Department for the hospital’s adult patients. In 1995 Professor Molyneux was appointed founding director of MLW, a collaboration to study Malawi’s endemic diseases, at first especially malaria

and HIV, and to train staff in clinical and scientific research. “LSTM was focused on the problems of the tropics and I was familiar with Malawi having worked there... Huge problems in one place and huge facilities in another, and to make a bridge between seemed a great opportunity... And it has grown much more than I ever expected or hoped, and I think it will grow more.”

Again, the importance of collaboration is at the forefront of Professor Molyneux’s mind. “MLW’s main achievement is in promoting opportunities for Malawians to progress and attend to the problems in their country. People talk about capacity building but I prefer to talk about capacity revealing, as there’s so much capacity in Malawi – 18 million people adds up to a terrific amount of intelligence and ability! When you can work together between continents and share experiences and capacities then that gives many more opportunities on the ground on both sides.” He is also acutely aware of the challenges of international collaboration.

“Working together across a cultural and social spectrum is exhilarating and fundamental. It is a privilege, even if it’s not always easy. The challenge is to live on the side of joy and delight.”

Despite now being based in the UK, Malcolm is still keen to collaborate with colleagues in Africa. “I still keep in contact with Malawian graduates; some are able to call in here in the UK, and I generally try to stay in touch with what is going on at MLW. I’m lucky and proud to have had the opportunity to work as a colleague – not as a boss but as a friend. That’s a huge privilege.” ▶

2020 has been designated as the Year of the Nurse and Midwife, to celebrate the indispensable role of nurses and midwives around the world. It also marks the 200th anniversary of the birth of Florence Nightingale.

International Year of the Nurse and Midwife



For the first time ever, nations will unite to celebrate and acknowledge the vital work and sacrifices that nurses and midwives contribute towards achieving universal health coverage.

The campaign is of particular importance as, according to the World Health Organization (WHO), nurses and midwives constitute more than 50% of the health workforce in many countries, bridging the gap between communities and health care systems.

LSTM has been playing their part in training nurses and midwives through our innovative **Diploma in Tropical Nursing**, by preparing them to work in low-income settings and make significant contributions to world health.

The Diploma in Tropical Nursing (DTN) is going through exciting times as we continually improve the programme, so that it responds effectively to the challenges and demands that nurses and midwives working in low- and middle-income countries (LMICs) are confronting right now.

This biannual flagship course has been running since 2011 and attracts nurses and midwives from all over the world. It is the course of choice by leading Non-Governmental Organisation (NGO) employers such as Médecins Sans Frontières.

Our course is designed to prepare nurses and midwives to work knowledgeably and confidently in demanding settings. By participating in a thought-provoking pre-course module, the students hit the ground running from their first day at LSTM. Hot topics delivered by world leading experts range from the serious impact of climate change on global health, implementing LSTM clinical research on malaria, to the impact of sexual abuse, mental health and gender inequality on vulnerable populations. The emphasis throughout the DTN is on encouraging nurses and midwives to enhance their skills, enabling them to be more effective leaders and facilitating their ability to work in a culturally sensitive manner.

2020's International Year of the Nurse and Midwife campaign has been instigated by the Nursing Now Campaign and will be run in collaboration with the WHO. Its vision of 'highlighting what nursing is in the modern era, and how nurses can light the way to universal health coverage and healthcare for all', aligns seamlessly with the DTN aims and learning outcomes. There is a special emphasis on leadership in nursing with the newly launched Nightingale Challenge, which aims to help develop the next generation of young nurses and midwives as leaders, practitioners and advocates in health. Leadership is a key skill required by employing NGOs and other

humanitarian agencies. At LSTM, we will be launching our own local DTN Nursing Now group in 2019.

A new element to the 2019/20 DTN teaching curriculum is a challenging session designed to simulate the real-life experience of working as a nurse in a conflict setting. The many demands of informed, yet quick decision making, being in a resource-limited environment and working in different cultural and social contexts, while still applying leadership skills, will all be addressed. This session was developed in response to feedback from previous students who commented that working as a health worker in LMICs can be stressful, so it is crucial to be as prepared as possible. On the course, there are many opportunities for the students to learn from each other, to discover how to teach effectively in LMIC settings, to value the importance of actively listening and of course to celebrate their knowledge of tropical pathogens!

"I made friends from all over the world and gained a different perspective of approaching healthcare. Doing the DTN gave me the courage for a different approach to my career."

— Annie (MSc, 2019) Australia

"I was blown away by the quality of teaching and the passion and enthusiasm of both the lecturers and my fellow students. It turns out the DTN changed my life forever!"

— Rose (MSc, 2019), UK

The feedback from students during the course is overwhelmingly positive and many participants have said it was a watershed experience for them. It is enlightening to hear how the DTN alumni subsequently apply what they have learned. This is a typical example of the stories we are sent from alumni across the world highlighting the skills needed to be an effective health worker.

Left image
Foundation for Research in Community Health (Skills Mall we ran with Auxiliary Nurse Midwives in India in 2018).

Right image
John Gray Antenatal and postnatal care training course in Zanzibar 2019.

*DTN students,
May 2019.*



“I completed my first six-month mission with MSF in the Bentiu project in South Sudan, working as the manager of the outreach team. It was peak malaria season during my mission, so I was quickly able to put the knowledge and skills that I gained at LSTM into practice. It is with no small amount of pride when I tell people that our small outreach team of 28 screened over 10,000 people for malaria and treated over 7600 cases. It is one thing to listen in a lecture hall about malaria and severe malnutrition, and a wholly different can of worms to see the devastating effect from both, and to manage them from a resource-poor perspective.”

— Gloria (DTN, 2017), Canada

*Student nurses in
Busitema University,
Mbale, Uganda*



You can read more about CMNH's research and capacity-strengthening at: cmnh.lstmed.ac.uk



LSTM's vision to save lives in resource poor countries through research, education and capacity strengthening, inspires every student that attends the DTN. As nurses and midwives, we value this unique opportunity to thoroughly enjoy learning, be deeply challenged, laugh together and to celebrate our positive contribution to global health initiatives that make a difference.

Some of this research and capacity-strengthening at LSTM is conducted by its Centre for Maternal and Newborn Health (CMNH). Experts within CMNH have developed competency-based workshop packages to increase the capacity of nurses and midwives working in low- and middle-income countries to deliver quality, holistic care. The workshops cover what is needed to meet the physical, mental and social aspects of maternal and newborn health. Following each workshop, selected participants are trained as Master Trainers, who cascade the training to their colleagues, ensuring sustainability and encouraging leadership. This peer-to-peer approach to competency-based training helps to build capacity for both participants and facilitators. Our aim is that there is a mutually beneficial sharing of knowledge between healthcare professionals.

CMNH recognises that midwives and nurses are ideally placed to provide essential health services for women and are also integral for women's empowerment. They are key in helping to end preventable maternal deaths, stillbirths and neonatal deaths and to improve the health of mothers and babies in low- and middle-income countries. >

From DTM&H to Maluku Timor

As I was in a doctors' mess back in 2012, someone told me that the LSTM Diploma of Tropical Medicine & Hygiene was the best three months of their life. I pondered how this could be. It only took a few days in Liverpool in 2013 to realise why.

Dr Lauren Chalmers (DTM&H, 2013)

Fast-forward six years, with Foundation Years and Core Medical Training under my belt, here I am in East Timor, using all I learnt during the diploma as a volunteer for an NGO called Maluku Timor. And if I hadn't made the connection through a friend from the DTM&H, I probably wouldn't be here.

Having celebrated its 20th birthday recently, East Timor is one of the youngest countries in the world. Humanitarian aid is over in East Timor, with the evolution of a new country, it is now the true sense of working in development. A phenomenal 74% of the population in Timor is below the age of 35. That is a lot of young minds to influence.

In theory, universal health coverage exists, but stories from the frontline show that the quality of this care is lacking. There's a reason why Maluku Timor's by-line is 'Advancing Quality Care Together'.

Maluku Timor works in improving the quality of care in nine different programs, and I am fortunate enough to mentor a fabulous team of young and enthusiastic



healthcare workers as part of the Maluku Timor TB Team. A large part of my job is training my team to be the future of TB care in Timor. Project development also plays a huge role, working with my team, other NGOs and the National TB Program to identify gaps in diagnosing and managing TB in East Timor, and designing projects that are feasible and sustainable.

Not only did the DTM&H fill me with TB knowledge, it provided me with a solid introduction to public health that I have been able to put into action. Our imminent projects include contact tracing for both drug-sensitive and drug-resistant TB, as well as using previous drug-resistant TB patients as peer counsellors.

I have had several of those moments where I find myself a million miles away from an understaffed NHS ward. Notably, whilst taking part in a Tuk-Tuk parade on a tropical island celebrating International TB Day, or being involved in the updating of National TB Guidelines. There is so much to do to help TB care here, and with an enthusiastic National TB Program and a global aim for Ending TB by 2035, now is a truly exciting time to work in TB in East Timor.

This country is stunning, with beautiful coastlines and rugged mountains there are plenty of adventures to be had. With the most biodiverse waters in the world, the snorkelling and diving are first class, and during the season it's hard not to spot a whale. As much as I have fallen in admiration with the beauty of the country, I have fallen in love with the people. Maluku means my family, my friends, my kinship. When my time comes to leave, it's certainly going to be a sad one. ▶



For more information about the DTM&H course or any others, visit www.lstmed.ac.uk

Reflections on our inaugural Global Health programme



DEVELOPING THE NEXT GENERATION OF GLOBAL HEALTH LEADERS



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

In September 2019 LSTM welcomed its inaugural cohort of MSc Global Health students, representing healthcare professionals from 11 countries. The MSc Global Health programme represents a new approach to teaching for LSTM as the programme is delivered through an interactive online model and is a cornerstone of LSTM's ambitious plans to expand education provision.

Reflecting LSTM's longstanding history of research and field-led teaching programmes, the MSc Global Health programme provides an evidence-based framework for developing the skills and competencies identified by employers as being those needed most critically in the next generation of global health leaders. In an increasingly unpredictable world, we need to produce clinicians and health leaders who are equipped to tackle the enormity of the health challenges that face humanity. Never have health threats, previously confined by geography, been of such critical significance; meaning that our teaching has international relevance for today and in the future.

In the first instance, the students have been introduced to critical thinking around the broad issues affecting health in various parts of the world, including: social determinants of health; health systems; climate change; 'health transitions'; and globalisation. They are also working with evidence data and using key principles from health promotion and protection in reducing health inequalities.

The energy brought to the virtual classrooms is vibrant and enriched by the students' diverse experiences and cultures, evidenced through the vibrant virtual classroom discussions and debates. Discussions of topics such as 'fast fashion' may appear out of the ordinary at LSTM where teaching about viruses and 'bugs' may have historically taken centre stage. However, these debates remind us of the interplay of numerous global threats and factors impacting the health of communities around the world and the importance of considering local cultures and belief systems in designing effective and sustainable interventions.

The development of this online learning community is opening up horizons for collaborations in global health which we hope may stretch beyond the programme itself.

Without leaving their home countries, the MSc Global Health students are able to learn together and work with their peers from across the world. Critically, strategic scholarship funding, much of which has come from the generous support of donors, has provided opportunities for some of the students to join the programme where funding would have previously been a barrier.

LSTM's vision is for the MSc Global Health to be delivered online with a face-to-face residential element offered via numerous global teaching 'hubs' enabling an even more connected network of global health professionals at the frontline of tackling some of the biggest challenges facing the world today and in the future. ▶



"My enrolment on Global Health programme is welcoming news for me to develop my skills for research work in the health sector. My passion for research work will be sharpened and equipped with the necessary skills to live my dream as a professional researcher to contribute positively to global health issues."

— Priscilla Ocran (PgDip Global Health, 2019/20), Ghana – Scholarship recipient



"I have always yearned for competencies that will bring universal health coverage closer to people in my country. With LSTM's programme on Global Health, I now have the opportunity to build those competencies and skills with the carefully framed curriculum and guided by a set of amiable tutors on the programme. It's simply amazing being part of the Global Health programme."

— Nuphi Yashiyi James (MSc Global Health, 2019/20), Nigeria – Scholarship recipient



Tuberculosis — a global killer

In 2018, 10 million globally people fell ill with TB and 1.5 million died from the disease. The great majority of these are the poorest members of society, with limited access to healthcare and few resources to cope with illness.

Tuberculosis is caused by bacteria (*Mycobacterium tuberculosis*) that most often affect the lungs. Tuberculosis is curable and preventable, though it's estimated one-quarter of the world's population has latent TB, which means people have been infected by TB bacteria but are not (yet) showing symptoms or able to transmit the disease.

An estimated 58 million lives were saved through TB diagnosis and treatment between 2000 and 2018.

When a person develops active TB, the symptoms (such as cough, fever, night sweats, or weight loss) may be mild for many months. This can lead to delays in seeking care, and results in transmission of the bacteria to others. People with active TB can infect 5–15 other people through close contact over the course of a year. Without proper treatment, on average 45% of HIV-negative people and nearly all HIV-positive people with TB will die.

Drug resistant strains of tuberculosis are now becoming more common worldwide and unless we find more effective ways to fight TB, there will be a return to the pre-antibiotic era, when there were no effective drugs to treat the disease. About 150 years ago, TB caused an estimated one in eight of all deaths in the UK.

LSTM is working together with local, national and international partners as a leading TB research centre that covers all the stages of the translational research cycle: from discovery through to delivery and evaluation. Our multidisciplinary research takes a holistic, person-centred perspective, recognising that men and women, boys and girls experience a heavy burden of lung disease which manifests with a range of symptoms including as disabling coughing, breathlessness, and wheezing. The causes of these problems are complex, very often rooted in poverty and even gender bias and include infections such as *Mycobacterium tuberculosis* and *Streptococcus pneumoniae*.

LSTM's expertise was recognised late last year with the award of a £7 million NIHR Global Health Research Unit on Lung Health and TB in Africa, IMPALA. Led by Professor Bertie Squire, Dean of Clinical Sciences, the four-year collaborative programme will generate new scientific knowledge and implementable solutions to tackle TB and its intersection with chronic non-communicable lung disease across 11 African countries. LSTM also hosts the IMPACT TB consortium led by Dr Maxine Caws, which is working in Nepal and Vietnam to generate new knowledge on how to scale up activities to identify and treat people with TB who have been missed by routine health services.

LSTM's Dr Peter MacPherson is based at the MLW Clinical Research Programme in Blantyre, Malawi and leads a programme of research designing and evaluating interventions to speed up TB diagnosis using novel diagnostics to reduce the number of missed cases. This includes the PROSPECT Study, funded by the Wellcome Trust. Adults are rapidly screened for TB using high-throughput digital chest X-ray. Thoroughly monitoring over 5000 adults entering and leaving the clinic, it showed that TB symptoms are very common, but very few are offered TB tests or correctly diagnosed.

The PROSPECT Study will investigate if a new artificial intelligence computer-aided TB detection programme can speed-up diagnosis. Because there are very few health workers skilled in diagnosing TB using chest X-rays in Malawi, an automated approach is needed. The system analyses chest x-rays for signs suspicious of TB in less than a minute, allowing health workers to focus further investigations towards the patients who most need them, and hopefully increase diagnosis rates, reducing costs, and improving patient outcomes.

LSTM efforts to find new treatments and diagnostics are being supported by Professor Giancarlo Biagini's leading work on drug discovery, Prof. Luis Cuevas's work in evaluating new diagnostic platforms for TB and Dr. Tom Wingfield's convening of LIV-TB, a cross-campus collaboration between the University of Liverpool and LSTM, which brings together TB researchers to address the social determinants and consequences of TB. Together, it is hoped that we will continue to develop innovative ways to eradicate TB. ▶





Tsetse fly.

TSETSE: AFRICA'S 'FLY OF DEATH'

Many of Africa's most notorious diseases are transmitted by mosquitoes - including malaria, yellow fever and Dengue. However, mosquitoes aren't the only potentially deadly insect on the African continent.



Insecticide-treated blue fabric attracts the tsetse flies and they are killed.



Tsetse fly colony at LSTM.

Unlike mosquitoes, both female and male tsetse feed on the blood of mammals, including humans, and in doing so, can transmit the sleeping sickness parasite (*Trypanosoma*) from infected animals and humans to uninfected ones. Of the 23 identified fly species, six are recognised as vectors that carry the parasite.

Devastating epidemics of trypanosomiasis have occurred over the last 100 years; the most recent killed 500,000 people a year at its peak.

Researchers at the Liverpool School of Tropical Medicine have developed costs-effective methods for tsetse control (Tiny Targets & Insecticide-treated cattle), which help overcome some of the shortcomings of disease screening programmes. As a result, vector control has been recognised as an essential component of the global programme to eliminate trypanosomiasis.

Most at risk of contracting sleeping sickness, which is fatal if not treated, are those in remote rural areas where people are dependent on agriculture, hunting and fishing – typically areas with limited access to adequate health care. In some regions, more than 90% of infected patients die for lack of treatment.

Without a vaccine, and with treatment currently requiring prolonged administration of toxic drugs, officials are prioritising tsetse fly control strategies.

Scientists at LSTM are working with partners from Africa and Europe to develop new methods of controlling tsetse. Tsetse must find and feed on a host every three days. By analysing the visual and odour cues the flies need to locate their hosts, the researchers, led by Professor Steven Torr, created a disease intervention called 'Tiny Targets'. Funded by the Bill and Melinda Gates Foundation, the project involves the use of one piece of insecticide-treated blue fabric the size of a handkerchief that is flanked by black netting. These targets are strategically placed at intervals along local riverbanks and water sources where the flies thrive. The blue fabric attracts the tsetse flies and they are killed by the impregnated insecticide, which reduces the population to such an extent that the number of patient cases drops dramatically.

Tiny Targets are now being used in large-scale programmes to control sleeping sickness in Uganda, Chad, Guinea, Cote d'Ivoire and the Democratic Republic of Congo. Results from these control programmes are showing that the addition of vector control to 'screen-and-treat' initiatives assist countries to reach the elimination goal.

Research by Dr Alvaro Acosta Serrano and his team focuses on the fundamental biology of insect-borne parasites as well as the how the insects that carry these diseases can transmit the parasites. This includes developing tools to control and prevent parasite transmission in countries plagued by African sleeping sickness and cutaneous leishmaniasis. His team uses molecular genetics, biochemistry and state-of-the-art microscopy techniques to understand how trypanosomes are able to establish an infection in tsetse flies, with the goal being to identify proteins to use as potential vaccine candidates.

According to the World Health Organization, the number of reported human sleeping sickness cases dropped below 10,000 for the first time in 50 years in 2009. In 2015, only 2,804 new cases were reported globally. This encouraging decline is attributed to better control of tsetse fly populations, as well as improved diagnosis and treatment. ➤

LSTM has the only tsetse breeding colony in the UK – placing us in a unique position to conduct specialised research between the fly and the parasite it ingests.

Leprosy

INTERSECTING INEQUALITIES IN DEMOCRATIC REPUBLIC OF CONGO

A story from the field with LSTM alumnus Dr. Louis Paluku Sabuni.



In 2018 there were 208,619 new cases of leprosy recorded globally. 20% of new cases recorded in Africa were in Democratic Republic of Congo (DRC) with an average of about 4,000 new cases detected each year. Those affected are often prone to social stigmatisation and discrimination, due to the physical impairments and disfigurements that may occur.

Effects of leprosy to the limbs if left untreated.

Credit Dr. Louis Paluku Sabuni



Community health workers in DRC treating sores caused by leprosy.

Credit: Dr. Louis Paluku Sabuni

Over the centuries, few diseases have invoked such dread as leprosy. In English, the word leper means not just a victim of the disease but carries the wider connotation of being a pariah, outcast or rejected by society. Today this tragic disease persists in DRC - and will continue to do so, says Dr. Louis Paluku Sabuni, as long as discrimination against its victims continues.

LSTM alumnus Dr. Sabuni, DRC Lead at the Leprosy Mission, has made it his mission to destigmatise the disease in his home country. Having studied at LSTM in 1996 (MSc Community Health) and in 2004 (PhD), Dr. Sabuni now leads a team working with government, local communities, faith organisations and traditional healers to break the stigma of leprosy which affects so many in Democratic Republic of Congo.

Also known as Hansen's disease, leprosy is a chronic infectious disease caused by *Mycobacterium leprae*, that has afflicted humankind for centuries. The disease mainly affects the skin, the peripheral nerves, mucosal surfaces of the upper respiratory tract and the eyes. This can cause skin ulcers, nerve damage, and muscle weakness. If it isn't treated, it can cause severe disfigurement and significant disability.

Returning to LSTM in Autumn 2019 to give a seminar to staff and students, Dr. Sabuni explains how it would be hard for the DRC to eliminate the disease. It is the stigma associated with leprosy that is the greatest obstacle, Dr. Sabuni said, as it made patients far more reluctant to come forward.

Many people believe that disease is a result of witchcraft or the supernatural and can even be bought to throw on to their enemies.

"There is still a lot of beliefs and myths that surround the disease. Often, people will try and hide it, as they don't want to become outcasts. People don't want their families or neighbours knowing they have leprosy, due to the fear of being chased away"

"The fact that so many of them live in remote areas makes screening even more difficult."

In his efforts to identify new cases and break down the stigma, Dr. Sabuni and his team are now working with the church and traditional healers to debunk the myths behind the disease. It is hoped that in doing so, they can identify new cases and encourage those affected to seek medical support.

"I'm sure many people believe that leprosy is highly contagious, people believe that can catch it by sitting next to someone on the bus who is infected. This is not the case. In fact, leprosy is one of the least contagious diseases. 95% of adults cannot catch it as your immune system will fight off the bacteria that causes the disease."

What many people don't know is that, with modern medicines, leprosy is curable and early treatment averts most disabilities. "After one week of multidrug therapy (MDT) patients become non-infectious and after 6-12 months, they can be completely cured."

This is the message that Dr. Sabuni is working hard to spread amongst communities, that the disease is not as infectious as people think and those affected don't have to be shunned, isolated or ridiculed and can live happy

His approach has seen a rise in the number of new cases identified by community health workers, healers and the church. Additionally, he has communities become more inclusive to those who are currently affected or have been cured. ▶



Watch Dr. Sabuni's recent seminar
www.lstmed.ac.uk/news-events/seminars-and-lectures



HiVE
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Creating a unique opportunity to bring together leading and emerging pioneers in global health research, with some of the world's most disruptive and original thinkers.

We know from working in the field across the world that there is no shortage of talented and motivated individuals who are driven to make a difference in their communities, countries and beyond. There is, however, a shortage of opportunities for these individuals to reach their full potential; we believe that HiVE could be the key to unlocking it.

HiVE aims to identify innovative, fresh thinking and applicable ideas that address global health issues. By creating a multi-disciplinary 'College of Experts' underpinned by a key skills curriculum we can develop ideas from an initial spark to a refined and confident business plan or grant proposal. HiVE is developed to enable participation from low- and middle-income countries, delivered entirely through an innovative virtual platform, in a flexible manner so that participants don't have to leave their jobs, family or country to take part.

Our 'graduates' leave HiVE with the core skills needed to develop competent funding proposals, the confidence to develop them, an amazing network of contacts and a refined and fundable proposal which could one day potentially hold the next breakthrough in global health.

HiVE is currently in a pilot phase with 20 participants in Ghana identified and in the process of being matched. These are split evenly across four regions, enabling us to test HiVE in urban and rural settings and primary and tertiary cities. The ideas proposed are highly diverse, ranging from naturally-derived water treatments, waste composting and mobile technology and microfinance innovations; to stroke rehabilitation, training simulations and curriculum development.

Several of the HiVE Pioneers are representing wider project teams, so we expect that the curriculum and skills development will be shared wider than just this cohort. The longer-term impact of some of these ideas (if successfully funded and scaled in the future) has the potential to benefit thousands of Ghanaians through the advancement of the country's health system.

Once we have tested HiVE in Ghana, we hope to run the programme in Kenya and Malawi too. This will provide a better sense of what works where and how, and how we will scale to a Pan-African and eventually, a global initiative. The digital nature of HiVE provides great flexibility, with the platforms accessible via laptops or smartphones, even with limited connectivity. ▶

"HiVE provides the platforms for addressing the missing link for health research in Ghana especially as it seeks to give us the partnership and network needed to undertake successful grant applications as lecturers in Ghanaian education institutions."

— Dr. Abdul Wahab (HiVE participant)



For more information visit
www.lstmed.ac.uk/HiVE

“To me I think the HiVE programme is the best opportunity to help me develop my idea. I have used several online learning platforms, but I think Flitepath is an excellent extension to traditional class-based training.”

Bernard Logonia
IT/Data Manager,
Navrongo Research



Bolgatanga, Academic Track
Understanding the impact of online appointment booking systems on hospital waiting times



“The HiVE program has given me definite guidance and a new perspective on how to go about research, and operationalization of my ideas.”

Dr. Nanaba Dawson-Amoah
In-residence medical officer,
Greater Accra Regional Hospital



Accra, Academic Track
Determining effectiveness of cardiopulmonary resuscitation at various levels of healthcare

“Fully flexible to develop ideas without the restrictions of busy schedules, HiVE turns the key to fling open the door of possibilities. Inspiring to believe and providing a supportive network, HiVE has it all.”

Dr. Peter Kwarteng
Senior Biomedical Scientist,
Tamale Teaching Hospital



Tamale, Entrepreneur track
Online CPD for doctors, nurses and allied health professionals

The AHIC team meet with the Pioneers in Tamale.



ALUMNI

All graduates and supporters of LSTM are a part of a global community of like-minded individuals who want to make a difference to global health. We are proud to attract the best talent from around the world, and even more proud of what they go on to achieve.



“Work hard and learn from LSTM scientists and do not be afraid to ask. Your time here is invaluable, and you are very lucky to be part of an institution like LSTM.”

DR CLAUDIA PAREDES-ESQUIVEL (PHD, 2007)

Claudia joined LSTM in 2004 as a PhD fellow under the supervision of Professor Harold Townson. She currently works as a lecturer at the University of the Balearic Islands (UIB) in Spain. She is interested in using molecular-based techniques to understand the taxonomy, phylogenetic relationships and evolution of parasites and their vectors so to improve existing control strategies.

In August 2019, Claudia and her team were responsible for discovering the Rat Lung Worm in two neurologically compromised hedgehogs rescued from two different localities in Majorca. Most human infections occur by eating improperly cooked snails or unwashed produce. Considering that snails are an important part of the Majorcan cuisine and this island has strong transport connections with the rest of Europe, her research findings create a challenging situation with many unanswered scientific questions.

Q. What advice would you give to our current students?

“To work hard and learn from LSTM scientists and do not be afraid to ask. Your time here is invaluable, and you are very lucky to be part of an institution like LSTM, which concentrates leading experts in tropical medicine. Get to know each other. In a world where differences are highlighted among people, there is need for spaces like LSTM, where you find yourself sharing a cup of tea with people from different cultures, religions and personal histories. After some laughs you will realise, we are not as different as the world tell us we are.”

CHRIS WHITE (MSc APPLIED PARASITOLOGY & MEDICAL ENTOMOLOGY, 1998)

Chris White came to LSTM in 1997 to study the MSc in Applied Parasitology & Medical Entomology, for which he was awarded a distinction for best performance and the Jervis Prize for research on the relationship between intensified peri-urban agriculture and the population density of malaria vectors in West Africa.

His post-LSTM career was initially focused on vector-borne disease control in humanitarian emergencies, working for non-governmental agencies and the United Nations. Chris later shifted to longer-term development work with Population Services International, providing malaria-related technical assistance and training support throughout sub-Saharan Africa and the Asia-Pacific. More recently, Chris has focused on global, regional and in-country advocacy for malaria elimination and spent the past few years leading the malaria advocacy investment portfolio at the Bill & Melinda Gates Foundation in Seattle.

In mid-2018, Chris was appointed Co-Director of the Malaria Elimination Initiative (MEI) within the Global Health Group of the Institute of Global Health Sciences, University of California San Francisco (UCSF).

Q. What is your proudest achievement?

"I grew up in a low-income government housing project (or Council Estate as they're known in the UK) and was the first in my family to ever enter and graduate from university, so securing a distinction in my MSc degree at LSTM, and winning the class prize, will forever remain one of my proudest achievements."



"Securing a distinction in my MSc degree at LSTM, and winning the class prize, will forever remain one of my proudest achievements."

DR CHARLIE EASMON (DTN&H, 1995)

Dr Charlie Easmon came to LSTM in 1995 to study the Diploma in Tropical Medicine and Hygiene, after training as St George's Hospital Medical School and performing his medical elective in Ghana.

Following his time at LSTM, Charlie went on to work in a range of settings around the world, including NGOs such as Save the Children and Merlin, and the UK Foreign and Commonwealth Office as Medical Director. More recently, Charlie's interest has turned towards mental and occupational health in the corporate setting, and he has a wealth of experience into the impact of stress on staff working conditions.



Charlie is currently CEO and Medical Director at Your Excellent Health Service, providing occupational and mental health services to top London companies, as well as more day-to-day family medicine.

Charlie is also the Co-Founder of Global Health Action Strategies and Solutions (GHASS), established to provide effective and rapid independent response to global disasters.

Q. Why did you choose to study the DTM&H at LSTM?

"Because it is word famous as a 'field' school for tropical medicine, and it lived up to its reputation with great lecturers who had worked in fascinating places."

"Enjoy your course and learn from each other. Go explore the role and contribute what you can when you can."



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Graduates will develop high-level transferable knowledge, intellectual and practical skills enabling them to take a leadership role in providing technical support and addressing the social determinants of health. Graduates will be able to work with diverse populations and in a wide range of settings. The programmes' competency-based curriculum was developed following close consultation with employers and key stakeholders, a review of global health competencies from renowned global health agencies and informed by evidence from global health employers to ensure relevance and graduate employability.

To find out more information about the Global Health Programmes at LSTM, visit:

www.lstmed.ac.uk/MScGH

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